THE EFFECTS OF USING WRITING ACROSS THE CURRICULUM ON STUDENT ACHIEVEMENT IN MIDDLE SCHOOL

SUSAN PARNELL IRONS

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I am submitting herewith a field study written by Susan Parnell Irons entitled "The Effects of Using Writing Across the Curriculum on Student Achievement in Middle School." I have examined the final copy of this field study for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Education Specialist, with a major in Reading Specialist.

Dr. Ann Harris, Major Professor

We have read this field study
and recommend its acceptance:

Dr. Carlette Hardin

Dr. Camille Holt

Accepted for the Council:

Dean of the Graduate School

The Effects of Using Writing Across the Curriculum on Student Achievement in Middle School

A Field Study

Presented to the

Graduate and Research Council of

Austin Peay State University

In Partial Fulfillment

Of the Requirements for the Degree

Education Specialist

Susan Parnell Irons

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DEDICATION

This project is dedicated to my incredibly supportive family: my husband, Loren, who always believes in me and supports my various endeavors; my mother and best friend, Sarah Parnell, who is my example and confidant; my father, Donald Parnell, who is also my example and is always there to listen and advise; and finally, to Patricia B. Davis, my ever-present reminder that time is precious.

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ABSTRACT

The purpose of this study was to conduct a research study concerning writing across the curriculum and its effects on student achievement. Many previous studies noted that educators who do not normally teach writing instruction in their classes are often skeptical of the implementation of writing across the curriculum programs in their schools (Miller, 1991; Quinn & Wilson, 1997). This research attempted to determine if the utilization of writing strategies in the social studies classroom had an influence on the writing achievement of the students. Of the 120 students who completed the posttest, 59 students participated in the study. Student's scores in the control group diminished slightly while scores in the treatment groups increased slightly. However, it was determined that writing across the curriculum, specifically in the eighth grade social studies class, did not improve among these students.

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CHAPTER I

INTRODUCTION

Background of the Problem

High school graduates across the country have recently entered colleges and the work place without the writing skills necessary to compete in today's society. Many are disillusioned as they enter college or the work force. Often even those students who received superior grades in high school struggle when they enter the work place (Gehring, 2001). For those students who immediately enter college, as many as 25% must take remedial courses according to Viadero (2001). The realization of this lack of preparation often causes the graduates to reflect upon the quality of their elementary, middle, and high school education. Many have asked themselves why they were not adequately prepared in the area of writing; they have wondered why these skills are lacking (Manzo, 1999).

Many educators studied the research for answers to this problem. According to Smagorinsky (1995), the implementation of writing across the curriculum promoted higher order thinking skills beyond those closely associated with writing. The research indicated the use of writing in various areas of the curriculum facilitated higher order thinking. Writing across the curriculum received much attention in the 1970s and 1980s as students were asked to expand their writing outside the typical English class. It evolved into other concepts such as interdisciplinary writing, writing to learn, and content area writing (Miller, 1991). Unlike the other approaches, writing across the curriculum

emphasized the goal of improving writing skills by practicing them in various areas of the curriculum. While interdisciplinary writing, writing to learn, and content area writing certainly involved the practice of writing, the primary goal of these efforts is to enhance learning. The fact that writing skills improved as a result of all the programs was a welcome surprise, according to Miller (1991). While each concept involved particular technical aspects, the goal of each is to help students apply language skills in all areas of their curriculum while increasing learning.

When students are not completing their education with adequate writing skills, educators should reassess their teaching methods (Manzo, 1995). As in all areas of core knowledge, writing must be practiced to maintain and improve existing knowledge. Writing must no longer be addressed only in the English classroom. Writing instruction must be expanded across the curriculum (Olson, 1994). Improvement of writing skills is the responsibility of all members of the teaching team rather than the sole responsibility of the English teachers. With all members of the educational team integrating writing into their curriculum areas, educators send a message to their students that writing is indeed important. Everyone has a responsibility for writing instruction to enable all students to learn to do it well (Sheridan, 1992).

Statement of the Problem

Many students completing high school lack proficient writing skills. As a result, many must take remedial courses on the college level in order to achieve proficiency. While these skills are certainly lacking in many high schools, the burden of the implementation of writing begins in the middle school where many students possess poor

writing skills and, consequently, score below the proficient level on the T-Cap Writing Assessment.

Relationship of the Problem

By making the application of writing in various areas of the curriculum, students tend to make connections that lead to higher order thinking skills and general academic success. Educators who understand the importance of writing across the curriculum and its impact on student achievement may be more willing to implement writing into their own classes.

Research Questions

1. To what extent does the implementation of writing across the curriculum in the middle school classroom affect students' writing ability?

2. To what extent does the type of writing strategies implemented influence the writing achievement of the students?

Research Hypothesis

There will be no differences between the writing achievement of students who practice writing in the social studies classroom and those who do not.

Definition of Terms

1. Writing across the curriculum is an approach to writing instruction that extends the responsibility of teaching students to write to various areas of the curriculum.

2. Content writing is the practice of writing in content area classrooms for the purpose of furthering understanding of the subject matter. Although writing ability often improves in these situations, it is not the sole intent.

3. Journals are written records kept by students in various subject areas. Contents may vary based upon the requirement of the teacher, but journals may include essays, lists, graphic organizers, or dialogue.

4. Learning logs are notebooks that contain examples of student writing ranging from predictions to personal thoughts on a specific academic concept. While similar to journals, learning logs focus on subject-related concepts.

Limitations

There were many unique characteristics of this study. The rural setting, while beneficial in that many of the same subjects participated in the pre and posttest writing assessments, also limited the population to that of predominately Caucasian students with a very small portion being African-American. Since the study was limited to the teaching practices of one male instructor, his individual teaching techniques and the time of day could also be considered limitations.

Preview

This study investigated current research regarding writing across the curriculum and integrated particular writing strategies into the middle school classroom. Students' scores from the 2000 Seventh Grade T-Cap Writing Assessment were examined to determine current writing ability and served as the pretest. Students in the treatment group utilized writing strategies in the social studies classroom as part of the existing

curriculum. The students then provided a writing sample similar in format to the pretest. Analysis of the data provided information concerning the effects of writing across the curriculum on writing achievement. Scores were examined to determine if there was a difference in the pretest writing scores and the posttest scores.

CHAPTER II

REVIEW OF THE LITERATURE

For several years studies have been conducted which address the effects of writing across the curriculum on student achievement. Using the basis that writing is closely linked to learning, researchers have striven to find statistical evidence that supports their hypothesis (Davis, Rooze, & Runnels, 1992). This review of the literature examined the effect of writing across the curriculum on middle school students in grades five through eight in the areas of science, mathematics, social studies, reading, technological studies, music, and health education.

Writing in Science Classes

While writing implementation has occurred in various areas of the curriculum, researchers noted the presence of writing deficiencies, particularly in the area of science. This deficiency has proven noteworthy since research has shown science teachers to be more likely than teachers of any other content area to incorporate writing into the curriculum (Moore, 1994). Additionally, as these science students progressed in the educational system, their writing deficiencies were more evident.

Moore (1994) asserted the writing problems inherent in many professional scientists are the direct result of inadequacies in K-12 educational areas, the time when students should have obtained the important writing skills. However, rather than learning to write well, many students actually began to dislike writing, due to the perfunctory tasks assigned in school. For example, only a disturbing 3% of all writing assignments

given in high school even exceeded one paragraph. Therefore, students not only failed to learn the skills of effective writing, but they also failed to make the connection between the writing they were asked to do in school and the writing they would eventually apply in the workplace.

Based upon such information, researchers have focused their attention on the United States educational system. Much attention has been placed upon students in middle school since grades five through eight have been shown to be very influential in a student's writing development.

Learning Logs

In a longitudinal study focusing on fourth and fifth grade students, Bristor (1994) addressed the possibility that retention of knowledge was affected by writing across the curriculum. The study examined instruction in two classes. The control group received reading and science instruction separately. In addition, the experimental group received science instruction along with their reading instruction. The experimental group also used writing as a learning tool by keeping learning logs in order to allow students to make predictions, record observations and conclusions during experiments, record their favorite activities, and state what they had learned during each lesson. Emphasis was given to paraphrasing material and applying science concepts to real life through their writing. Creative writing was also implemented in the students' learning logs.

Results of Learning Log Implementation

The quantitative results of the study included a noted increase in the level of student achievement when students wrote about their experiment in learning logs. Relevancy of the topics addressed in their writing increased students' understanding of scientific concepts as well as developed their writing skills (Bristor, 1994).

Qualitative findings were very revealing. Students in the experimental group reacted positively. Their reading and writing ability improved drastically as the frequency of both increased. Student comments related to the experimental group practices indicated that they wanted to integrate writing into other areas of the curriculum because they felt it was simply more fun than the traditional methods (Bristor, 1994).

Prewriting Treatments

While the utilization of learning logs in various areas of the curriculum increased achievement, the use of prewriting treatments also produced positive results. One such study involved fifth grade students in a southern school district. The researchers examined writing in science classes of the randomly selected students in order to determine what effect prewriting activities had on student writing (Brodney, Reeves, & Kazelskis, 1999). The students were divided into four groups that included the reading/pre-writing treatment (r/pt) group, the reading only treatment (rt) group, the prewriting only treatment (pt) group, and the comparison group. After a reading assignment was completed, the r/pt group of students were asked to organize what they read within 10 minutes using prewriting tools such as webs, outlines, lists, notes, or

freewriting. The students were then given 30 minutes to compose an expository essay relating to the reading. After the rt group was given the reading assignment, the students were asked to compose an expository essay within 30 minutes. The pt group was given 20 minutes to organize their thoughts by using prewriting tools similar to the r/pt group. Then they were also given 30 minutes to compose an expository essay. Finally, the comparison group was instructed to use the information presented in class to write an expository essay within 30 minutes.

The essays of all students participating in the study were examined. The results led the researchers to several conclusions. In particular, they noted significant improvement present in students' essays when pre-writing techniques were applied. In addition, the students who received the reading-prewriting technique out-performed all other students in development of ideas, writing style, organization, mechanics, and overall communication. It is important to note that these students out-performed the group that used only prewriting prior to writing their essays. These results supported the idea that writing and reading are indeed linked processes.

Writing as an Assessment Tool in Science Classes

One particular research study involved 22 students in two different sections of a seventh grade general science class (Nolet & Tindal, 1995). The correlational study examined the use of essay writing as a valid assessment tool. Students in the study were given an essay task and a criterion referenced test for each of two units. The tests were administered 12 days apart. Instruction related to the material occurred during the interval between tests. A correlation analysis of the tests was conducted. From the results,

researchers found a significant positive correlation between the criterion referenced test scores and the length and number of concepts included in the students' essay task.

These findings indicated that when students wrote about a particular concept, they were more likely to retain the knowledge of the concept and exemplify this learning by applying their knowledge. These findings further indicated a positive correlation between the number of concepts students wrote about and their test scores. As the number of concepts increased, the more their test scores increased.

Write Now Approach in Science and Math

A related study also utilized junior high students as subjects. Rillero, Cleland, and Zambo (1995) considered attitude and writing achievement in the areas of math and science as they related to the use of a writing program called the Write Now Approach. The participants were eighth grade students in an urban school in Phoenix; they were of diverse multicultural backgrounds. Sixty percent of those students studied received free or reduced lunches.

The Write Now Approach to learning used the beginning of each class period as a time for students to share their writing. Students were also encouraged to respond to the work of others. Teachers provided the allotted time only for the students to share their work; they did not personally edit or correct papers.

The researchers chose to use within-teacher random assignment of classes, using a quasi-experimental control group design. Two science teachers who each taught four classes daily randomly selected two of their classes to serve as the treatment groups. Each teacher's remaining two groups served as the control groups. The resulting group of

science students consisted of 139 in the treatment group and 119 in the control group for a combined total number of 258 participants in the science portion. Of these, there were 141 males and 117 females. Likewise, the math group contained 140 in the treatment group and 132 in the control group. Of the 272 total participants in the math portion, 131 were male and 139 were female.

The hypothesis of the study was students using the Write Now Approach would show greater academic achievement and attitude improvement than students in the control group. Not only were math and science achievement noted, but language arts scores were tracked also in order to determine if writing in the various content areas had an effect on language scores.

The resulting science data indicated that students assigned to the treatment group scored better than the control group students on open-ended questions on the science test. However, while achievement differences occurred on tests given after the 10-week implementation of writing, there was no marked effect on attitude or on district language scores within this group.

Results of the math portion proved to be more significant. Results indicated a significant difference in attitude according to gender. On a scale of one to five (low to high), the mean rating of math attitude for males was 3.13. The mean rating for females was 2.91. These figures indicated that males felt more positive about the implementation of writing in math class than did the females.

Additionally, the language arts district scores for the students who participated in the implementation of writing in math classes exhibited a marked difference with the treatment group scoring a mean of 91.68. The control group scored a mean of 84.52.

These results indicated that there were no significant changes in math achievement; however, teachers noted the attitudes of the male students improved. The scores on language arts district tests of all students in the experimental treatment group surpassed the scores of those in the control group.

Portfolios in Eighth Grade Science Classes

Another study focusing on eighth grade students took place at The McCallie School, a college preparatory school for boys in Chattanooga, Tennessee (Childers & Lowry, 1997). The study focused on improving the eighth grade science curriculum by implementing an entire year of writing activities utilizing portfolios to complement typical instruction. Student portfolios consisted of required pieces such as a letter and a journal entry as well as student-chosen items including a favorite writing assignment and documentation of a creative activity.

By integrating writing into the science curriculum, the researchers noted the fact that students took a more active role in their learning, assessments, and evaluations. Student interviews indicated they were truly involved and excited about their learning. Additionally, since students wrote about their learning, the researchers were able to more accurately assess both teaching and learning, thus achieving the goal of their study.

Writing in Social Studies Classes

While science teachers appeared more likely to integrate writing into the curriculum, social studies teachers across the country have also noted the benefits of

using writing to complement the curriculum. Such studies examined the use of writing assignments in social studies classes.

Researchers who examined a seventh grade class experienced success when they integrated writing into the social studies curriculum when studying a unit on Africa. Students were asked to write persuasive essays based upon information related to recent studies of Africa. While the researchers indicated some logistical problems concerning the quality of writing produced, it was noted that students were able to relate what they had studied to their writing (Nystrand & Graft, 2001).

In a similar situation in Lawrence, Kansas, fifth grade teachers implemented writing into their instruction of a social studies unit on World War II (Wyatt, 2001). After the students learned about the issues related to the war in social studies and studied various research techniques in English class, students were introduced to senior citizens in their community who were willing to share their experiences during World War II.

Students interviewed the senior citizens using their techniques encountered in English class. After documenting their interviews, students were asked to focus and conduct additional research on one aspect brought up during the interview. The culminating project involved writing, revising, publishing, and presenting the biography of the senior citizen they interviewed. The students also presented the additional information gathered as a result of the experience.

Teachers involved in the activity noted students' increased skills in the areas of spelling, grammar, punctuation, and attention to detail. They attributed this success to the fact that students were active participants in the learning process. Not only were they involved in their learning, but they also had to take responsibility for their learning.

Consequently, the students saw an authentic reason for learning many of historical facts and figures as well as grammar and writing rules when they could produce a written product that clearly touched the lives of others.

Utilizing Writing in Interdisciplinary Units

A seventh grade social studies class in Sheboygan, Wisconsin, also experienced success when involving writing in their classroom activities (Nelesen, 2000). The middle school interdisciplinary team (composed of social studies, language arts, science, and math teachers) embarked upon a project that involved complete cooperation across the disciplines.

The result of their efforts was a unit centered on the presidential election of 1996. The students studied the election process; they also learned to write effectively about the issues of paramount concern in the election. Additional writing activities were (a) they wrote and performed speeches and commercials, (b) they created graphs, and (c) they examined polling techniques utilized by the media.

The teachers noted the remarkable determination and enthusiasm of their students as they worked on the project. Comments from teachers, students, parents and administrators indicated students were intrinsically motivated and engaged in the activities.

Language Arts and Social Studies Collaboration

Smith (2000) reported his findings concerning achievement when social studies and language arts teachers collaborated to create a living history museum for eighth grade students. The goal of their work was to bring history to life for the students.

The teachers involved in the study collaborated in order to benefit their students. For example, they planned their teaching units around common themes. Rather than relying on their textbooks to determine the chronology of the skills, the teachers worked together to develop a collaborative unit. While the social studies class discussed issues related to a particular time period, students used relevant writing topics in English class. The English teacher focused on writing for an audience and the importance of determining characteristics of the audience to produce the best possible writing. Students also learned important research skills as they investigated to find additional information concerning their topics. The social studies teacher then reviewed the students' writing for historical accuracy. These writings, which occurred over the entire nine-week unit, were compiled for a museum display. Evaluation played an integral part in the project in that students were asked to include true facts as well as faulty evidence. The students examined each other's work and determined accuracy by completing additional research to verify or disprove the claims.

Both teachers reported being satisfied with the results of the collaborative project. The English teacher enjoyed being able to give students authentic topics about which to research and write rather than simply making up topics that were of no importance to the students. The social studies teacher related an incident that occurred the year after the project was implemented. New students inquired on the first day of school about the museum project and expressed a desire to "do that project they did last year." Word had apparently traveled quickly about the activities that occurred, and it had certainly generated much excitement and anticipation about the upcoming year.

Writing in Math Classes

The recent push by the National Council of Teachers of Math (NCTM) for teachers to integrate writing into their curriculum caused teachers across the nation to search for ways to successfully include writing in a subject area that has for years been without it (Maxwell, 2000). In fact in the past, math and English have been viewed as two different worlds, one of numbers and one of words (Kolstad, Briggs, & Whalen, 1996). However, since writing involves many of the same thought processes utilized in mathematics, it stands to reason that the two should be combined. Research in the area concerning writing in math class indicated students understood mathematical concepts better when they wrote about them. In addition, they experienced less math anxiety, and their attitudes toward math improved when they were asked to write about mathematical concepts (Kolstad, Briggs, & Whalen, 1996; Miller, 1991; Norwood & Carter, 1994; Quinn & Wilson, 1997). The researchers pointed out that students who wrote about their math problems, regardless of whether or not they were able to solve these problems, engaged in higher order thinking as a result.

When faced with the idea of integrating writing into their mathematics curriculum, many teachers supported the theory guiding the effort; however, when it came to actually implementing the theory into practice in their classrooms, many remained resistant. According to a survey of elementary, middle, and high school mathematics teachers conducted by Quinn and Wilson (1997), many teachers referred to time as a factor influencing their resistance to integrating writing into their classes. For example, they felt their class time was limited enough without adding any other curricular responsibilities. In addition, they were intimidated by the amount of time it would take to

grade the writing of all their students on a regular basis as well as the challenge of dealing with students who lacked proficient writing abilities. While they believed in the importance of including writing in the math curriculum and even pointed out that writing in math classes helped students solidify mathematical concepts, they were still not comfortable implementing writing in their classes due to the time factor. Although factors regarding time and writing deficiencies hindered some teachers from implementing writing in their classes, it should be noted that many other teachers decided to take the risk and introduced writing into their classrooms.

Using Journals in Math Classes

The merging of mathematics and writing came as no surprise to researchers who examined pictorial journal writing, writing in math class that involved pictures, symbols, numbers, and manipulatives to better understand mathematical concepts. This multimodal, interactive approach to mathematics increased visual imagery, verbalization, and connections to personal experiences; in turn, the experience engaged the students in their learning (Stix, 1994). Students who possessed a type of ownership of the learning also experienced higher levels of mathematical confidence and better retention of mathematical concepts.

Stix (1994) noted the importance of student writing and teacher response. He noted the difference between the typical lecture and observation that happened in traditional math classes and the classes that implemented journal writing into the curriculum. When students wrote their observations, it was easier for teachers to notice misconceptions or mastery related to instruction. Thus, learning in the math classroom

became more of a dialogue between the students and the teacher rather than strictly a monologue of the teacher who struggled to read the body language and facial expressions of the students.

Visualization and Verbalization

The visualization and verbalization processes found in classrooms where journal writing was present played an important role in the development of skills in both math and writing. The visualization of mathematical concepts offers a "bridge between the concrete and abstract thinking" of students (Stix, 1994). The presence of verbalization helped students to restate what they had learned; therefore, students experienced more involved learning.

Norwood and Carter (1994) also reported the successes of implementing journal writing into mathematics. The data from the study indicated several beneficial uses of journals in the math class including as part of the initial set, as a reviewing tool, as a pre-testing tool to assess current knowledge before instruction, or as a tool to identify the need for remedial instruction. Researchers noted the importance of the students taking ownership of their journals and suggested students create covers for their journals. The ownership of their journals encouraged responsibility and helped to engage the students in the activities.

Likewise, Miller (1991) offered suggestions for making the implementation of writing into the math curriculum work smoothly. The paradigm shift in mathematics has demanded a movement away from the emphasis on right and wrong and toward an emphasis on the conceptual processes involved. Consequently, writing used as a dialogue

between students and teacher or as a channel for students who would not normally ask questions to be able to write their question proved successful in many cases.

Integration of Writing and Technology

While technology was originally viewed as a way to print or publish students' writing, Peck and Dorricott (1994) pointed out that this view has changed. Using technology as an integral part of the writing process enhanced the quality as well as the quantity of writing and thinking the students practiced. The authors reported beneficial results associated with using word processing programs to facilitate writing. These benefits included a drastic reduction in the fear of writing when a computer was used. Likewise, due to student perceptions that writing on the computer is more temporary than writing with pen and paper, they were more likely to take risks related to both grammatical usage and creative writing. Students reported a greater ease in the actual job of keyboarding compared to handwriting. Finally, perhaps the most important aspect of integrating technology and writing reported by Peck and Dorricott (1994): documents generated from a computer gave students a greater feeling of accomplishment than those produced traditionally.

Technology as a Communication Tool

Wepner, Balmont and Thurlow (2000) discussed the importance of using technology as a tool for writing development. They pointed to various research regarding the integration of writing with technology. For example, writers made fewer mechanical errors when they used a computer for their composition. Likewise, teachers who utilized

a variety of software in their classrooms reported the presence of more authentic writing opportunities for their students. The presence of both text and visuals in software programs that required writing led to greater creativity in student writing.

The integration of writing into the technology curriculum was particularly encouraging for Nichols, Wood, and Rickelman (2001). Computers in the classroom fostered purposeful communication and implementation of writing as well as provided motivation by reducing the boredom generally associated with writing. By using collaborative writing activities, teachers in the technology classes met the needs of more students. Students who struggled with the typical writing assignments were given a new chance to refine and improve their skills by using technology. The use of computers to encourage students to write provided for purposeful communication in the technology class.

Writing in Music Class

Fifth and sixth grade students were the focus of a research study conducted by Flowers (2000). The students studied musical works and their composers. The control group simply listened to the music without writing. However, the experimental group produced written descriptions while listening to the musical selections. They were instructed to make notes describing the music to another person so that person could recognize the music based on the written description, a task that required listening, thinking, and writing.

The results on the listening test were compared to determine what role writing about music played in retention of information. The researchers noted how the students'

writing seemed to enhance the music curriculum. For example, student descriptions included terms discussed in their music class. In addition, the researchers noted the excellent use of metaphors in the descriptions. The researchers asserted that music is indeed an excellent way to integrate writing into the curriculum as it not only provided a springboard for writing, but it also enhanced the musical learning objectives.

Routman (1994) suggested other ways of incorporating language instruction into the music class. Examples noted included having students write summaries of the instructional material in the form of a song and setting student writing to music as an opportunity to discuss rhythm. By combining writing and music, the teacher addressed various learning styles and engaged the learners.

Integration of Writing and Health Instruction

Jenkins (1991) suggested the integration of writing into health education by using limericks as "icebreakers" or introductory activities in the health classroom. Expressive writing helped students use higher order thinking skills and even look beyond the obvious to find a more sophisticated way of viewing the issues. The researcher's experiences indicated writing, especially limerick writing, was a particularly helpful strategy for students who were usually not creative in the typical health class.

CHAPTER III

METHODOLOGY AND PROCEDURES

The Sample

The purpose of this study was to determine the effects of implementing writing across the curriculum in the eighth grade social studies class on student writing achievement. The school system from which the students were selected for the study was located in a rural school district consisting of five schools including one high school, one K-12 school, one K-8 school, one K-3 school, and one junior high school (grades 4 through 8). Permission was obtained from the Austin Peay State University Office of Grants and Sponsored Programs, the Institutional Review Board and College of Graduate Studies. (See Appendix A-1) Likewise, permission to conduct the study was also obtained from the appropriate system administrators. (See Appendix A-1)

The school in which the study was conducted served an area where 9% of the population was below poverty level according to the 1999 U.S. Census. Additionally, according to information collected from the school system, 49% of the school population received free/reduced lunches during the 2000-2001 school year. Likewise, the school population included 90.7% Caucasian, 7.7% Black, 1.2% Hispanic, and 0.3% Asian students.

The students selected to participate in the study were chosen from the sample group of 120 eighth grade students. Individualized scheduling provided heterogeneously grouped homerooms with each class period lasting 53 minutes. The students were

divided into five sections for social studies classes. The students who participated in the study by practicing the in-class writing strategies and completing the posttest writing assessment were chosen based on parental consent and personal willingness to participate in the study. Students who had permission from their parents to participate in the study were asked to complete student assent forms. (See Appendix A-2) Letters were sent home with students to inform parents of the purpose of the study as well as to explain the format of the study and how the information gathered would be utilized. The letter requested formal consent from the parent for the child's participation in the study, including confidential access to the students' 2001 T-Cap Writing Assessment scores and the results of the posttest to be conducted at school. (See Appendix A-3) Students who returned the parental consent form received a bonus point added to their homework average in social studies, regardless of the decision to participate in the study.

The Pretest

Student scores from the 2001 T-Cap Writing Assessment were examined to determine a pretest score. Scores were based upon the Tennessee Writing Assessment Scoring Rubric:

6-Outstanding –	High degree of proficiency
5-Strong –	Clear proficiency with minor errors
4-Competent –	Proficiency with errors in mechanics or usage
3-Limited –	Some degree of proficiency but clearly flawed
2-Flawed –	Limited proficiency with serious errors
1-Deficient –	Fundamental deficiencies, incoherent, or undeveloped

The Posttest

The posttest writing prompt was selected to assess the students' current writing ability based upon the state approved rubric. The prompt was designed by the researcher to duplicate the format and difficulty level of the 2001 T-Cap Writing Assessment. Special attention was given to construct the prompt in a manner similar to the sample prompts provided by the Tennessee State Department of Education. (See Appendix B)

Data Collection

All eighth grade students were assembled and given information regarding the research study. Each student received two copies of the information (a personal copy and a research copy marked with "yes" or "no" for participation in the research study).

Two weeks following the initial meeting, the researcher met with all eighth grade students. All students were given a student assent form; however, only those students whose parents agreed to allow them to participate and who personally wished to participate in the study were asked to sign the assent form. All assent forms, whether completed or not, were collected in order to assure confidentiality for students who chose not to participate.

Students were assigned to a control group or an experimental group based upon their class schedule. Students in the control group did not complete additional writing assignments during the study. Students assigned to the experimental groups practiced writing using the strategies implemented into their social studies classes. Strategies

included learning logs, graphic organizers such as K-W-L charts and webbing, and daily questions.

At the end of the six weeks period, all eighth grade students, regardless of whether they chose to participate in the study by having their scores reported, were administered the posttest. The papers of the participants in the study were assigned numbers to ensure student confidentiality.

A group of teachers chosen by the researcher was trained to score expository essays using the state of Tennessee guidelines. Anchor papers provided by the Tennessee State Department of Education as well as the state rubric were utilized in the training. Teachers evaluated and discussed sample anchor papers written by seventh grade students from various areas of the state. Explanations were discussed for the assigned scores provided by the state department. Teachers initially examined posttest essays of those students who chose not to have their scores reported in the study. This enabled the team to view essays written on the posttest writing prompt. The practice scoring continued until all teachers agreed upon the assigned scores for ten of the sample papers.

The teachers then scored the essays of those students who participated in the study. While there were three teachers present in addition to the researcher, only two teachers read each essay. The third teacher was asked to read an essay only if the other two teachers did not agree on the score. Consequently, teachers rotated scoring in order to provide numerous breaks. Scores were recorded on a coded score sheet to maintain students' privacy. (See Appendix C)

Statistical Procedures

Essay scores assessed by the rating team of teachers were examined. The number of agreeing scores was compared to the total number of essays scored in order to determine inter-rater reliability.

The scores obtained on the 2001 T-Cap Writing Assessment were compared to the scores on the posttest administered by the researcher. The posttest scores were separated according to the control group and individual treatment groups. Differences in mean scores were noted to determine what effect, if any, the implementation of each writing strategy had on writing achievement.

In addition, student scores were examined to determine to what extent gender and race had on the results. The mean score for male participants was compared to the mean score for female participants in the control group and treatment groups in order to determine if there were any significant differences in scores based upon gender. Scores were also examined to determine to what extent race had on students' scores in each group.

CHAPTER IV

DATA AND RESULTS

Demographics

Of the 120 students who completed the posttest, 59 participated in the study including 28 (47%) females, 31 (53%) males, 5 (8%) African-American students, and 54 (92%) Caucasian students.

Of the control group class of 29 students, 13 students participated in the study including 9 (69%) males and 4 (31%) females. Three students (23%) were identified as African-American.

Of the 23 students in the Treatment Group A that utilized K-W-L charts to practice writing in their social studies class, 12 students participated in the study including 3 (25%) males and 9 (75%) females. All students in this class were identified as Caucasian.

Of the 24 students in the Treatment Group B that practiced writing by using webbing in social studies class, 11 students participated in the study including 7 (64%) males and 4 (36%) females. One student (.09%) in this class was classified as African-American.

Of the 20 students in the Treatment Group C that utilized learning logs to compliment their social studies lessons included of 10 students who participated in the study. The students in this particular group were equally divided according to gender

with 5 (50%) males and 5 (50%) females. One student (10%) in the class was identified as African-American.

Of the 24 students in the Treatment Group D that implemented a daily question, 13 students participated in the study including 7 (54%) males and 6 (46%) females. All students in this group were classified as Caucasian.

Inter-rater Reliability

Essay scores evaluated by the rating team of teachers were examined. An inter-rater reliability coefficient was calculated to be .86.

Group Scores

Mean scores were calculated in various ways. The control group's scores were calculated. All of the treatment groups were combined to determine the mean score for all treatments. Then each treatment group was examined individually to determine to what extent the implementation of each strategy affected writing achievement.

Control Group

Mean scores for both the pretest and posttest were calculated for the control group. The 2001 T-Cap Writing Assessment served as the pretest; the mean score of 4.2 was calculated for the control group. The mean score on the posttest for the control group was 3.8. In addition, pretest and posttest mean scores were also calculated according to gender and race. Male students in the control group received averaged 4.0 on the pretest while female students scored an average of 4.5. Posttest scores, however,

did not differ as much. The mean score for both male and female students on the posttest was 3.8. It is interesting to note the significant difference in pretest and posttest means for Caucasian and African-American students in the control group. Caucasian students received the mean score of 4.2 on the pretest and 4.0 on the posttest. However, the African-American students received the mean score of 4.0 on the pretest and 3.0 on the posttest.

Table 4-1 Pretest and Posttest Mean Scores

Group	Male Pretest	Male Posttest	Female Pretest	Female Posttest	Caucasian Pretest	Caucasian Posttest	African-American Pretest	African American Posttest	Total Pretest	Tota Postt
Control	4.0	3.8	4.5	3.8	4.2	4.0	4.0	3.0	4.2	3.8
A	4.7	4.7	4.4	4.8	4.5	4.8	-----	----	4.5	4.8
B	4.3	4.6	3.8	4.3	4.2	4.5	3.0	4.0	4.1	4.5
C	4.0	4.4	4.4	4.4	4.2	4.3	3.0	4.0	4.2	4.4
D	4.2	4.0	4.7	4.3	4.2	4.3	-----	-----	4.4	4.2

Treatment Groups

Treatment Group A utilized K-W-L Charts in the social studies class. Pretest and posttest means were also calculated for this class according to totals and gender. However, race was not considered a factor in this class because all participants were classified as Caucasian. The pretest mean score for this group was 4.5; the posttest mean score was 4.8. When scores were considered according to gender, male students achieved identical mean scores of 4.7 on both the pretest and the posttest. Female students, however, achieved a mean score of 4.4 on the pretest and 4.8 on the posttest.

Treatment Group B used webbing to compliment their social studies curriculum. The pretest mean score for this group was 4.1; the posttest mean score was 4.5. When scores were examined according to gender, male students had a pretest mean score of 4.3, and female students had a mean score of 3.8. Posttest scores improved for both groups. The male students earned a posttest mean score of 4.6; the females earned a posttest mean score of 4.3. The Caucasian students in the class received a pretest mean score of 4.2 and a posttest mean score of 4.5. The African-American student in the class earned a pretest score of 3.0 and a posttest score of 4.0.

Treatment Group C wrote in learning logs as part of their social studies instruction. The pretest mean score for these students was 4.2; the posttest mean was 4.4. When the scores were examined according to gender, the pretest mean for male students was 4.0 while their posttest score was 4.4. Likewise, female students earned a mean score of 4.4; however, the posttest score for female students remained unchanged at 4.4. An examination of scores according to race resulted in a pretest mean score of 4.2 and a posttest mean of 4.3 for Caucasian students. The African-American student in this treatment group earned a pretest score of 4.2 and a posttest score of 4.4.

Treatment Group D responded in writing to a daily question posted by the instructor as part of the social studies lesson. The pretest mean score for this group was 4.4; however, the posttest mean score was 4.2. When scores were examined according to gender, the male students' pretest mean score was 4.2, and their posttest mean score was 4.0. Likewise, the female students' scores on the pretest averaged 4.7; their posttest mean was 4.3. Race was not considered a factor for this group because all students who participated in the study were identified as Caucasian.

When the treatment groups were considered as a whole, the mean pretest score was determined to be 4.3; the posttest score was calculated as 4.4. When disaggregated according to gender, male students in the treatment groups received a mean score of 4.2 on the pretest and 4.4 on the posttest. Likewise, female students in the treatment groups received a mean score of 4.4 on the pretest and 4.5 on the posttest.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study was conducted to determine to what extent the implementation of writing strategies into the eighth grade classroom affected writing achievement. A posttest similar to the pretest, the 2001 T-Cap Writing Assessment, was designed to assess the writing achievement of eighth grade students. This posttest provided the researcher with a writing sample similar in nature to the sample scored by the State Department of Education during the previous school year. Posttest scores were compared to pretest scores to determine if the utilization of writing strategies in the social studies classroom had an influence on the writing achievement of the students.

Conclusions

Research Question One

This question was posed to determine the extent to which implementing writing strategies into the middle school classroom affected students' writing abilities. While there was a slight difference (.64) between the posttest scores of those students in the treatment groups compared to those students in the control group, it was determined that there was no significant difference in the scores. Therefore, writing across the

curriculum, specifically in the eighth grade social studies class, did not improve writing achievement among these students.

Research Question Two

Research question two examined the influence each particular writing strategy appeared to have on student writing achievement. While it is important to consider that there was only a slight difference (0.6) between the scores of the students who participated in the treatment groups and the control group, the scores within the individual treatment groups were noteworthy. For example, students who were in Treatment group C, who implemented Learning Logs into the social studies class, received the highest mean score on the posttest writing assessment. While female students' mean scores remained the same at 4.4; male students, Caucasian students, and African-American students' mean scores increased. Likewise, implementing writing across the curriculum seemed to be least effective for Treatment Group D, the students who responded to a Daily Question. Within this treatment group each demographic category of students decreased their mean score from the pretest to the posttest with the exception of Caucasian students who increased only slightly (.1).

The hypothesis investigated for this study stated there would be no difference in the writing achievement of students who practice writing in the social studies classroom and those who do not. This hypothesis is accepted based upon examination of the data collected in the eighth grade social studies classes.

Recommendations

As a result of the data collected in this field study, the following recommendations were proposed:

1. It is recommended that the study be conducted over a longer period of time in order to accurately measure students' writing abilities.
2. It is recommended that the study be implemented with a larger sample group to include students from more diverse populations.

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APPENDICES

Appendix A-1

Letters of Approval of Research Study

Austin Peay State University
Institutional Review Board

November 2, 2001

Susan Irons
c/o Ann Harris
Education Dept.
APSU Box 4545

RE: Your application dated September 20, 2001 regarding study number 02-011: The Effect of Implementing Writing Strategies into Content Areas (Austin Peay State University)

Dear Ms. Irons:

Thank you for your response to requests from a prior review of your application for the new study listed above.

Congratulations! This is to confirm that your application is now fully approved. The protocol is approved through one calendar year. The consent form submitted with your application is approved. You must obtain signed written consent from all subjects. This approval is subject to APSU Policies and Procedures governing human subjects research. You may want to review this policy which can be viewed on the APSU website at : www2.apsu.edu/www/computer/policy/2002.htm

You are granted permission to conduct your study as most recently described effective immediately. The study is subject to continuing review on or before October 22, 2002, unless closed before that date. Enclosed please find the forms for reporting a closed study and for requesting approval of continuance.

Please note that any changes to the study as approved must be promptly reported and approved. Some changes may be approved by expedited review; others require full board review. If you have any questions at all do not hesitate to contact Lou Beasley (221-6380; fax 221-7595; email: beasleyl@apsu.edu) or any member of the APIRB.

Again, thank you for your cooperation with the APIRB and the human research review process. Best wishes for a successful study!

Sincerely,

Lou M. Beasley

Dr. Lou M. Beasley
Chair, Austin Peay Institutional Review Board

75 College St. South
McEwen, Tennessee 37101

October 4, 2001

Mr. Jimmy Long
Humphreys County Board of Education
Waverly, Tennessee 37185

Dear Mr. Long,

I am currently working toward my Education Specialist degree at Austin Peay State University. As a part of my program of study, I am currently enrolled in Education 6050: Seminar on Research. I am required to design and conduct a research study.

My proposed study involves examining the effects of implementing writing across the curriculum into the 8th grade social studies classroom on students' writing achievement. Matt Herbert has agreed to assist me in my research by allowing me to use students in his social studies classes for my research. Likewise, Mr. Reid has approved the proposed project.

To summarize the study, selected classes will utilize writing strategies in addition to their regular social studies curriculum. Other classes will not utilize the strategies. Students will then take a posttest writing assessment to measure their writing abilities. These papers will be scored using the state rubric. The posttest scores will then be compared to pretest scores to determine what difference, if any, the implementation of writing strategies into the social studies classroom made on writing achievement.

As part of my research study, parental consent and student consent will be obtained. Only those students whose parents approve their participation and who are personally willing to participate will be considered in the study. I would like to use the February 2000 7th grade scores from the T-Cap Writing Assessment as the pretest score in my study. Individual student names or identifying factors will not be utilized as only summary information will be reported in order to protect student confidentiality.

Please consider my request to conduct my research study as described. You may contact me at school or at home at (931) 582-3930 if you need additional information concerning the study. I am looking forward to your response. Thank you for taking the time to consider my request.

Sincerely,

Susan P Irons

approved 10/4/01
James B Long

Susan Parnell Irons
cc: Mr. Reid
Mr. Curtis

Appendix A-2

Student Assent Form

Assent Form for 8th Grade Students

You are being asked to participate in a research study. Your parents have said it was okay for you to take part in the study, but we need your permission to go ahead. This study is designed to find out if practicing writing in the social studies classroom helps students become better writers.

Your score on the 7th Grade T-Cap Writing Assessment will be used to determine how well you currently write. Some of Mr. Herbert's social studies classes will practice writing in class. Some of Mr. Herbert's classes will not be practicing writing. At the end of the six weeks, you will be asked to take a posttest. This posttest will be similar to the T-Cap Writing Assessment you took in the 7th grade. This posttest will be scored like the 7th Grade test; however, your test will not be sent elsewhere to be scored. A team of teachers from your school will evaluate your papers. The teachers will NOT know who wrote the papers because all names will be removed before the papers are scored.

Your participation will help researchers know if writing in classes other than English will help students become better writers. The summary results of this study will be used to help teachers at your school decide if writing should be taught in their classes.

You are not required to participate in the study. If you decide not to participate, your scores from the 7th Grade T-Cap Writing Assessment will not be included in the study. You will, however, still be required to complete all assignments given by your teacher.

If you choose not to participate, you will not be punished or penalized in any way. In fact, only the researcher will know who is not participating. Your classroom teacher will not know if you are a participant.

If you have any questions, please ask me now. If you think of a question later, you may ask me between classes. You may also have your parents contact me at school Monday through Friday at (931) 296-4514 if they have any questions. I will get back to them as soon as possible.

Sincerely,

Susan P. Irons

When you sign below, you agree to participate in the study as it has been described to you.

_____ _____

(Print Your Name) (Your Signature)

_____

(Today's Date)

Appendix A-3

Parental Consent Form

Consent of Participation in a Research Study
Austin Peay State University

Your child is being asked to participate in a research study. This form is intended to provide you with information about this study. You may ask the researcher listed below about this study, or you may call the Office of Grants and Sponsored Research, Box 4517, Austin Peay State University, Clarksville, TN 37044, (931) 221-7881 with questions about the rights of research participants.

1. Purpose of the Study

The purpose of the current study is to find out if practicing writing in the social studies classroom helps students become better writers.

2. Procedures to be Used

Student scores from the 7th Grade T-Cap Writing Assessment will be examined to determine how well students currently write. Students will be grouped according to their current class schedule. Some of Mr. Herbert's classes will practice writing in class. Some of Mr. Herbert's classes will not practice writing. A posttest will be given at the end of the six weeks. This posttest will be similar to the T-Cap Writing Assessment your child took in the 7th grade. This posttest will be scored like the 7th Grade test; however this test will not be sent somewhere else to be scored. A team of teachers from Waverly Junior High School will score your child's paper. The teachers will NOT know who wrote the papers because all names will be removed before the papers are scored. Posttest scores will be compared to the 7th grade scores to find out if practicing writing in social studies has an effect on your child's writing ability.

3. Regarding Benefits and Risks

Potential benefits for your child include increased writing abilities for those students who receive the instruction that includes writing practice. In addition, your child's participation will help teachers at Waverly Junior High School decide if writing should be taught in their classes. There are no more than minimal risks to the students.

4. What will happen to the information collected?

The researcher will examine students' pretest scores; each student will be identified by a number rather than by name to assure confidentiality. Likewise, names will be removed from the pretest, and students' writing samples will be assigned a number. Results will not be reported using students' names. Information will only be reported in summary format. This summary information will be examined to determine what effects practicing writing in social studies class has on student writing achievement.

Please read the statements below. They describe your rights and responsibilities, as your child is a participant in this research project.

1. I agree to allow my child to participate in the present study conducted by Susan P. Irons from the Education Department at Austin Peay State University. I understand that my child will be asked to produce a posttest writing sample for writing analysis.

2. I have been informed and my child will be informed in writing of the procedures to be followed and about any risks that may be involved. I have also been told of any benefits that may result from my participation. Mrs. Irons has offered to answer any further inquiries that I may have regarding the research, and she can be contacted by phone Monday through Friday at (931) 296-4514.

3. I understand that my child may choose to not have his/her test scores used for analysis at any time without penalty or prejudice. I also understand that any data obtained from my child will be withdrawn from the study and destroyed if I withdraw.

4. I realize that by agreeing and signing this form, I willingly give consent for my child to participate in the current study. I also acknowledge that I have been given a copy of this form to keep for my records.

_____ Yes, my child **can participate** in the study.

_____ No, my child **cannot participate** in the study.

_____ _____

Name (Please Print) Date

_____ _____

Signature Child's Name (Please Print)

Appendix B

Eighth Grade Writing Assessment

Eighth Grade Writing Prompt
Expository

READ THIS TOPIC CAREFULLY BEFORE YOU BEGIN WRITING.

Most people dream of visiting a special place. This place may be nearby of far away.

Before you begin to write, think about a place you dream of visiting and why you would like to go there.

Now explain in an essay why this is one place you would like to visit. Support your ideas with details.

You may use this space for prewriting notes. However, only the lined pages of your answer will be scored.

NOTICE: Remember that you have a time limit of 35 minutes. Use the space below for notes only.

Appendix C

Scorer Rating Sheets

Posttest Rating Control Group

#, Race, & Gender	Rater #1	Rater #2	Rater #3	Posttest Score	Pretest Score
35. OMIT					
36.BM	2		2	2	3
37.BF	3		3	3	5
38. WM		2	2	2	3
39.WM	3		3	3	4
40.WM	3		3	3	3
41.WF		4	4	4	5
42.WM	5	5	4	5	5
43.WF	4	3	4	4	4
44.BM		4	4	4	4
45.WF		4	4	4	4
46.WM		6	6	6	5
47.WM		5	5	5	5
48.WM	4		4	4	4
				3.64285714	4.15384615
				3.6	4.2

Posttest Rating Treatment Group B (Webbing)

#, Race, & Gender	Rater #1	Rater #2	Rater #3	Posttest Score	Pretest Score
13.WF	5	5		5	4
14.WM	6	6		6	5
15.WM	5	5		5	4
16.WM	4	4		4	5
17.WM	4	5	5	5	4
18.WF	4	4		4	4
19.BF		4	4	4	3
20.WM		4	4	4	4
21. OMIT					
22.WF		4	4	4	4
23.WM		4	4	4	4
24.WM		4	4	4	4
				4.45454545	4.09090909
				4.5	4.1

Posttest Rating Treatment Group C (Learning Logs)

#, Race, & Gender	Rater #1	Rater #2	Rater #3	Posttest Score	Pretest Score
25.BF	5		5	5	4
26.WM	5		5	5	4
27.WM	4		4	4	4
28.WF	4		4	4	5
29.WM	4		4	4	4
30.WM	4		4	4	4
31.WF	4	3	4	4	5
32.WF	5		5	5	4
33.WF	4	4		4	4
34.WM	5	4	5	5	4
				TOTAL =	TOTAL =
				44/10=	42/10=
				4.4	4.2

Posttest Rating Treatment Group D (Daily Question)

#, Race, & Gender	Rater #1	Rater #2	Rater #3	Posttest Score	Pretest Score
49.WM	3		3	3	4
50.WM	3		3	3	5
51.WM	4	4		4	4
52.WF	3	3		3	4
53.WF	4		4	4	5
54.WF	6	6	5	6	5
55.WM	3		3	3	4
56.WF	4	5	4	4	4
57.WF	4	4	5	4	5
58.WM	5	5		5	4
59.WM		5	5	5	4
60.WM	5	5		5	4
61.WF	5	5		5	5
				4.15384615	4.38461538
				4.3	4.4