A teacher in a rural high school in East Tennessee observed that her high school advanced English students would readily agree to writing journal entries as long as they were allowed to use word processing software. In the past, students had bemoaned the daily ritual of journal writing using pencil and paper. The teacher wanted to find out if students actually wrote more words using word processing software than they produced when writing with pen and paper. The literature review on the benefits of using word processing software centered on the elementary grades, when students are unfamiliar or unpracticed with keyboarding skills. Results of those studies were negative since students had to contend with not only writing skills, but also the subtleties of keyboarding. Two English II Advanced classes participated as the subjects for this study. During the first six weeks of school, both classes were introduced to the journal writing process. Upon entry into the classroom, students would write for 15 minutes on a topic assigned by the teacher, which related to the day's lesson. During the second six weeks, the control group wrote in daily journals using the traditional classroom tools of pencil and paper. The treatment group met in the computer lab for the first 15 minutes of class to write in journals using computer software. At the end of the second six weeks, the teacher compared the word totals of each group to determine which group had produced the highest number of words. This research concluded that students familiar with keyboarding skills will produce more words in daily journals than those who write using pencil and paper. (Contains 25 references.) (Author/RS)
THE EFFECTS OF USING MICROSOFT WORD® ON JOURNAL WORD COUNTS IN THE HIGH SCHOOL ENGLISH CLASSROOM

A Research Project
Presented to
the Department of Teacher Education
of Johnson Bible College

In Partial Fulfillment
of the Requirement for the Degree
Master of Arts in
Educational Technology and Bible

by
Sherry B. Godsey
April, 2000
This research project by Sherry B. Godsey is accepted in its present form by the Department of Teacher Education at Johnson Bible College as satisfying the research project requirements for the degree of Master of Arts in Educational Technology and Bible.

Date \( \text{May 5, 2000} \)

Chairperson, Examining Committee

Member, Examining Committee

Member, Examining Committee
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Two English II Advanced classes participated as the subjects for this study. During the first six weeks of school, both classes were introduced to the journal writing process. Upon entry into the classroom, students would write for 15 minutes on a topic assigned by the teacher, which related to the day's lesson. The six weeks grade on the assignment was determined only by whether the students had indeed written on topic for the day. Students were not penalized for poor spelling or grammatical errors.

During the second six weeks, the control group wrote in daily journals using the traditional classroom tools of pencil and paper. The treatment group met in the computer lab for the first 15 minutes of class to write in journals using computer software. At the end the second six weeks, the teacher compared the word totals of each group to determine which group had produced the highest number of words.
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ACKNOWLEDGEMENTS

Grateful acknowledgement is given to Dr. Chris Templar for her energy, patience and support throughout the coursework which has culminated in my Action research project.

I also express my appreciation to the Examining Committee for their time, and guidance throughout the project.

Finally, I am profoundly indebted to my family who have offered me nothing but love and support during the three years it has taken me to complete this degree.
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Chapter 1

INTRODUCTION

Significance of the Problem

"Practice is the best of all instructors" (Pliny, 42 B.C.E.). Teachers have known for thousands of years that students who practice the lessons of the classroom will become proficient much sooner than students who are simply instructed or lectured to. However, trying to get students to rehearse skills may be one of the most difficult tasks facing teachers of the 21st century. Today's students are accustomed to 30-second commercials, instant gratification and being able to change the activity as simply as changing a channel. It is in this arena that teachers must compete. In order to encourage the repetition of necessary skills, today's teachers must explore a variety of methods to maintain students' interest in this practice.

It is common knowledge amongst Language Arts teachers that to improve students' writing, we must find more and better ways to encourage our students to practice writing. Writing with fluency and proficiency is one of the most basic skills, yet one of the most important. With considerable prominence being placed on timed writing assessments on state tests such as the Tennessee Writing Assessment and the new essay portion of the Scholastic Aptitude Test, the need for writing practice has become even more evident. Traditional writing methodology indicates that students who produce more words on writing assignments will write more fluently on tests such as these. Additionally, such practice affords less writing anxiety toward daily life skills such as
writing letters to the utility company or producing job reports.

Statement of the Problem

This study will seek to investigate whether the use of word processing software, specifically Microsoft Word®, will affect the word counts students produce when writing in daily literary journals.

Definition of Terms

Fluency. For the purposes of this study, fluency is defined as “writing rapidly” as measured by the number of words produced in timed journal writings.

Limitations of the Study

This study involves only advanced students who have chosen the college preparatory path; word counts reflect advanced keyboarding and computer skills.

The sample size of 44 sophomores cannot purport to be indicative of all high school sophomores.

Null Hypothesis

Students who use Microsoft Word® to compose daily literary journals will produce no more words than students who write using traditional pen or pencil and paper will when compared at the .05 level of significance.
Benefits of Journal Writing in the English Classroom

Over the past fifteen years, the focus of any high school English classroom has been to involve students in the process of personally engaging the literature that is studied. One method of focusing student energy is to assign regular journal-writing activities that have been based on the day's readings. If students are involved in intertwining the language arts skills of reading, writing and then later discussing their findings, then they are more likely to make the personal connections which assist in student retention of these skills (Mink, 1988).

Three particular types of student writing which have been found effective in the classroom are dialogue, literary, and subject journals. The dialogue journal serves to promote colloquy between the teacher and the student. In this method of recording, students write hasty, unstructured notes about their learning processes and pose questions about their understanding to the teacher, who in turn responds. Throughout the school year, students and teachers engage in an informal, running dialogue about students' perceptions of the class. Literary journals are slightly more formal examinations of
selected passages from literature. The purpose of this type of journal is to foster student introspection on topics of literary significance. Teacher grading is held to a minimum and students are simply encouraged to record their ideas rapidly and freely.

The subject journal is more closely connected to explanatory observations on the whole of language arts learning. Students use this type of journal to record their responses to the nonfiction aspects of English, including background and historical information for period pieces or literary and rhetorical terminology or definitions. All three types of journals are useful for both teachers and students and serve as a means for recording student learning and understanding of the subject matter (Cobine, 1995).

**Journal Writing Cautions**

Although journals have proven an invaluable tool in the high school English classroom, teachers must take care to balance the need for students to reflect and write about literature with the desires of parents and students to maintain student privacy. Jenkinson notes that in order to be responsible, teachers should follow the guidelines suggested by the National Council of Teachers of English:

- Explain that journals are not diaries, but are concerned with the content of courses.
- Do something active and deliberate with what students write.
• Award points for journals, but do not grade them. Respond only to those entries that pertain specifically to the class (1994).

**Word Processing in Elementary and College Classrooms**

Once the teacher has ascertained that using journals would be a helpful tool to assess student learning, then the task at hand must be to encourage students to write daily and with fluency. One method might be to allow students to use word processing software to produce and store their work. A study of the related literature reveals that the majority of research in the area of the effects of word processing software on the volume of journal writing involves students at the elementary or college levels. Understandably, research in writing fluency at the elementary levels is hampered by the young student's inability to manipulate the keyboard using touch-typing skills (Shaw, 1994 and Hiebert, et. al. 1989). On the other hand, research in the college arena has focused primarily on qualitative studies which reveal how computer assisted instruction (CAI) affects the attitudes of the students toward writing (Kellogg and Mueller, 1989 and Collins, 1989). Such qualitative analyses lead to subjective questionnaires which simply ask whether students enjoyed writing their assignments on computers or with traditional paper and pencil (Blankenship, 1998).

**Online Distance Learning**

A more recent study by Mulligan and Geary (1999) indicates that college students who participated in an online distance learning course produced significantly more written words than students enrolled in the same class, but taught
using traditional pencil and paper methods. "...[O]nline pedagogy caused these students to work harder, write more and receive higher grades than comparable students in campus classes." Students who participated in online discussions, message logs, and formal papers produced ten to fifty times more words than traditional students. Mulligan and Geary hypothesize that being forced to produce all class discourse online forces students to speak to a variety of written audiences and to simulate more "real-life" concerns.

To determine whether students are actually becoming more proficient writers, Ehrman encourages teachers to look carefully at the expected outcomes when using technology. Using technology in classroom instruction will not be a panacea for the ailments inherent in poor writing. Instead, using technology, and in this case, specifically "worldware" such as word processing software, enables students to master skills that will be necessary in the "real" world (1995).

**Time on Task**

Most of these studies did not require that students operate under a strict time schedule to complete the task. Instead, teachers made assignments and students were required to write their papers on computer, taking several days to revise or add to the content. In a study by Kellogg and Mueller (1989), the researchers attempted to ascertain how much time students were spending planning, revising, and translating in both the pen and paper method as opposed to that of the computer. No effort was made to determine the time spent on creative response in the initial draft of the paper.
Advantages of Computer-Generated Composition

Researchers such as Holland believe that the most prevalent advantage of using computer software in the writing process will be the very fact that it makes these tasks of editing and revising much less intimidating than revision on pencil and paper drafts (1996). Likewise, the computer is more discreet in advising students as to possible grammar, spelling, or syntax errors than their peers or teacher might be (Hasselbring, et al. 1997). Additionally, word processing software can decrease students’ frustration levels because computer composition tends to cause students to take the “creative and grammatical risks” that traditional writing inhibits (Peck and Dorricott, 1994).

A few studies focused on the benefits of using computers to teach writing in the classroom. Simic (1994) notes that computers may best be used for the revising and editing step of the writing process and they have the added benefit of making it easy for students to print out multiple copies of their work to be used in peer-response groups. For this reason alone, students may be motivated to produce all their written work on computer. As was found in a study at the Yakima Tribal School (one of the few studies performed at a secondary school), after using Apple IIe and Apple Writer software, students may become reluctant to produce any handwritten work (Diessner, et al. 1985). Once students have mastered keyboarding skills, they tend to view word processing as easier and their word processed work as better than that produced with pencil and paper (Bracey 1993).
Yet another aspect of writing instruction using computers is its continued draw for students with learning disabilities. Most studies agree that using word processing software "frees" LD children from the difficulties they encounter with spelling and grammar. Knowing that the software will walk them through their papers allows them to work more creatively (Lewis, 1998 and Collins, 1989).

Fluency in Rhetoric

The only study that deals with word count in relation to student fluency in writing is one by Michael Russell and Walt Haney of Boston College (1997). Their study attempts to compare performance of 6th, 7th, and 8th graders on tests that were given with computers as opposed to those given using the more traditional paper and pencil methods. The research revealed that students who used computers to answer test questions not only produced more words and paragraphs than the pencil and paper group, they also scored significantly higher on the tests.
Chapter 3
METHODS AND PROCEDURES

Subjects

The subjects of this study are two classes of 10th grade Advanced English students in a large rural high school in East Tennessee who have independently chosen the college preparatory curriculum. Most are 15 or 16 years of age and can be identified as belonging to the middle to lower-middle class. All of the students have already completed a keyboarding course as either 8th or 9th graders. A minority of students are classified as gifted and talented as identified by the guidelines set forth by the Special Education Department of the State of Tennessee.

Timeline

Students wrote in literature response journals during the 1st grading period to familiarize them with journal writing and to establish the expectations for this class assignment. No word counts were taken during this preliminary acclimation period. One of the classes met in the keyboarding lab and wrote using Microsoft Word® while the other class wrote with pencil and paper. At the beginning of the second grading period, word counts were taken daily. Word counts were done outside the classroom and students were unaware that counts were being taken.

Experimental Factor

Students participating in this research project wrote for 15 minutes with either traditional pencil and paper or on the computer using Microsoft Word®. Topics for each day’s journal were assigned by the teacher to attempt to eliminate bias on the part of
the students toward topics they might have chosen themselves. Both classes received the same daily writing prompt. The topics were related to the day’s reading assignments and served as springboards for class discussion.

Students turned in their journals and computer disks at the end of each day to ensure that the word counts included only what could be written in the allotted 15 minute time period. Pencil and paper journal tallies were conducted by the teacher and were double-checked by 2 teacher assistants to ensure accurate, consistent word counts. Every word, or part of a word was recorded so as to mimic the counting style of Microsoft Word®. Word counts in journals generated using Microsoft Word® were done with the software’s “Tools >Word Count” option.

Statistical Analysis

Word calculations were taken for each student during the entire 6 weeks grading period. Counts were then totalled for each class and averaged. The means of the two class counts were then compared using a t-test to determine the equality of the means.
Chapter 4

RESULTS

The journal word counts of the control group which used pencil and paper were compared to the journal word counts of the treatment group using Microsoft Word® (See Chart in Appendix B). The Null Hypothesis stated that students who use computer software such as Microsoft Word® to compose daily literary journals will produce no more words than students who write using traditional pen or pencil and paper will when comparing at the .05 level of significance. However, after comparing the means, the 2-tailed significance was found to be significant at the .05 level and the null hypothesis was rejected (See Table 1).

TABLE 1

Comparison of Means of Journal Word Counts in Control and Treatment Groups

<table>
<thead>
<tr>
<th>Groups</th>
<th>N</th>
<th>Mean</th>
<th>Mean Difference</th>
<th>Std. Error Of Means</th>
<th>t ratio</th>
<th>Sig. 2-tailed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pencil and Paper</td>
<td>22</td>
<td>1334.3182</td>
<td>1085.2273</td>
<td>244.7255</td>
<td>4.434</td>
<td>.000*</td>
</tr>
<tr>
<td>Microsoft Word®</td>
<td>22</td>
<td>2419.5455</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Sig < .05
Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

Forty-four students from two English II Advanced classes wrote in journals for a period of two six weeks. One class of twenty-two students wrote using traditional paper and pencil and one class of twenty-two students wrote on the computer using Microsoft Word®. After becoming acclimated to the journaling process during the first six weeks, word counts were taken in the second six weeks period to see which group wrote a higher volume of words. Students in both groups wrote for 15 minutes on the same literary topic as assigned by the teacher. Word counts revealed that on average, students who wrote using word processing software produced significantly more words than those who used pencil and paper.

Conclusions

At the beginning of the 1999-2000 school year, students in both groups were led in a discussion of the value of writing in daily journals on a variety of literary topics. The two classes were in agreement that writing well in timed situations was a skill best learned before the advent of college entrance examinations such as the Scholastic Aptitude Test, the Tennessee Junior Writing Assessment, and the Advanced Placement English exams given as the culmination of the AP Junior and Senior Courses. Motivation to achieve a level of proficiency was high and students were enthusiastic about the class discussions that followed the writing topics.
In order to avoid skewing the results, students were not told that their word counts were being compared. One class was simply told they were to be “allowed” to go into the library to write their journals using the computers. Since classes are often taken to the library to use word processing software to write research papers and class reports, writing in the library was not viewed as a novelty.

Students who used Microsoft Word® to produce their daily journals did indeed produce more words than their pencil and paper peers. Since all students had completed a keyboarding course prior to their involvement in their 10th grade English classes, students were able to focus more on the aesthetic aspects of journal writing rather than viewing the keyboarding task as laborious. Instead of being forced to erase large sections as the need to edit arose, students were able to cut and paste their text with ease, adding to the actual number of words that could be written in the 15-minute time span.

Although both groups approached the task easily, students in the word processing group were less likely to need reminders to focus on the task at hand. The separation spacing of the library computers was a boon to students who are easily distracted and served to keep all students on task. After the experimental six weeks was completed, students who had been using the library’s computers to write journals were forced into journal writing with paper and pencil due to demands from other teachers to use the library’s computers. Although journal writing had become a routine, students complained that pencil and paper writing was much more difficult than composing on the
computer. They also requested that they be allowed to return to the computers once the demand for library computer time had diminished.

Recommendations

The 2-tailed test for significance for the equality of means was significant at the .05 level. For these reasons, and because students using the word-processing software were so enthusiastic about using computers to record their thoughts, it is recommended that further study in this area be completed. Word counts may lend themselves to more objective means of interpretation, but surveys of attitude may also be useful in determining whether students prefer to compose with pencil and paper or on the computer. While attitudinal studies are certainly subjective in nature, in the case of journal writing, attitude may sometimes be the deciding factor in how students will approach the learning and practice of writing skills. Certainly, teachers who find that student preferences lean toward computer-generated journals should make every attempt to allow students to compose with this method.
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WORLD WIDE WEB RESOURCES


Dear Dr. Forgety,

If events progress as scheduled, I will be graduating in May of 2000 with a master’s degree in Education Technology and Bible from Johnson Bible College in Knoxville, Tennessee. As part of that degree program, I am required to conduct an Action Research project and to write a research project analysis.

My project will test whether the volume of student journal writing changes when students use Microsoft Word as opposed to traditional pencil and paper. Be assured that the report on this project will not include personal student information such as statistics regarding race, gender, or socioeconomic status. The statistics generated and subsequent report will solely involve the number of words produced by students.

I would appreciate your approval on this project. If you have any questions or concerns regarding my study, please feel free to contact me at your convenience at the school or at home, 423-337-5894.

Sincerely,

Sherry B. Godsey
MCHS English teacher
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Signature: Sherry B. Godsey

Printed Name/Position/Title: Sherry B. Godsey

Organization/Address:
P.O. Box 227
Sweetwater, TN 37874

Telephone: 423-337-5894

Fax: 423-420-0334

E-mail Address: sgodsey@uosit.net

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