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Computer and Technology Assisted Language Arts Activities for Middle School Students

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COMPUTER AND TECHNOLOGY ASSISTED

LANGUAGE ARTS ACTIVITIES

FOR MIDDLE SCHOOL STUDENTS

by

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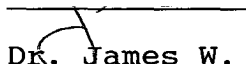for the degree of Master in Education
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I dedicate this volume to Michael and Kyle Mullan. Your loving support and trips to the beach helped me focus my energies on this formidable endeavor. I have returned!!

I would also like to thank Dr. Janet Bosnick for her valuable assistance and uncompromising high standards.

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Abstract

Educational research indicates that integrating
computers and other technologies into the curriculum,
enhances student interest in learning. However, many
teachers disregard these tools citing lack of time,
equipment, or experience. Based on this information,
the researcher designed a project which uses computers
and other technologies to stimulate middle school
language arts students' interest in learning. An
initial survey of 166 middle school students
determined that English grammar and usage is the least
enjoyed portion of the language arts curriculum. The
researcher then created ten computer and technology
assisted learning activities which reinforce grammar-
related content and skills. A seventh grade language
arts class field tested the activities. They also
completed several types of follow up instruments, and
participated in personal interviews, which helped the
researcher conclude that careful utilization of
computers and other technologies to deliver
unappealing portions of the curriculum may improve
students interest in those areas.

Computer and Technology Assisted Language Arts

Activities for Middle School Students

Chapter One

There is a large amount of computer software and
hardware in American schools today, and a lesser
though growing body of other technologies as well
(Becker, 1990). Classroom technology appears to
benefit students in many ways. As teachers begin to
use technology in delivering portions of the
curriculum, student motivation is shown to increase
(Mehan, Miller, Souviney, & Reil, 1984). Standardized
test scores may also improve (Donahoo, 1986; Bender,
1988). Additionally, technology may help teachers
adapt the curriculum to specific student learning
styles (Schwartz & Vockell, 1988). Classroom
technology also eases access to information
(Laboratory of Comparative Human Cognition, 1989),
easily lends itself to individualized instruction
(Donahoo, 1986; Trollip & Alissi, 1988), provides
faster and easier classroom management (Charp, 1984),
and prepares students for a work place which demands
technological literacy (Perelman, 1990).

Both students and teachers benefit from classroom technologies. However, teachers are often reluctant to use technology in their classrooms. The reasons for this reluctance are varied, although many cite "computer anxiety" and time restraints as playing major roles (Wresch, 1987; Bond 1988; Herrmann, 1988). Availability of resources may also pose a problem. Although ninety-seven percent of all United States schools have at least one microcomputer, the average middle school student must share a computer with 24 other students (U.S. Office of Technology Assessment, 1988). The reality of the electronic classroom is frustrating at times.

However, teachers can successfully integrate technology into their classrooms with minimal amounts of equipment and training (Pon, 1988; Brooks, 1990). Teachers who make an effort to integrate computers and other technology into their lessons despite the obstacles they encounter will find students show more interest in learning. Even the most unappealing curriculum areas are shown to engage the learner when computers and other technologies are used for delivery (Mehan, Miller, Souviney, & Reil, 1984; Eastman,

1989). This paper demonstrates how a classroom teacher, who may or may not have computer or technological experience, can take advantage of the essential motivating properties of computers and other technologies to enhance a given curriculum.

Specifically, this project focuses on middle school language arts classes in the Ponte Vedra-Palm Valley area of the St. Johns County School District. The researcher has created a wide variety of technology-based language arts classroom activities for the English grammar and usage portion of the curriculum, to motivate student's interest in these areas. A single word processing program and several of the most popular forms of classroom technology (UCF/DOE Instructional Technology Resource Center, 1991) are employed to deliver the activities. To initiate this project, the researcher administered a survey to a group of middle school language arts students, to determine which portion of the language arts curriculum is least motivating for students and therefore most likely to benefit by technology integration. This survey revealed that the curricular areas of grammar and usage elicited the least interest

from students. Stanford Achievement Test scores for

Ponte Vedra-Palm Valley middle school students were

also reviewed, to ascertain which language arts areas

appeared to need additional practice. The researcher

then examined other sources of information to develop

the computer and technology-based activities. These

sources included various publications which promote

the use or research of technology in education,

journals devoted to the language arts in education,

the curriculum frameworks for the State of Florida,

the performance standards for the St. Johns County

schools, the Model Technology School facilitator for

St. Johns County, and the media listings for the St.

Johns County schools.

After examining the survey results, the

literature and other resources consulted, the

researcher designed ten technology-based activities

which assist students in cooperative discovery of the

rules and usage of standard English. Every attempt

was made to keep the activities simple, so that they

might be used within the limits of available

technological resources. The researcher chose one

seventh grade class, from among the initial survey

participants, to field test the activities. The intervention strategy consisted of students' interaction with these materials over a period of nine weeks. A mini-survey was made after the completion of each of these activities to note whether students preferred the computer-based activities over more traditional methods. Subsequently, another survey was administered to the seventh grade students to determine whether they ranked their enjoyment of grammar and usage higher than in the initial survey. Finally, the researcher conducted five random personal interviews from among the test class to more thoroughly evaluate student impressions of the activities.

The results of this curriculum project will assist St. Johns County middle school language arts teachers in developing computer and technology integrated curriculums tailored to their needs. The grammar-related activities will also provide a foundation for those teachers who wish to enhance their students' motivation in this area.

Definition of Terms

Computer Anxiety - Maurer and Simonson (1984) describe
computer anxiety as "the fear and apprehension felt by
an individual when considering the implications of
utilizing computer technology, or when actually using
computer technology... the fear of interaction with
the computer, even though the computer possesses no
immediate or real threat" (p.2)

Cooperative Learning - "...refers to a set of
instructional methods in which students are encouraged
or required to work together on academic tasks...and
are rewarded on the performance of the group...In some
cooperative learning methods each group member is
given a unique subtask within the group, while in
others all students work together to accomplish a
common product or to study and master a common set of
material." (Slavin, 1987, p. 31-32)

Data Base - A group of related pieces of information.
Each item in a data base is related to each of the
others in some way. Computerized databases can be
used to organize information about virtually any area
of knowledge... A major advantage of using a computer

is its ability to look through a large data base for a specific piece of information in a very short amount of time (Presley & Freitas, 1989).

Electronic Classroom - "The electronic classroom emulates a [traditional] classroom where groups of students can participate online using standard low cost personal computing hardware at the students location." (Scigliano, Joslyn, & Levin, 1989, p. 64)

Hardware - The physical devices that comprise a computer system (Long, 1988).

Network - "A company specializing in the national or international networking of computer centers via phone lines." (Van Horn, 1991, p. 217)

Software - The programs used to direct the functions of a computer system (Long, 1988).

Word Processing - Using the computer to enter, store, manipulate, and print text (Long, 1988).

Chapter Two

Technology in the Classroom

Microcomputers and their educational applications
first appeared in American schools during the late
1970's. "The comparative low cost, portability, ease
of use, and the general-purpose nature of these
microcomputers excited a wide range of educators"
(Hofmeister, 1984, p.1-20). Although computers are
found in many classrooms today, the state of Florida
reports a ratio of only one computer for every sixteen
students (UCF/DOE Instructional Technology Resource
Center, 1991), and classroom computers often remain
unused or underused (Salomon, 1985; "Symposium:
Visions for," 1989; Ognibene & Skeele, 1990). Both
educators and researchers offer a variety of reasons
for such disregard of technology in the classroom.
These include the fact that teachers are frustrated by
the lack of readily available equipment and the poor
quality of software in their schools. Teachers also
report that they need additional computer training and
classroom preparation time if they are to develop
meaningful computer-based activities (Becker, 1988;
Bond, 1988; Herrmann, 1988; U.S. Office of Technology

Assessment, 1988).

Despite the difficulties they may encounter, many educators do use computers and other types of technology, such as video cassette recorders, camcorders, laser disc players, CD ROM players, LCD projection panels and the like, for instructional purposes. Most K - 12 school districts in the state of Florida report their teachers use some combination of the aforementioned technologies in their classrooms (UCF/DOE Instructional Technology Resource Center, 1991). The most typical K - 12 technology applications involve computers and their content related software programs.

Computer Assisted Instruction

Computer-assisted instruction has a variety of purposes and delivery methods, and may be classified into six general areas, including: Drill and Practice, Literacy and Programming, Tutorials, Simulations, Integrated Learning Systems, and Productivity Tools. As of 1985, most students used classroom and laboratory computers primarily for content related drill and practice programs or for computer literacy or programming (Becker, 1988).

Researchers disagree as to the effectiveness of drill and practice computer programs. Hallett (1984) and Gourgey (1984) conclude that drill and practice programs generally do not benefit the average or above average student any more than do traditional content delivery methods, and may in fact produce boredom, due to their repetitive nature. However, they find drill and practice to be significantly effective for remedial students and other special populations. Donahoo (1986) on the other hand, reports significant student gains in reading and math at every ability level, after four to seven months of exposure to drill and practice computer programs. This researcher contends that drill and practice applications are useful classroom tools when they are applied in limited amounts to achieve specific goals. For example, sentence combining programs, such as Reading and Writing Connection II, provide extra practice for students who have difficulty varying sentence structure.

Students at all grade levels often receive instruction in computer literacy or programming courses. This type of course generally includes the

history of computers and how to use and/or program them. According to Trollip & Alissi (1988), computer literacy can best be achieved through daily classroom use. Researchers contend that computer programming classes are ineffective for pre-college students (Kulik & Kulik, 1987), though they may be relevant for those students interested in computer programming careers. Though disagreements exist, many studies demonstrate that computer programming instruction also helps strengthen students problem solving skills (Linn & Dalbey, 1985; Palumbo & Reed, 1987-1988; Seidman, 1988).

Tutorial software programs provide direct instruction to the user in the content areas. The student interacts with the program by responding to questions and/or situations. Typically, a rule or concept is introduced and described, examples are presented, and similar problems are provided for student practice (Hofmeister, 1984). Similar to tutorials programs, though on a larger scale, Integrated Learning Systems such as WICAT or JOSTENS deliver entire courses to students. Known as courseware, these systems are usually networked

throughout a school or school district.

When educators wish to recreate a model or situation for students to interact with in a safe or logistically feasible fashion, they may choose a simulation software program. "Oregon Trail" for example, simulates a settler family's covered wagon journey west. Although simulation programs are most popular for science and social studies material, they may also be incorporated into other curriculum areas, such as language arts. Simulations programs provide interesting and provocative prewriting experiences (Sharple, 1985, p.50).

Besides its use for computer literacy, programming courses, drill, practice, tutorials, and simulations, the computer has been integrated into classrooms like the "...encyclopedia and the globe as a conventional instrument for teaching, used to enhance and assist in the accomplishment of traditional educational goals." (Lengel, 1986) The word-processor is an example of an effective classroom productivity tool. Students commonly use this tool for the writing process. When used in this manner the classroom computer encourages interaction between

students and may provide an unlimited source of information for access. Milone (1989) observes that, "The classroom-based computer, [as opposed to laboratory-based computers] has the greatest potential for becoming an integral part of the curriculum." (p. 35) Many other researchers find the computer to be a valuable classroom tool to help students better understand subject matter (Mehan, 1984, 1985; Brown, 1985; Lengel, 1986; Milone, 1989), since it relieves teachers from being "...the sole source of information, of help, of criticism, and of inspiration for their students." (Weir, 1989, p. 64)

Dilemmas

However, according to the U.S. Office of Technology Assessment (1988), less than one-third of all recent education school graduates consider themselves prepared to teach with computers. Only thirty percent of recent education school graduates have had as much as 10 hours of computer training. For most of that number this training is devoted to learning about computers themselves, rather than how to teach with them. Ognibene & Skeele (1990), state that fifty percent of all teachers have never used a

personal computer for any reason. Obviously, preservice and inservice training is an issue to be resolved before computers will be routinely used as classroom tools.

Another issue facing schools concerns the availability of equipment. Although most schools have computers, software, and other technologies in their possession, this equipment often remains in the computer lab or in the hands of a few teachers. So most classroom teachers may have little or no access to the computers in their schools (Salomon, 1990). Though a majority of Florida school districts report possession of computer hardware, compatible software, and peripheral devices (UCF/DOE Instructional Technology Resource Center, 1991), this equipment may not be available for all schools in each district. Furthermore, teachers may be reluctant to investigate the necessary channels to obtain the use of this equipment.

Motivation, Achievement, and Learning Styles

Educational researcher Henry Becker (1990) surveyed 1,400 elementary, middle, and high schools throughout the United States to determine how

computers are commonly used in schools. Results
indicate that less than twenty-five percent of
computer use is directed towards teaching or learning
academic subjects. Furthermore, in a previous survey
of 8,000 teachers and administrators Becker (1988)
revealed that most educators perceive computers to be
motivating for students but not useful to deliver the
traditional content areas for the average student.
However, many research studies conclude that computers
do aid achievement for students at all grade and
ability levels. When computers are integrated into
the academic portions of the curriculum positive
results are obtained. Significant gains are reported
on a variety of nationally normed achievement tests in
mathematics, reading, and language arts following the
implementation of a computer-based curriculum
(Gleason, 1981; Mehan 1985; Donahoo, 1986; Zollman,
1989). After reviewing 199 comparative studies of
computer-based instruction, Kulik and Kulik (1987)
also report that this instruction has positive effects
upon students. Students who use computers during the
learning process overall learn more material in less
time, enjoy their learning experiences more, and

maintain positive attitudes towards computers and technology.

"One of the computer's major strengths is its ability to present the same information in many different ways." (Schwartz & Vockell, 1988, p. 155) The computer's versatility enables classroom teachers to vary software programs in order to suit the learning needs of individual students. Researchers agree that students learn in different ways. Some students are able to adapt their learning style to a teacher's method of presentation, other students, especially those with learning disabilities, do not possess this flexibility. Computer-based activities are extremely beneficial for students unable to achieve by traditional classroom methods. For example, Lucie Zaugg (1991, p. 75), a teacher at Newberry Middle School in Alachua County, uses a desk-top publishing program to encourage her Learning Disabled and Emotionally Handicapped students to write individual and collaborative stories. She writes, "Handwriting for many [special education] students is laboriously produced and illegible. With CWPC [Children's Writing and Publishing Center, a desk-top

publishing program] students' energies can focus on expression of written words rather than production..."

English Grammar and the Language Arts

"The main language goals of pre-college English are fundamentally the process goals of improving speaking, listening, reading, and writing," (Suhor, 1988, p.50) though historically, the language arts curriculum focused primarily on grammar. In nineteenth century classrooms proper usage of the English language was heavily emphasized, as it indicated social position, and helped maintain the status quo amidst a rapidly changing ethnicity. For years handbook publishers promoted grammar-based curriculums which were gladly embraced by overworked teachers and professors. Though research during the 1920's concluded that these prescriptive grammar drills did not improve student writing, educators continued to isolate grammar from the writing process through the first half of the twentieth century (Connors, 1986, pp.27-58).

Though research continues to support the evidence that studying grammar and mechanics independent of the writing process does not improve student writing

(Elley, Barham, Lamb, & Wyllie, 1976), many teachers
continue the practice. A recent survey of forty
Middle School Language Arts teachers found over forty
percent of those teachers treat grammar as a separate
unit. Furthermore, half of the forty teachers
revealed they were not satisfied with their students
progress (Donovan, 1990). Elley, et. al. (1976),
discovered that students who were required to study
traditional or transformational grammar over a three
year period as part of the English curriculum found
their English classes more repetitive, and less
interesting and useful than students who learned
mechanics and usage during the writing process.
Experts in the field of English Education urge
teachers to integrate grammar instruction within the
daily classroom activities. They suggest teachers:
1) employ sentence combining techniques to build
students' writing skills (Hurst, 1987; Strong, 1983;
Suhor, 1988),
2) focus on grammar instruction only as it relates to
actual problems students have with speaking and
writing (Suhor, 1988),
3) address mechanics through direct instruction during

the composing process, (Suhor, 1988; Williams, 1989) and,

4) encourage students to study their own speech and writing so they may discover the rules of grammar. (De Haven, 1988)

Computers and Language Arts

Technology can assist language arts teachers in preparing innovative lessons and activities which inspire students to learn. Middle grades language arts students can benefit from classroom computer instruction in a number of ways. One of the most common computer uses in language arts classes is word processing. Word processing and revising programs yield significant results for students who use them to facilitate the writing process (Rodrigues, 1986; Bender, 1988; Milone, 1990), especially "...when combined closely with cognitive and instructional aids that draw students into reading their texts and developing revising strategies, such as self questioning" (Daiute, 1986, p. 158). Mehan (1985) describes student gains of up to three grade levels in language mechanics and two grade levels in language expression on the CTBS, a nationally normed language

arts test, after classroom computers were used in all phases of the writing process. Students worked together in pairs, called upon other classmates for assistance, and shared their writing with their fellow students, promoting cooperative learning. Using a word processor to teach the writing process also enhances student attitudes and motivation, which are found, in turn, to increase learning time and lead to improvements in student writing (Bender, 1984; Eastman, 1989).

Other types of software programs and classroom technology can be implemented successfully into the middle school language arts classroom. The Inter-Cultural Network created by Levin, Reil, Miyake, and Cohen (1987), uses a classroom computer and modem for students from the United States, Mexico, Japan, and Israel to exchange news items. Once the items are received, students save them on disc and compile them into school newsletters, using a word publishing program. Students are allowed to practice journalism techniques, and sharing news from around the world breaks through the isolation students may experience from spending day after day in the same classroom

routines.

Software which is not typically associated with language arts instruction may also provide an interesting alternative to conventional activities. For instance a database can serve as the stimulus for analytical thinking and writing. Blankenbaker (1987), distributed a survey on personal values to seventh and eighth grade students and their parents. The students entered the completed information into an Appleworks database, and the students were able to run reports to see which values were most important to each group. This data served as the basis for class analysis of the similarities and differences between classroom members. Afterwards students wrote comparison/contrast papers, based on their personal responses and those of their parents or friends.

According to Charles Suhor (1988)

Our primary mission in elementary and secondary schools is to produce students who speak, listen, read, and write not only capably but with a joy that will have a profound impact on their personal habits and will carry over to later phases of their lives. (p. 48)

However, the reality of the language arts classroom does not necessarily reflect Suhor's description. According to the United States Department of Education, National Center for Education Statistics (Digest of Educational Statistics, 1989), only 56.9 percent of all eighth graders look forward to English class. The average eighth grade score on a national standardized writing test, with a scale from 0 to 400, is 205 and only 34 percent of these same students performed minimally on the persuasive writing portion of the test.

Educators do have a means to provide an engaging language arts curriculum to students. Computers and related classroom technologies furnish a stimulating alternative to the traditional textbook approach used in most language arts classrooms. Any language arts teacher who has access to even one computer and some supported software can implement that computer into the daily classroom routine. It is important for teachers to remember though that computers and related technologies serve students best when they have been carefully integrated into the existing curriculum (Lancy, 1988; Brooks, 1990).

Chapter Three

This curriculum project provides a foundation for middle school language arts teachers, in the Ponte Vedra-Palm Valley area of the St. Johns County School District, who wish to integrate computers and other technologies into the language arts curriculum to improve motivation among their students. Initially, the researcher gathered data from the middle school language arts students using survey research techniques. Then student activities were developed, based upon the data. Subsequently, the activities were field tested on one seventh grade language arts class. The student participants were re-surveyed and interviewed for their impressions. Finally, all data collected was analyzed using measures of mean ranking and variability, to determine the significance of these measures.

Sample

The students participating in this project reside in the Ponte Vedra-Palm Valley area of St. Johns County, a predominantly white, middle to upper-middle class region of Northeast Florida. This sample was chosen for several reasons. The opening of a new

Ponte Vedra-Palm Valley middle school facility, for the Fall 1991 term, provides a good opportunity to introduce innovative methods for curriculum delivery. Furthermore, St. Johns County is actively promoting technology in the classroom. Webster Elementary, a St. Johns County elementary school is one of five Model Technology Schools in the state of Florida and offers a prototype for other schools in the county.

Participants in the initial survey group include 166 middle school language arts students taught by the six full-time middle school language arts teachers. All six full-time language arts teachers agreed to distribute the survey to one section of their language arts classes. The researcher reduced the sample to one seventh grade class for the field-test portion of the project. This seventh grade language arts teacher agreed to participate in the project and had access to the necessary equipment.

Initial Instrumentation

The initial data gathering instrument known as the Student Survey (see Appendix A), requires participants to rank the instructional areas of the middle school language arts curriculum as identified

by the Department of Education, State of Florida. The
Student Survey directs student participants to rank
each of the State of Florida Language Arts Performance
Standards on a one through ten scale, where one is
selected as the favorite concept or skill area and ten
is selected as the least favorite concept or skill
area. Students were also asked whether they would
like to use a computer for portions of their class
work. A section for comments was also provided on the
Student Survey.

Analysis

All six language arts teachers returned the
completed surveys for one section of their language
arts classes. In all, 166 students completed the
survey. The researcher obtained a mean ranking for
each performance standard on the survey (see Table 1,
Appendix B). The lowest ranked performance standard
(1) was designated as the most enjoyable language arts
curriculum area. The highest ranked performance
standard (10) was designated as the least enjoyed
language arts curriculum area. The researcher also
considered comments offered by the students. Overall,
students ranked grammar highest on the one through ten

scale. Therefore, grammar was chosen as the curriculum area upon which to base the computer activities.

The 1989/1990 Stanford Achievement Test (SAT) scores were also examined to ascertain which areas of the language arts curriculum might benefit most by the motivating effects of a technology infused curriculum. However, the middle school SAT scores for language arts areas were in the high average to above average range with little variability between subtest scores. Therefore SAT information did not factor into the language arts activity development in this project.

Activity Development

The researcher developed a group of ten computer or technology supported language arts activities based on the information derived from the surveys, the literature, and the field. The activities (see Chapter 4) are designed to enhance the teaching of English grammar and usage, in middle school language arts classes, by taking advantage of the computer's motivating properties. A minimum of equipment is necessary to support these activities. This equipment includes: an Apple IIe or IIgs microcomputer, a printer, an Appleworks--version 1.1 software program

or a similar student word processing program, a camcorder, a videotape recorder (VCR), and an overhead projector. Some previous experience with word processing is also very helpful for the students.

Field Test

The activities were field tested in one seventh grade classroom selected from among the initial participating language arts classes. These thirty students were chosen by the researcher because their teacher agreed to participate and had easy access to a computer and the other necessary equipment. The classroom teacher was supplied with an instructional package which included the Language Arts Activities computer disk and back-up disk, student data disks, and instruction guides for both teacher and students. Over one nine week quarter the activities were introduced one at a time and incorporated as "centers" into the daily classroom routine. As each new activity was introduced, the teacher reviewed the related concept and skill areas and the activity directions. Students were scheduled to work in pairs or groups of three for fifteen to thirty minute periods.

Results

A mini-survey (see Appendix A) was distributed to the students by their classroom teacher following the class completion of each activity to reveal whether students preferred using the computer and other technology as opposed to traditional methods. As the nine week quarter drew to a close and the ten activities were completed, students were once again surveyed with the initial data gathering instrument (Student Survey) to determine whether the use of technology for grammar related activities improved its ranking among the ten curriculum areas. The instrument was slightly revised (see Appendix A) to include the computer activities in the description of the grammar curriculum area. Five of the seventh grade students were also chosen at random to answer questions about the computer activities. The interview results are discussed in detail in Chapter Five.

Chapter Four

The following ten technology-based activities are designed to enhance the St. Johns County middle school language arts curriculum. Specifically, the activities encourage students to discover the conventions of English grammar within the context of their own writings and expressive language. Each activity may be modified to suit the grade or achievement levels of the students involved. Ideally these activities should be integrated into the daily classroom routine throughout the year.

Nine of the ten activities use an Apple IIe or Apple II gs computer and the Appleworks word processing program. One activity requires a camcorder and videocassette recorder for implementation. An overhead projector is used for review purposes during several of the activities.

The Computer Center

The Computer Center is an integral part of the curriculum. The seventh grade teacher had access to one computer, disk drive, printer, and Appleworks Program for 6 of the 9 weeks of field testing. During

the last three weeks of the test the teacher had access to a second computer, disk drive, printer, and Appleworks Program. This equipment was set up on a table in the far right front corner of the classroom. This area became known as the Computer Center.

Three of the ten language arts activities were entered on the "Activities Disk," by the researcher, using the AppleWorks word processor. These activities include: 1) Sentence Combining, 2) Sentence Editor, and 3) Paragraph Editor. Students interact with the material in each of these files to complete the activities.

The classroom teacher created six Student Data disks so students could save their work. Data disks were created for the following Activities: 1) Computer Pen Pals, 2) Sentence Combining, 3) Sentence Editor, 4) Paragraph Editor, 5) Story Writing, and 6) Class Newsletter using the directions below.

Creating Student Data Disks

1)   Insert the Startup Disk in the disk drive and turn on the computer and monitor.

2)   A message screen instructs the user to insert the Program Disk. Flip over the Startup Disk

and insert the Program side of the disk.

3)   A Main Menu appears.

4)   Choose number 5. Other. Then choose number
      5. Format.

5)   Follow the directions on the screen to format a
      Student Data Disk for each of the six
      activities mentioned above.

The following items were also placed in the
Computer Center: Two copies of the Activities disk, a
laminated Student Instruction Guide, Student
Directions for each activity, and the Student Data
disks. The classroom teacher also possessed a
Teacher's Instruction sheet for each activity.

Using the Word Processor

Nine of the ten language arts activities required
word processing on the computer. Most of the students
in the seventh grade test class had received some word
processing instruction, using the Appleworks word
processing program, during the fifth and sixth grades
at Ponte Vedra-Palm Valley Elementary School.
However, the classroom teacher did review the
following elements with the students during the field
test: Starting the Appleworks program, retrieving

files, formatting files, moving text, saving files, and printing files. These instructions, known as the Student Instruction Guide, were also displayed in the Computer Center on several laminated sheets.

Student Instruction Guide

Read and follow these instructions carefully!

To Prepare For Each Computer Activity:

**If the Appleworks program is already loaded skip
 numbers 1) and 2).

1)   Insert the Appleworks Startup disk in the disk
      drive, turn on the computer, monitor, and
      printer.

2)   When you see the screen prompt to insert the
      Program disk, open the disk drive, flip over the
      Startup disk, and insert the Program disk. Press
      <Return>.

3)   At the Main Menu press 1. Add Files to the
      Desktop. Enter the date at the bottom of the
      screen and press <Return>.

4)   At the Add Files Menu press 1. Get files from:
      The current disk: Drive 1.

5)   The screen prompts you to insert your data disk.
      At this time insert the Activities disk (** OR
      the Student Data disk **) Press <Return>.

6)   Choose the assigned activity and press <Return>.

7)   The screen prompts you to reinsert the Program

disk. (*NOT THE STARTUP DISK*) Press <Return>.

8) The activity is ready to begin.

To Format Your Paper:

Format your paper using the "Open Apple," "O" command.

1) Move the cursor to the top of the screen.

2) Press "Open Apple" and "O" at the same time.

3) A menu of options appears at the bottom of the screen.

4) Select "LM" to set the left margin. Press <Return>. Press 1 for a one inch margin. Continue this process for the right margin (RM), the top margin (TM), and the bottom margin (BM).

5) To center a title choose CN.

6) To choose line spacing choose SS for single spacing, DS double spacing

To Move Text:

1) To MOVE text place the cursor at the beginning of the text.

2) Press "Open Apple" and "M" at the same time.

3)   Highlight "within document."   Press <Return>.

4)   Highlight the text to be moved with the arrow

     keys. Press <Return>.

5)   Move cursor to the new location. Press <Return>.

6)   The text is moved to the new location.

To Conclude Each Computer Activity:

1)   Make sure the printer is on. Print your work by

     pressing "Open Apple" and "P" at the same time,

     and

     a)   Highlight "From Beginning." Press

          <Return>.

     b)   Press 1. Imagewriter. Press <Return>.

     c)   Select "2" copies at the screen prompt.

          Press <Return>.

     d)   Carefully remove your printed copies.

2)   Save your work on the activity's Student Data

     Disk.

     a)   Press "Open Apple" and "N" at the same

          time to Rename the file.

     b)   Press "Open Apple and "Y" at the same   time

          to remove the current file name.

c)   Type your last name or your partner's last name at the prompt near the bottom of the screen. Press <Return>.

d)   Press the "Open Apple" and "S" keys at the same time to save your file.

e)   Insert the Student Data disk for the activity on which you are working. Press <Return>. Your work is now saved on the Student Data disk.

3.   Prepare the activity for the next pair of students.

a)   Remove the Student Data disk from the disk drive and insert the AppleWorks Startup disk.

b)   Press the "Open Apple," "Control," and "Reset" keys at the SAME TIME.

c)   Flip over the Startup disk and insert the Program disk. Press <Return>.

Notes to the Teacher:

** Assemble the Student Directions for each activity
into a folder labeled "Student Directions Manual."
This manual will be kept in the Computer Center.

** Assemble the Teacher Instructions for each activity
into a folder labeled "Teacher's Instruction Manual."
Keep this at your desk for easy reference.

** It is imperative that the students reboot the
computer after each session. If a student does not
reboot after his or her session the next student may
end up working on someone else's file. Remind the
students to carefully follow the directions labeled
"To Conclude Each Computer Activity," found on the
laminated Student Instruction Guide.

** Make sure the protective tab is always kept in
place on the Activities disk. This will prevent
Activities Three, Four, and Five from accidentally
being altered or erased.

** Display the AppleWorks Reference Card in the
Computer Center when students begin working on
Activity Five: Paragraph Editor and thereafter.

** Be flexible and patient. As the students become
more familiar with the Appleworks program the
activities will run more quickly and smoothly.

** For each activity make a schedule which displays
the names of student partners and/or the order in
which the students will work. This helps to keep the
students organized.

Notes to the Student:

** Relax and enjoy the activities. If you are not very familiar with the word processor team up with a partner who is. The more you work on the computer the easier it will become.

** Make sure you follow all the directions for saving your work and concluding each activity.

Activity One: Computer Pen Pals

OBJECTIVE: The middle school language arts student will correspond with a student from another country, state, or city, using the AppleWorks word processing program, to enhance his or her letter writing skills and to become acquainted with another lifestyle.

TIME FRAME: This activity works best when you have arranged to begin correspondence early in the school year.   With one or two classroom computers, students will require two or three weeks to complete their letters.   This process moves more quickly when students have handwritten and edited their letters before completing a final draft letter on the computer.

Teacher Instructions:

** There are many ways to find a teacher who would
like to participate in this activity with you. One of
the best opportunities to find a class to correspond
with is to ask co-workers, friends, or relatives for
the name of a teacher they know who teaches in another
country, state, or city. You may then use that
teacher as a contact to help you make arrangements
with someone who teaches on your grade level and who
would be interested in participating in the project.
Remember, your computer pen pal class will need to use
the Appleworks word processing program and an Apple
IIe or Apple II gs computer also.**

Explain to your students that they will get to
know a student from another country, state, or city by
writing letters to him or her on the computer. Stress
that the letters should be friendly and informative.
Students should ask their computer pen pal questions
but must also provide interesting information about
themselves.

1)   Begin this activity by reviewing information on
      letter writing, including proper letter format.

2)   Give your students several class periods to
     develop and edit a first draft letter on paper.

3)   Set up a schedule for students to word process
     their edited letters. (Two or three students
     per class period)

4)   Some students will require more time to word
     process their letters than others. BE FLEXIBLE!

5)   Once all students have saved their letters to the
     Computer Pen Pals Student Data disk and the
     Backup Data disk, compose your own letter to the
     teacher and save it on the Computer Pen Pals
     Student Data disk.

6)   Package the disk well (Check with UPS or the
     post office for the best method of packaging the
     disk) and send it to your computer pen pal class.

7)   When you receive a disk in return, print and
     distribute the replies.

                 ****Things To Remember****

** Always make at least one backup disk. Accidents do
happen and letters can be lost.

** Be Patient. If you are receiving letters from
overseas you may have to wait a month or more.

** This is an ongoing class project. Once your students receive letters in return they should be prepared to write again.

Student Directions:

To begin word processing your letter follow the directions labeled "To Prepare For Each Computer Activity," found on the laminated Student Instruction Guide.

1)   At the AppleWorks Main Menu press 1. Add files to the desktop.

2)   Choose number 3. Make a new file for the Word Processor.

3)   Choose number 1. From scratch.

4)   Type a name for the file (your last name or your partner's last name only) at the prompt located at the bottom of the screen.

5)   A blank screen now appears with the file name at the upper left corner of the screen.

6)   Begin word processing your letter.

7)   When you have finished, follow the instructions labeled "To Conclude Each Computer Activity" found on the laminated Student Instruction Guide.

Activity Two: Class Discussion Critique

OBJECTIVE: Middle school language arts students will participate in videotaped small group discussions. Following the discussions the students will listen to their use of language, identify any usage problems, and improve upon their speaking habits.

TIME FRAME: Students will need approximately one class period to brainstorm for a discussion topic and to speak informally on the subject they have chosen before they are videotaped. Videotaping will require at least two class periods.

Teacher Instructions:

1)   Divide students into groups of five or six.

2)   Explain to the students that they will be video-
      taped, much like the guests on a "Phil Donahue"
      show, discussing a topic of their choice.

3)   At this point you may wish to show a short clip
      from an appropriate segment of a panel talk show
      in order to point out the format used. (Do not
      include audience input portions of the clip since
      your student audience will not be allowed to
      speak during the taping.

4)   Inform the groups they have approximately thirty
      minutes to choose an interesting topic which they
      would like to discuss and to informally talk on
      the topic before any taping begins.

5)   Make a list of each group's members and the
      topic they have chosen.

6)   Each group will be taped for approximately
      ten minutes.

7)   Arrange the discussants in a semi-circle facing
      the camera. The remainder of the class may view
      the group, off camera, as an audience.

8) Remind students to speak loudly and clearly, not to interrupt another speaker, and to stay on the chosen topic.

It is very important that the students in the audience do not speak or make noise of any kind.

9) The teacher may direct the discussion any way deemed necessary. Be sure that all students on the panel have several chances to speak.

10) The teacher may wish to review some common usage mistakes before the tapes are viewed.

11) Spend several class periods viewing the tapes with your students.

a) Students are to identify any usage problems and offer corrections for them.

****Things To Remember****

** Practice using the videocamera before you begin this activity.

** Draw out the quiet students. Direct a question towards them during the discussion if necessary.

** When viewing the tapes as a class, stop the tape as

student point out usage mistakes so that they may be discussed and corrected.

** REMIND STUDENTS that gentle, tactful criticism is required!!

Activity Three: Sentence Combining

OBJECTIVE: The middle school language arts student will develop his or her sentence structure by practicing various sentence combining techniques on the word processor.

TIME FRAME: The Sentence Combining activity requires students to spend at least two fifteen or twenty minute sessions on the computer.   All students will be able to complete the activity within two to three weeks.

Teacher Instructions:

1) Review the examples for each of the five sections on the chalkboard or overhead projector.

2) Group students by two's or three's for the activity and attempt to schedule at least two student pairs or groups per class period.

3) Most students will not complete this activity during their first session on the computer. Remind students to end each session by carefully following the directions in the Student Instruction Guide labeled "To Conclude Each Computer Activity."

4) Use the overhead projector to display examples of student sentences after all students have completed the activity.

5) The teacher may modify the Sentence Combining exercises by removing the protective tab on the Activities disk and entering additional exercises with the AppleWorks word processor.

Student Directions:

1) To begin the Sentence Combining exercises follow the directions labeled "To Prepare For Each Computer Activity," found on the laminated Student Instruction Guide.

2) Use the arrow keys to move through the exercises.

3) Enter your sentences next to the numbers marked with the asterisks (*).

4) When you have finished your session on the computer, follow the instructions labeled "To Conclude Each Computer Activity" found on the laminated Student Instruction Guide

The Sentence Combining Activity

Sentence Combining will help you write better sentences. Work through the Sentence Combining exercises. Study the examples carefully. WORK TOGETHER with your partner(s). Try whispering your sentences aloud as you compose them. You will find that you know more about sentence structure than you thought.

****

PART I. Combine the kernel sentences in each group to create one sentence.

EXAMPLE:

My surfboard is yellow.

My surfboard glides smoothly across the water.

My surfboard glides swiftly across the water.

My surfboard is brand new.

The above sentences are combined to become:

My brand new, yellow surfboard glides swiftly and smoothly across the water.

1.   Her friend is pretty.

      Her friend is very popular.

      Her friend's name is Jennifer.

      Her friend lives next door.

Type one sentence below which combines the sentences
above.

*1.

2.   This song is new.

      This song is excellent.

      This song was written by my favorite group.

      This song was performed by my favorite group.

Type one sentence below which combines the sentences
above.

*2.

3.   That dress looks great.

      That dress is a mini.

      That dress is too expensive for me.

That dress is too small for me.

Type one sentence below which combines the sentences above.

*3.

****

PART II. Now let's add on to the sentences below. Follow the example.

EXAMPLE:

You are given SENTENCE A:

    A. They ran.

Add on to SENTENCE A to make SENTENCE B:

    B. They ran QUICKLY.

Then add on to SENTENCE B to make SENTENCE C:

    C. They ran quickly OVER THE HOT SAND.

Finally, add on to SENTENCE C to complete the sentence (SENTENCE D):

    D. They ran quickly over the hot sand AND PLUNGED INTO THE COOL, CLEAR WATER.

1. A. She laughed.

*B.

*C.

*D.

2.   A.   Jeffrey sauntered.

*B.

*C.

*D.

3.   A.   She gazes.

*B.

*C.

*D.

****

PART III. Reorder the sentences below like the

example.

EXAMPLE:

   A.   Late yesterday evening they ordered pizza.

                         BECOMES

   B.   They ordered pizza late yesterday evening.

1.   A.   Early last summer my family traveled to

          Europe on a majestic old ocean liner.

        *B.

2.   A.   Shortly after dinner her carried several
          large boxes out to the garage.
     *B.

3.   A.   Natalie listened intently as her grandmother
          spoke of days long past.
     *B.

PART IV.   Combine the following sentences by joining
them with conjunctions (and, or, for, but, yet,
though).
EXAMPLE:
     A.   He left the house early today.
     B.   Ralph missed the uptown bus.
                    BECOME
Ralph missed the uptown bus though he left the house
early today.
                     OR
He left the house early today but missed the uptown
bus.
1.   A.   We can play another set of tennis.

          B. We can go to the pool to swim.

*1.

2.   A. Our math test was extremely difficult.

      B. I think I scored 100%.

*2.

3.   A. We expected twenty guests.

      B. Only twelve people came to our party.

*3.

4.   A. I play basketball on the county recreation
          league.

      B. I run track for my high school team.

*4.

PART V. Combine the following sentences like the
example below.

EXAMPLE:

          A. Karen lent me her roller blades.

          B. Karen is my next door neighbor.

                         BECOMES

Karen, my next door neighbor, lent me her roller

blades.

1.   A.   Mr. Edwards offered to give me a make up

          test.

     B.   Mr. Edwards is my science teacher.

*1.

2.   A.   My story won second place in the creative

          writing contest.

     B.   My story is about my little brother.

*2.

3.   A.   I earn money washing cars.

     B.   I plan to save my money so I can buy my

          own car next year.

*3.

STOP HERE

Follow the instructions, "To Conclude Each

Computer Activity," found on the laminated Student

Instruction Guide.

Activity Four: Sentence Editor

OBJECTIVE: The middle school language arts student
will use the word processor to edit sentences, written
by other students, for sentence structure, word usage,
spelling, capitalization, and punctuation.

TIME FRAME: Most students will require 2 twenty -
thirty minute sessions to complete these exercises.
All students will be able to complete the activity
within two to three weeks.

Teacher's Instructions:

1) Make sure your students understand how to delete and insert with the word processor by carefully reviewing the example on the chalkboard or overhead projector.

2) Group students by two's or three's for the activity and attempt to schedule at least two student pairs or groups per class period.

3) Most students will not complete this activity during their first session on the computer. Remind students to end each session by carefully following the directions in the Student Instruction Guide "To Conclude Each Computer Activity.

4) Use the overhead projector to display examples of the edited student sentences after all students have completed the activity.

5) The teacher may modify the Sentence Editor activity by removing the protective tab on the Activities disk and entering additional sentences with the AppleWorks word processor.

Student Directions:

1) To begin the Sentence Editor exercises follow the directions labeled "To Prepare For Each Computer Activity," found on the laminated Student Instruction Guide.

2) Use the arrow keys to move through the sentences.

3) Carefully follow the directions for the example. Work on the other six sentences in much the same way.

4) Use the insert and delete keys to make your changes.

5) When you have finished your session on the computer, follow the instructions labeled "To Conclude Each Computer Activity" found on the laminated Student Instruction Guide

The Sentence Editor Activity

The following sentences were written by seventh grade students during their first drafts of a recent writing assignment. Your job is to carefully study each sentence for errors in sentence structure (use what you have learned in the Sentence Combining exercises to help you), word usage, spelling, capitalization, and punctuation. Your second task is to expand upon the sentences using descriptive words. Most of the sentences will have several problems that need correcting. Some sentences may be run-ons, others may need rearranging. Watch for spelling and punctuation errors. DON'T FORGET TO ADD SOME DESCRIPTIVE WORDS TO EACH SENTENCE.

EXAMPLE: Follow these directions to help you edit sentence A.

** The student did not begin his sentence with a capital letter. To correct this mistake, move the cursor under the "h" in "then," press the delete key, and insert the "T."

** This sentence would read better if we deleted "and it" and inserted the word "which" instead. Use the delete key to remove the words "and it." Then, place the cursor under the "w" in "was" and enter the word "which." Also, correct the spelling mistake in the

word "stasion."

** OR, you could delete the second part of the sentence, "and it was really falling apart," and insert the adjective "dilapidated" before "train" to describe the train station.

SENTENCE A: then we went to this old train stasion and it was really falling apart.

**** Now continue on your own ****

B.   he's pretty cool because sometimes he lets us have free time and other times he makes us read out of our book and do exercises but all together he's a really nice guy.

C.   He has a son and he's married and has brown hair.

D.   Picture this your riding through the woods on a horse, Suddenly she/he stoped dead perked it's ears up and looked around there is nothing here you tell yourself.

E.   I was drenched with water all around in the middle of daytona beach of my blow-up paddle boat.

F.   He dresses not matched but in his own way
     stylish.

(NOTE: The student writes about seeing a group of
deer in the woods in the sentence below.)

G.   We went back the same way we came and they were
     gone then I finally told my Grandpa and that was
     that I went back the next day there was nothing
     there.

                        STOP HERE

Follow the instructions, "To Conclude Each Computer
Activity," found on the laminated Student Instruction
Guide.

Activity Five: Paragraph Editor

OBJECTIVE: The middle school language arts student will use the word processor to edit two student paragraphs. They will identify the topic sentence, the supporting sentences, and the concluding sentence. They will also edit sentence structure, word usage, spelling, capitalization, and punctuation.

TIME FRAME: Most students will require 2 thirty minute sessions to complete these exercises. All students will be able to complete the activity within three to four weeks.

Teacher's Instructions:

1) Review the components of a paragraph before you begin this activity.

2) Copy the paragraph in Part A on a transparency. Carefully review the instructions for Part A with the students.

3) The teacher may choose to print a copy of the directions for Part A so the students can follow the directions from the copy instead of from the monitor.

4) Group students by two's or three's for the activity and attempt to schedule at least two student pairs or groups per class period.

5) The students will not complete this activity during their first session on the computer. Remind students to end each session by carefully following the directions in the Student Instruction Guide labeled "To Conclude Each Computer Activity.

6) Use the overhead projector to display examples of the edited paragraphs after all students have completed the activity.

7)   The teacher may modify the Paragraph Editor
      activity by removing the protective tab on the
      Activities disk and entering additional student
      paragraphs with the AppleWorks word processor.

Student Directions:

1) To begin the Paragraph Editor exercises follow
the directions labeled "To Prepare For Each
Computer Activity," found on the laminated
Student Instruction Guide.

2) Use the arrow keys to move through the activity.

3) Carefully follow the directions for Part A which
are listed below. You will work on Part B in
much the same way.

4) When you have finished your session on the
computer, follow the instructions labeled "To
Conclude Each Computer Activity" found on the
laminated Student Instruction Guide

DIRECTIONS FOR PART A:

a) The first sentence in this paragraph is the TOPIC
sentence. The topic sentence expresses the MAIN IDEA
of the paragraph--that Mr. Edwards is his favorite
teacher and a very nice person.

b) Place the cursor under the letter "H" in the word
"He," which follows the Topic sentence, then press

<Return> TWO times. Now this sentence is separated
from the paragraph and you can edit it more easily.

c) Look for several SUPPORTING sentences in the
remainder of the paragraph. Supporting sentences
EXPLAIN THE MAIN IDEA more thoroughly.

d) The first supporting sentence is "He makes us open
those big ugly english books, and work from them all
day."

e) Place the cursor under the "B" in the word "But"
and press <Return> TWO times. Now the first
supporting sentence is separated from the rest of the
paragraph so it may be edited.

f) Continue to separate the remaining supporting
sentences from the paragraph and edit them for
sentence structure, spelling, capitalization,
punctuation, and usage. If you find a sentence that
does not express the main idea of the paragraph, you
may delete it.

g) Also separate and edit the CONCLUDING sentence. The concluding sentence is a final idea which closes the paragraph.

h) When you have finished editing the paragraph, rejoin the sentences by doing the following:

--Place the cursor under the first letter, of the first word, of the separated sentence

--Press the Delete key THREE times

--This deletes the space in between the sentences and restores the paragraph format.

The Paragraph Editor Activity

The following activity is designed to give you practice editing paragraphs. ** REMEMBER, a good paragraph contains a TOPIC sentence, several SUPPORTING sentences, and a TRANSITIONAL or CONCLUDING sentence.

PART A:

The paragraph below was written by a seventh grade student. This is his first draft. Read through the paragraph. Then carefully follow each set of directions found in the Student Directions manual to help you edit the paragraph.

Mr. Edwards who is my favorite teacher, is one of the nicest people I know. He makes us open those big ugly english books, and work from them all day. But doing this does have it's advantages. Like when he lets us tell our boring stories, and when he lets us have that long strip of free time. And of course the grab bag which is probably everyone's all time favorite in Mr. Edward's fantastic english class. And you can be for sure when I grow up I will never forget all of those very interesting lessons that he taught me.

PART B:

Edit one more paragraph following the same format as above. If you can't remember how to separate the sentences, refer to the DIRECTIONS FOR PART A found in the Student Directions Manual.

**** REMEMBER ****

The main idea is not necessarily contained in the first sentence of the paragraph. Read the paragraph carefully. Separate the Topic, supporting, and concluding sentence(s). Then edit each sentence and return the sentences back to the paragraph format.

****

The waves were crashing and tumbleing 8 to 12 feet tall. Sculling out to the waves I was being pushed back by every white wash which was very forceful. I was very tense and freeked. Very alert I saw an 11 foot wave comeing upon me. I started paddleing and dropped into the wave. I did some lips and backslides on the wave. Right before the wave closed out I caught a 2 foot air. I busted and skulled all the way back in. I had the best time surfing last weekend.
****

STOP HERE

Follow the instructions, "To Conclude Each Computer Activity," found on the laminated Student Instruction Guide.

Activity Six: Invisible Writing

OBJECTIVE: The middle school language arts student will use the word processor, with the monitor turned off, as a prewriting activity. During this writing process the student will concentrate on his or her thoughts rather than grammatical conventions.

TIME FRAME: Each student should spend at least ten minutes on this activity. All students will be able to complete the activity within two weeks.

Teacher Instructions:

1)   Explain to your students that they will be using the word processor with the monitor turned off so they can concentrate on their ideas.

2)   Tell your students they have approximately ten minutes to write on a topic of their choice which expresses an opinion, emotion, idea, problem, or personal experience. You may wish to assign a particular purpose for this assignment, for instance an opinion paper.

3)   Remind students to carefully follow the instructions in the Student Directions Manual.

Student Directions:

1)   To begin the Invisible Writing activity follow
the directions labeled "To Prepare For Each
Computer Activity," found on the laminated
Student Instruction Guide. You will save your
work on the "Story Writing" Student Data disk.

2)   At the AppleWorks Main Menu press 1. Add files
to the desktop.

3)   Choose number 3. Make a new file for the Word
Processor.

4)   Choose number 1. From scratch.

5)   Type a name for the file (your last name or your
partner's last name only) at the prompt located
at the bottom of the screen.

6)   A blank screen now appears with the file name at
the upper left corner of the screen.

7)   You may begin word processing

8)   Turn the monitor OFF.

9)   Think about a topic you would like to write
about.

10)   Now write. Let your ideas flow. Don't worry
about sentence structure or organization,

punctuation, or spelling. Just write!

11) When you have finished this activity follow the
directions labeled "To Conclude Each Computer
Activity" found on the laminated Student
Instruction Guide.

Activity Seven: Word Process A First Draft

OBJECTIVE: The middle school language arts student will organize a prewriting activity (Invisible Writing) into a short written paper which expresses an opinion, emotion, idea, problem, or personal experience.

TIME FRAME: Most students will require at least 2 twenty minute sessions to complete a first draft.

Teacher Instructions:

1)   Explain to your students that they will develop their ideas from the Invisible Writing activity into a short paper of approximately three or four paragraphs.

2)   Your students may need to move some of the thoughts they have written in the Invisible Writing activity for their first draft. Review the AppleWorks MOVE command with the students and display the AppleWorks reference card at the Computer Center.

     a)   To MOVE text place the cursor at the beginning of the text.

     b)   Press "Open Apple" and "M" at the same time.

     c)   Highlight "within document." Press <Return>.

     d)   Highlight the text to be moved with the arrow keys. Press <Return>.

     e)   Move cursor to the new location. Press <Return>.

     f)   The text is moved to the new location.

3)   If time constraints demand students work in pairs, have students select ONE of their

Invisible Writing activities to develop into a paper.

3) Remind the students to carefully follow the directions for saving their files!

Student Directions:

1) Retrieve your Invisible Writing file from the "Story Writing" Student Data disk by following the instructions labeled "To Begin Each Computer Activity," in the laminated Student Instruction Guide.

2) Organize your ideas into paragraphs first. Group your sentences into paragraphs by using the MOVE command.

3) Then further develop your paragraphs by adding additional sentences as needed.

4) When you feel satisfied with your first draft, follow the directions "To Conclude Each Computer Activity" found on the laminated Student Instruction Guide.

Activity Eight: Peer Editing

OBJECTIVE: The middle school language arts student will use the word processor to edit a student partner's writing assignment for proper paragraph development, sentence structure, spelling, punctuation and capitalization.

TIME FRAME: Students will require at least one twenty minute session to complete this activity.

Teacher Instructions:

1)   Review proper paragraph development with
     students.

2)   Assign each student (or student pair) a partner
     (or partners).

3)   The partners will load each others file into the
     word processor and use the following editing
     method:

** Students will insert advice enclosed in brackets
[   ] following errors observed in paragraph
development or sentence structure.

** Students will place an asterisk * * on either side
of a spelling, punctuation, or capitalization error.

Student Directions:

1) Follow the instructions in the Student
    Instruction Guide labeled "To Begin Each Computer
    Activity."

2) Load your assigned editing partner's file.

3) Read through this first draft. Look for any
    errors in paragraph development or sentence
    structure. If you think you have found a
    problem, insert a comment within brackets [ ],
    after the problem.

For example:

        I was not very pleased that someone who
didn't study for the test was able to get a good grade
by cheating it's not fair for the rest of the students
who do study. [You should put a period after cheating
and start a new sentence] I though about telling our
teacher...

4) If you think you have found a spelling,
    punctuation, or capitalization error put an
    asterisk * * on both sides of the error.

For example:

   I *thauht* about telling our teacher but I didn't
want to be a tattletale*;* I suppose I could have
written him a note about it.

5)   When you have finished editing the paper follow
     the instructions in the Student Instruction Guide
     labeled "To Conclude Each Computer Activity."

Activity Nine: The Final Draft

OBJECTIVE: The middle school language arts student will use the word processor to revise a short written paper, which expresses an opinion, emotion, idea, problem, or personal experience.

TIME FRAME: Students will require at least two twenty minute sessions to complete this activity.

Teacher Instructions:

1) Explain to your students that they are to use the remarks inserted into their papers, during the Peer Editing activity, to help them with their revisions.

2) Remind students to use their own judgment when they do not agree with certain comments generated by the peer editor.

3) Review the format options for margins and spacing with the students and leave the AppleWorks reference card in the Computer Center.

Student Directions:

1)   Follow the instructions in the Student
     Instruction Guide labeled "To Begin Each
     Computer Activity."

2)   Load your file from the "Story Writing"
     Student Data disk.

3)   Read the remarks your editing partner has
     inserted into your paper. Make note of any
     spelling, capitalization, or punctuation
     errors noted.

4)   Now revise your paper taking into consideration
     the observations made by your editing partner.

5)   Use your own judgment. If you do not agree with
     a revision suggested by your editing partner,
     don't make the change.

6)   Make your own final revisions.

7)   Format your paper using the "Open Apple," "O"
     command.

     a)   Move the cursor to the top of the screen.

     b)   Press "Open Apple" and "O" at the same time.

     c)   A menu of options appears at the bottom of
          the screen.

d)   Select "LM" to set the left margin. Press
     <Return>. Press 1 for a one inch margin.
     Continue this process for the right margin
     (RM), the top margin (TM), and the bottom
     margin (BM).

e)   To center a title choose CN.

f)   To choose line spacing choose SS for single
     spacing, DS double spacing

8)   When you have finished revising your paper follow
     the instructions in the Student Instruction Guide
     labeled "To Conclude Each Computer Activity."

Activity Ten: The Class Newsletter

OBJECTIVE: Each middle school language arts student will use the word processor to write or edit at least one news item, pertaining to a school related issue or event, which will be compiled into a classroom newsletter.   The students will send copies of the newsletter to their overseas Computer Pen Pals and distribute copies among themselves.

TIME FRAME: Students will require at least 2 twenty minute sessions to write and edit each news item. Students should spend three or four weeks accumulating news items before students compile the items into newsletter form.

Teacher Instructions:

Before you begin this activity, review the components of an effective news article with your students.

1) Assign student partners for this activity. One student may write the item and another edit the item, or both students can share these duties.

2) Create a News Sign Up Sheet so students do not write duplicate articles. Have each student pair sign up for an article they wish to write concerning a school related issue or event.

3) All the students will share one file named "Newsletter." Each item must be saved in this file. To avoid confusion, the teacher should create this file by following the directions below.

   a) Insert the Appleworks Startup disk in the disk drive, turn on the computer, monitor, and printer.

   b) When you see the screen prompt to insert the Program disk, open the disk drive, flip over the Startup disk, and insert

the Program disk. Press <Return>.

c) At the Main Menu press 1. Add Files to the Desktop. Enter the date at the bottom of the screen and press <Return>.

d) At the Add Files Menu choose number 3. Make a new file for the Word Processor.

e) Choose number 1. From scratch.

f) Enter the file name "Newsletter" at the prompt located near the bottom of the screen.

g) A blank screen now appears with the file name Newsletter at the upper left corner of the screen.

4) When each student has written or edited at least one news item, assign several student volunteers to format the newsletter

a) Adjust the margins and spacing

b) Check that each item has a headline and a byline and print out several final copies.

Student Directions:

1) Follow the instructions in the Student
    Instruction Guide labeled "To Begin Each
    Computer Activity."

2) All students will write and save their news
    items in the "Newsletter" file.

3) Write a news item pertaining to the school
    related issue or event you have signed up for.

4) Keep in mind: Who, What, When, Where, and Why!

5) After writing the news item, edit it carefully
    for idea development, sentence structure,
    spelling, capitalization, and punctuation.

6) Make sure to check your facts.

7) When you have finished your session on the
    computer follow the instructions in the
    Student Instruction Guide labeled "To Conclude
    Each Computer Activity." *** SAVE YOUR ITEM IN
    THE FILE NAMED "NEWSLETTER." ***

Chapter Five

Initial Survey Results

Part One of the Student Survey (see Appendix A)
instructed students to rank each of the State of
Florida Language Arts Performance Standards on a one
through ten scale, where one is selected for the skill
or content area most enjoyed by the student, and ten
is selected for the skill or content area least
enjoyed by the student. Mean rankings for each skill
or content area are displayed in Table 1 (see Appendix
B). Five of the six surveyed classes ranked "studying
grammar" highest among the ten skill or content areas.
The researcher then concluded that grammar was the
language art's skill or content area least enjoyed by
the Ponte Vedra-Palm Valley area middle school
students. The test curriculum was developed upon this
data.

Part Two of the Student Survey directed students
to check one of two statements concerning their
interest in using computers or technology for portions
of the language arts curriculum. This information
would ascertain to what extent a computer and

technology integrated curriculum would interest middle school language arts students. Table 2 (see Appendix B) demonstrates that all the middle school students involved in the survey showed an interest in using computers or technology for their language arts class work. The results from Part Two of the Student Survey reinforce the evidence for incorporating computers and other technologies into the language arts curriculum.

Field Test Results

The computer and technology integrated language arts curriculum was field tested over a period of nine weeks. The field test results revealed enhanced student attitudes toward the study of English grammar and usage. The results of the field test are based upon three post treatment instruments, administered by the researcher to the seventh grade test-class. The students completed the first of these instruments, known as the Mini-survey (see Appendix A), after finishing each of the ten activities. The Mini-survey instructed students to mark one of three statements which pertained to their preference toward using a computer or technology for the activity. Table 3 (see Appendix B) displays the students' preferences for

each of the ten activities. Additionally, five
students were chosen at random to answer questions
about the activities (see Appendix A), posed by the
researcher, following the completion of the field
test. Individual results for each of the ten
activities are discussed below in further detail.
Included in each discussion are the results of the
mini-survey and the personal interviews as they
pertain to the activity.

<u>Computer Pen Pals</u>

The initial activity, Computer Pen Pals, received
the second highest percentage of positive responses
toward incorporating computers or other technologies
into the lesson. The Computer Pen Pal Mini-Survey
revealed that sixty-eight percent of the test class
preferred using the computer as opposed to pen and
paper for this activity. Computer Pen Pals provided
an opportunity for students to correspond with long
distance pen pals using the computer. The students
composed and saved their letters on a single disk
which was mailed to a participating class. Several of
the students who participated in the personal
interviews mentioned Computer Pen Pals as one of their

favorite activities. However, the students also stated that had they been able to spend further time corresponding with their computer pen pals they would have enjoyed this activity even more. Due to time constraints imposed by this project, students had only nine weeks in which to correspond with their computer pen pals. The researcher suggests that teachers wishing to implement this activity into their curriculum begin correspondence early in the school year. This is especially true for those classes which correspond with students overseas.

Class Discussion Critiques

Class Discussion Critiques required the teacher to videotape small groups of students as they discussed a chosen topic. As the tapes were replayed, class members offered positive comments and helpful criticisms on each other's use of standard English. This activity also received a high percentage of positive responses toward incorporating technology into the lesson. The Class Discussion Critique Mini-survey results showed that sixty-seven percent of the students responded favorably toward using the video camera and video cassette recorder to record student

discussions. The classroom teacher reported that students carefully chose their words of criticism so as not to offend a classmate, which is essential for the success of this activity.

Sentence Combining

Using the word processor, the researcher developed an interactive module where students could practice combining sentences to improve their own sentence structure. According to the Sentence Combining Mini-survey, forty-six percent of the test class enjoyed using the computer for this activity. However, forty-two percent of the test class responding to the Mini-Survey marked "no preference," indicating they would enjoy using a textbook or worksheet for the sentence combining activity as much as the computer. Some student interview participants stated that the Sentence Combining exercises were "too long." All interview participants agreed that trying to remember how to use the word processor and trying to carefully complete the exercises in a limited time period detracted from this computer activity's appeal. The researcher recommends that teachers review the word processor with their students prior to

introducing the computer activities. Although a majority of the seventh grade students received word processing instruction in the fifth and sixth grades, word processing skills are easily forgotten if not reviewed on a regular basis.

<u>Sentence Editor</u>

The Sentence Editor is a word processing file, containing seven student sentences which require corrections in sentence structure, word usage, spelling, capitalization, and punctuation. This computer activity was least enjoyed by the test-class. According to the Sentence Editor Mini-Survey, only thirty-eight percent of the class responded favorably towards using the computer for this activity. Fifty-three percent of the test-class said they did not prefer to use the computer over more traditional methods. Once again, participants in the student interviews requested more time to complete the activity, and more help with the word processing instructions. The researcher suggests the classroom teacher limit the number of sentences students edit to three per session. This will provide students with more time to complete the activity.

Paragraph Editor

The Paragraph Editor is a word processing file which contains two student paragraphs. Students must identify topic, supporting, and concluding sentences and edit those sentences for sentence structure, word usage, spelling, capitalization, and punctuation. Mini-Survey results indicate that forty percent of the test class enjoyed using the computer for the Paragraph Editor activity. Fifty-two percent of the test class stated they did not prefer to use the computer for this activity over more traditional methods. Several of the student interview participants preferred editing written work on the word-processor because "it was easier to type and move things around." However, another student explained that she would have preferred doing the activity on paper because "writing is faster than typing..." for her. She thought that more practice with the word processor might change her opinion in the future. Again, the researcher supports word processing practice prior to implementing the activities.

Invisible Writing

The Invisible Writing activity (Rodrigues &

Rodrigues, 1986) proved very popular with the test
class. Invisible Writing is a pre-writing activity
where students write on a topic of their choice, using
the word processor, with the monitor turned off. The
students are encouraged to concentrate on their ideas
as opposed to grammatical conventions. This activity
received a very favorable response. Sixty-three
percent of the test class enjoyed using the computer
during this pre-writing experience. Some students
interviewed found the activity "fun" and
"different." One student said her "...typing got
mixed up..." so she would have preferred the monitor
be turned on for the activity. All students
interviewed felt they had a sufficient amount of time
to complete the Invisible Writing activity.

Word Processing A First Draft

The "First Draft" activity gave students an
opportunity to retrieve their Invisible Writing file
on the word processor and shape it into a written
composition. Students in the test class liked using
the computer for this activity the best. Sixty-nine
percent of the students responded favorably towards
Word Processing A First Draft. Interview responses

included "I liked typing my story [rather than handwriting it]...," "It's easier to erase your mistakes on the computer...," "I like to save my work [on the disk] in case I lose it." The researcher speculates that at this point in the project, students in the test class were beginning to feel more comfortable word processing. No students mentioned word processing problems during this activity.

Peer Editing

Peer Editing offered students a chance to edit each other's first draft compositions using the word processor. Students used two types of symbols as they reviewed a partner's text, one to denote errors and another to highlight suggestions. All of the interviewed students indicated that they liked this activity. Forty-eight percent of the Peer Editing Mini-Survey respondents indicated the same. However, another forty-eight percent of the respondents had no preference toward using the computer for this activity. When asked what she enjoyed about the Peer Editing activity, one interviewee replied "I like to check other people's papers." Several other students answered in a similar manner. Perhaps this holds true

for many students in the test class. Correcting other students' work may be interesting in of itself and therefore motivating whether a computer is involved or not.

Word Processing A Final Draft

To create final copies of their written compositions, students retrieved their first draft files previously edited by student partners. Students used their partner's input to make corrections. They continued with revisions of their own until satisfied with the final product. The students who participated in the personal interviews reported much satisfaction with their final compositions. They enjoyed working with their partner(s) and receiving input other than their teacher's. Sixty-four percent of student respondents to the "Final Draft" Mini-Survey preferred using the computer, as opposed to pen and paper, to create a final draft.

Class Newsletter

The concluding activity, a Class Newsletter, was produced by the students to distribute among themselves and to share with their Irish computer pen pals. Student pairs shared the composing and editing

tasks. Sixty-three percent of the students responding to the Class Newsletter Mini-Survey preferred using a computer for this activity, rather than handwriting and then typing the articles. One student interviewed by the researcher said he liked writing and editing the news items on the computer because "...it's easier than writing [the article] and then having to type it." Another student felt this activity was more interesting than some of the others because "...our pen pals get to know what's happening around our school...and what it's like in a school in the United States." Ideally, a desktop publishing program would have enabled students to include graphics, multiple type sizes, and produce a more professional-looking newsletter. However, a desktop publishing program is not readily available to the Ponte Vedra-Palm Valley middle school teachers at this time.

Overall, a majority of the test class preferred to use the computer and other technology for the language arts activities. Fifty-seven percent of students preferred using computers or technology for the activities rather than traditional classroom methods. Students interviewed by the researcher

expressed an interest in other types of activities as well, including those devoted to spelling, vocabulary, play writing, and thinking skills. They also offered the following suggestions for teachers interested in implementing this curriculum into their language arts class: Let the students practice using the word processor before they begin the activities, give students plenty of time to finish each activity, occasionally offer some game-type activities, and if possible use the computer, as opposed to the chalkboard or an overhead transparency, to review each computer activity with the students.

Post-Treatment Results

The researcher administered a final survey to the students at the conclusion of the nine-seek field test to determine if the computer and technology integrated curriculum had enhanced their attitudes toward studying grammar. Part One of the post-treatment instrument, known as the Final-Survey, is identical to the pre-treatment instrument in all but one respect. The post-treatment Final Survey (see Appendix A) includes notation of the grammar-related computer activities. The classroom teacher distributed the

Final Survey to the test-class upon their completion of the ten activities. Again, students ranked each of the State of Florida Language Arts Performance Standards on a one through ten scale, where one was selected for the skill or content area most enjoyed by the student, and ten was selected for the skill or content area least enjoyed by the student. Displayed in Table 4 (see Appendix B) are the ten skill or content areas, as ranked by the test class, on the pre-treatment and post-treatment instruments. Mean rankings are listed for both instruments. The researcher also notes the degree of change in mean ranking between the two instruments. The results obtained by the pre-treatment Student Survey placed Grammar and Usage tenth among the ten language arts curriculum areas, with a mean ranking of 8.38. The results obtained by the post-treatment Final Survey place Grammar and Usage seventh among the ten language arts curriculum areas, with a mean ranking of 6.21. The degree of change in mean ranking between the two instruments is 2.17. Grammar and Usage is the only skill or content area on the survey to ascend in the rank order by such a large degree. This change in

rank suggests that students enjoyed the grammar-related content and skills, when delivered with technology, to a greater degree, than when delivered by traditional means.

Recommendations

The researcher offers the following recommendations for integrating computers and other technologies into the language arts curriculum:

1) Before initiating each activity teachers must ensure that students have received sufficient instruction in the skill or content area each activity covers.

2) Teachers should familiarize themselves with the software, hardware, and other equipment before they introduce these items to these students.

3) Introduce the software and hardware components to the students before implementing the activities. Give students sufficient practice time. The students in the test class should have had several sessions at the computer to practice retrieving files, keyboarding, editing, printing files, and saving files, prior to their participation in the planned activities.

4) Implement the activities one by one. Do not

overlap activities. Following several schedules and several sets of directions is confusing for the students and the teacher.

5) When only one computer is available to the students, team them in groups of two or three. Students generally feel more comfortable when they have a partner to work with. The team approach also relieves the classroom teacher from being the sole source of assistance to the students.

6) To avoid overwhelming students, divide longer activities such as Sentence Combining, Sentence Editor, and Paragraph Editor into shorter subsections. For example, in Paragraph Editor assign students only one paragraph to edit each session.

7) Organization and flexibility are imperative to the success of these activities. The teacher in the test class prepared a schedule (see Appendix A) for each activity. However, this schedule required adjustment at various times during the nine week test period due to absences, school activities, and other circumstances. Teachers should use a pencil to complete their schedules so that changes can be made when necessary.

<u>Conclusions</u>

The data collected from the results of the surveys and the information obtained from the personal interviews provide evidence that integrating computers and other types of technology into the language arts curriculum, to teach grammar-related content and skills, will enhance student interest in the lessons. Students who participated in the field test preferred using computers and technology over traditional instructional methods in most instances. However, teachers must ensure that students have ample opportunities to familiarize themselves with the hardware and software before integrating computers and other technologies into the curriculum. Though this curriculum project was confined to introducing computers and other technologies to language arts classes, teachers of all subject areas could introduce computers and other types of technology into their classrooms to promote student motivation. If both teachers and students indicate an interest in using technological tools, and are willing to acquaint themselves with the necessary equipment and procedures, then multiple purposes are served.

Teachers can include a variety of effective computer and technology based instructional techniques in their daily classroom agendas. Students will learn and apply material by methods they find interesting and satisfying. Finally, students and teachers will gain proficiency using technological tools which are becoming essential for survival in modern society.

Appendix A

February 26, 1991

Dear Language Arts Teacher:

I am currently preparing my Master's Curriculum Project, entitled Computer and Technology Assisted Language Arts Activities for Middle School Students. Through the use of student surveys, I am trying ascertain which language arts instructional areas are the least motivating for students. I hope to create activities that might add interest to some of the less exciting language arts objectives.

If you would please take a few moments distribute the Student Survey to one section of your standard language arts classes, I would be extremely grateful. Please return the completed Student Surveys to _____, as soon as possible.

Again, I appreciate your cooperation.

Sincerely,

Cathy Mullan

**I will be happy to share the results of my project with you. You may reach me at

STUDENT SURVEY

Please respond to the following items. Do not sign your name on this form.

I am in _____ grade.

What do you like to do the most in your language arts class? Rank the following activities 1 - 10. **Number 1** is your **favorite** activity and **number 10** is your **least favorite** activity.

_____ a.   studying spelling and/or vocabulary words

_____ b.   practicing reading comprehension skills (reading a story and answering questions about it)

_____ c.   discussing the characters in a novel or story

_____ d.   writing paragraphs and stories (including editing and revising)

_____ e.   studying grammar (sentence structure, capitalization, punctuation, word usage)

_____ f.   giving speeches and oral presentations

_____ g.   practicing listening skills (listening to presentations and discussions)

_____ h.   using thinking skills (determining whether material is fact or opinion, real or fantasy)

_____ i.   practicing study skills (finding resource material in the library, practicing note taking, etc.)

_____ j.   discussing careers that require good communication skills

CHECK ONE:

_____   I would like to use a computer and/or other technology for some of my language arts class work.

_____   I would not like to use a computer and/or other technology for some of my language arts class work.

MINI-SURVEY

Activity Name _____

Please check ONE of the following statements.

_____   I enjoyed using the computer for this
            activity.

_____   I would prefer doing this activity in the
            usual way (textbook, lecture, answering
            questions, etc.)

_____   I do not have a preference.

FINAL SURVEY

Please respond to the following items. Do not sign
your name on this form.

I am in _____ grade.

What do you like to do the most in your language arts
class? Rank the following activities 1 - 10. **Number
1** is your **favorite** activity and **number 10** is your
least favorite activity.

_____ a. studying spelling and/or vocabulary words

_____ b. practicing reading comprehension skills
            (reading a story and answering questions
            about it)

_____ c. discussing the characters in a novel or
            story

_____ d. writing paragraphs and stories (including
            editing and revising)

_____ e. studying grammar (sentence structure,
            capitalization, punctuation, word usage **
            using the computer activities)

_____ f. giving speeches and oral presentations

_____ g. practicing listening skills (listening to
            presentations and discussions)

_____ h. using thinking skills (determining whether
            material is fact or opinion, real or
            fantasy)

_____ i. practicing study skills (finding resource
            material in the library, practicing note
            taking, etc.)

_____ j. discussing careers that require good
            communication skills

CHECK ONE:

_____   I would like to use a computer and/or
            other technology for some of my language
            arts class work.

_____   I would not like to use a computer and/or
            other technology for some of my language
            arts class work.

INTERVIEW QUESTIONS

1. What did you like about the activities in
    general?

2. What did you like specifically about:
    Computer Pen Pals?
    Class Discussion Critiques?
    Sentence Combining?
    Sentence Editor?
    Paragraph Editor?
    Invisible Writing?
    Word Processing a First Draft?
    Peer Editing?
    Word Processing a Final Draft?
    Class Newsletter?

3. What didn't you like about the activities in
    general?

4. What didn't you like specifically about:
    Computer Pen Pals?
    Class Discussion Critiques?
    Sentence Combining?
    Sentence Editor?
    Paragraph Editor?
    Invisible Writing?
    Word Processing a First Draft?
    Peer Editing?
    Word Processing a Final Draft?
    Class Newsletter?

5. What other types of activites would you have
    liked to work on?

6. Do you prefer these computer and technology
    assisted activities to the traditional types of
    language arts activities? Why or why not?

ACTIVITY _____

SOFTWARE PROGRAM _____

DATA DISK _____

TIME	MON.	TUES.	WED.	THURS.	FRI.

Appendix B

Table 1

Results of the Pre-treatment Student Survey

Statement	Class Six-A	Class Six-B	Total
Vocab/Spell Words	6.19	4.26	5.23
Read Comprehension	5.35	5.63	5.49
Literary Elements	3.88	3.41	3.65
Writing Process	4.62	5.63	5.13
Grammar/Usage	6.96	6.11	6.54
Oral Presentations	6.65	8.37	7.51
Listening Skills	5.85	5.48	5.67
Thinking Skills	4.38	4.70	4.54
Refer/Test Skills	6.12	6.33	6.23
Careers	4.53	4.55	4.54

Table 1 (continued)

Statement	Class Seven-A	Class Seven-B**	Total
Vocab/Spell Words	5.81	5.77	5.79
Read Comprehension	7.35	6.04	6.70
Literary Elements	4.42	4.62	4.52
Writing Process	5.38	4.27	4.38
Grammar/Usage	8.38	8.38	8.38
Oral Presentations	4.42	4.92	4.67
Listening Skills	4.54	4.00	4.27
Thinking Skills	4.58	5.54	5.06
Refer/Test Skills	6.31	6.15	6.23
Careers	3.50	3.92	3.71

** Denotes the test-class

Table 1 (continued)

Statement	Class Eight-A	Class Eight-B	Total
Vocab/Spell Words	6.17	6.60	6.39
Read Comprehension	7.00	6.00	6.50
Literary Elements	3.50	4.55	4.03
Writing Process	4.25	5.15	4.70
Grammar/Usage	6.92	7.50	7.21
Oral Presentations	5.17	3.60	4.39
Listening Skills	6.92	4.30	5.61
Thinking Skills	5.50	5.25	5.38
Refer/Test Skills	5.33	5.35	5.34
Careers	4.42	5.00	4.71

Table 1 (continued)

Statement	Totals for All Grades
Vocab/Spell Words	5.80
Read Comprehension	6.23
Literary Elements	4.06
Writing Process	4.89
Grammar/Usage	7.38
Oral Presentations	5.52
Listening Skills	5.18
Thinking Skills	4.99
Refer/Test Skills	5.93
Careers	4.32

STUDENTS AND COMPUTER USE

Pre-treatment:

> I would like to use a computer and/or other
> technology for some of my language arts class
> work. (100%)

> I would not like to use a computer and/or other
> technology for some of my language arts class
> work. (0)

Post-treatment:

> I enjoyed using a computer and other technology
> for some of my language arts classwork. (94%)

> I did not enjoy using a computer and other
> technology for some of my language arts
> classwork. (6%)

Table Three

<u>Student Preferences</u>

	Computers/ Technology	Traditional Methods	No Preference
Computer Pen Pals	68%	6%	26%
Discussion Critiques	67%	10%	23%
Sentence Combining	46%	13%	42%
Sentence Editor	38%	9%	53%
Paragraph Editor	40%	8%	52%
Invisible Writing	63%	4%	33%
Peer Editing/ Final Draft	48%	4%	48%
Newsletter	63%	0	37%
AVERAGE	54%	7%	39%

Table 4

Mean Ranked Results for the Pre-treatment and Post-treatment Instruments

Content or Skill Area	Student Survey	Final Survey	Degree of Change
Careers	3.92	3.76	− .16
Listening Skills	4.00	5.55	+1.55
Writing Process	4.27	4.79	+ .52
Literary Elements	4.62	5.06	+ .44
Oral Presentations	4.92	4.73	− .19
Thinking Skills	5.54	5.24	− .30
Vocab/Spell Words	5.77	6.79	+1.02
Read Comprehension	6.04	6.51	− .47
Refer/Test Skills	6.15	6.55	+ .40
Grammar/Usage	8.38	6.21	−2.17

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