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ABSTRACT

A project was developed to teach literacy to adult students over 40 years old, using job-related materials in a computer-assisted approach with volunteer tutors. The project used the Penn State Adult Literacy Courseware, consisting of six computer-based modules and an Apple IIGS microcomputer. Volunteer teachers already working with adult students at the test site were recruited for participation in the project and trained in using the courseware. Adult students reading at a sixth-grade level or below who were unemployed or underemployed were targeted for the program. Tutors helped students work on modules that met their needs and interests. Throughout the project and at the end, 13 students and 14 tutors were asked about their attitudes and impressions of the project. Evaluation indicated that tutors and students showed positive attitudes and interest in the courseware. Many volunteer tutors were able to use the computers and courseware with their students by the end of the project, and students showed gains in reading and writing ability. Many student/tutor pairs were still working with the computers/courseware at the end of the project and planned to continue. The project proved, however, that learning to use computers takes time as well as support for tutors and students. (Sixteen appendices contain responses to the student attitude, student closeout, tutor attitude, and tutor closeout surveys; tutor guidelines; a 29-page program manual; a 35-page tutor's guide to the courseware; responses to the advisory board questionnaire; and guidelines for creating courseware lessons.) (KC)

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Older Displaced Workers Write to Read: A Computer-Assisted, Work-Related Basic Skills Program Using the Process Approach to Writing

Final Report

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Introduction

Technology-based approaches to instruction, particularly computer-assisted instruction, are promising instructional approaches for adult learners. For these approaches to be successful, however, those who instruct adult learners must be comfortable with them.

Volunteers play a large role in adult basic education and adult literacy education today. Many of these individuals have little or no experience teaching reading and writing, and little or no experience working with adult learners. Many of them have minimal exposure to computers.

One of the major thrusts of the work of the Institute for the Study of Adult Literacy has been the development of computer-based instruction for adult beginning readers (those reading at the 0-6 grade level). The Penn State Adult Literacy Courseware, which is intended for use by adult beginning readers, has been under development since 1984. Evaluation studies have shown that the Penn State Adult Literacy Courseware is an effective instructional tool for adult beginning readers (Askov, 1986; Askov, Maclay, & Bixler, 1987). However, in these studies, trained teachers, rather than volunteer tutors, worked with adult students as they used the Courseware. Thus, one objective of the project discussed in this report was to investigate whether volunteer tutors could successfully use the Penn State Adult Literacy Courseware with adult beginning readers. Volunteer tutor's use of the Penn State Adult Literacy Courseware was investigated in a pilot study conducted by Bixler and Askov (1988). Of particular interest in the present study was investigating whether volunteer tutors could use the Courseware's authoring system to develop instruction geared toward a particular learner's needs and

interests. A second objective focused on the development of an instructional approach that volunteer tutors could use, along with the word processing module of the Penn State Adult Literacy Courseware, to develop writing skills of the learners. This instructional approach assisted volunteer tutors in capitalizing on the stages of the writing process in order to facilitate the development of their students' writing skills.

This project had two other objectives. One was to investigate the success of the Courseware with a new target population: adult learners over the age of forty. The proportion of the population in this age group is growing: these older Americans will need literacy skills in order to adapt to fast-paced societal change (Johnston & Packer, 1987). Thus, it will be increasingly important to investigate the effectiveness of instructional approaches with this population of learners. It is generally accepted that gearing instruction to a learner's needs and interests will motivate the learner, in addition to helping insure that the instruction will be successful. Thus, it was anticipated that gearing reading and writing instruction to job-related interests of these learners would be particularly helpful to them (the area of the country that the project served has a high unemployment rate, especially among this age group). The final objective was to develop a program manual, which would provide guidelines and procedures for replication of the project to other literacy providers, who work with volunteers.

The Older Displaced Workers Write to Read Project was developed during the period from October 1, 1988, through March 31, 1990, at Adult Literacy Action of Penn State Beaver Campus, and the Mid-Mon Literacy Council, based at the Monessen Public Library. An

Apple IIGS computer and the Penn State Adult Literacy Courseware were placed at each site, purchased by funds from the National Adult Education Discretionary Program of the U. S. Department of Education.

The Penn State Adult Literacy Courseware consists of six modules. One module provides an introduction to the computer; three instructional modules provide instruction in recognizing picturable and non- picturable words; one module provides instruction in recognizing words commonly found on a variety of application forms (for example, *disability*, *dependents*, *references*, and *citizenship*); and a word processing module allows students to enter text into the computer, edit it, and print it. The computer "speaks" to the student, providing directions and reading aloud information on the screen. This is accomplished with a device, known as a speech synthesizer (Echo GP), attached to the computer. The software can be used to create new lessons tailored to individual students. A student may be interested in the carpentry profession, for example. Ten vocabulary words he or she would need to know in the carpentry field can be selected to form the basis for a new lesson. A tutor develops sentences using each of the ten target words. The tutor then selects an option on the computer screen to "create a new lesson". The tutor follows a series of steps to create a lesson which includes the target words and sentences. The modules are designed to be used by adult students reading below the sixth grade level, although the application forms module and the word processing module can be used by more advanced students.

Volunteer tutors already working with adult students at the test sites were recruited for participation in the project. Adult students who were unemployed or underemployed, age forty or over, and reading

below the sixth grade level were targeted for inclusion in the project. Tutors were trained in how to use the basic courseware. They worked with their students on modules that met their students' needs and interests. Many tutors were also trained in how to use the word processing module of the courseware. They helped students practice general interest and job-related writing. Progress of students and tutors was tracked throughout the project. Students were tested before they began participation in the project to determine their reading ability level using the Slosson Oral Reading Test (SORT) and the Bader Reading and Language Inventory. At the end of the project, and throughout the project, students were questioned about their attitudes toward and impressions about the project, and were readministered the SORT and the Bader to assess changes in reading ability level. At the end of the project, and throughout the project, tutors were questioned about their attitudes toward and impressions about the project.

Overview

The outcomes of the project provide several reasons for optimism about volunteer tutors' use of the computer and the process approach to writing instruction. First, students and tutors showed positive attitudes and interest, overall, related to participation in the project. Second, by the completion of the project, many volunteer tutors were able to use the computer and Courseware with their students; and, students showed gains in reading and writing ability. Finally, many tutor/student pairs were still working with the computer and Courseware at the end of the project period, and were planning to continue to work with them.

The project did identify several challenges facing those who want to use computers for literacy instruction with adult students. First, it m[illegible]

take a period of familiarization with the computer for students to show positive attitudes toward using the computer, especially older students (over the age of 40). In addition, ongoing technical and instructional support for tutors, easily available as needed, is an essential component for success. Finally, an area dedicated to the hardware is necessary, in order to provide ease of access to tutors, and to provide privacy to working tutor/student pairs.

Project outcomes indicate that the computer is a promising instructional tool, and that the process approach to writing is a promising instructional approach, for volunteer tutors. However, establishment of successful programs utilizing the computer and the process approach to writing instruction is a long-term venture. The information gathered in this project related to setting up such a program will be helpful to similar future efforts.

Description of Sites and Participating Tutors and Students

This section gives a brief description of the sites and the tutors and students at each site who worked with the computer. The information reported in this section was gathered from records kept during the project and closeout questionnaires administered to tutors and students at the end of the project.

Monessen Public Library and the Mid-Mon Literacy Council

The Monessen Public Library houses the Mid-Mon Literacy Council. This council offers one-on-one literacy tutoring. Volunteer tutors receive training in the Laubach Way to Reading, then are paired with students. Many tutors and students meet at the Library, although they also meet at other sites around the community. There were

substantial differences in background among the volunteer tutors and their students participating at this site. Therefore, each pair is described in detail in this section.

C. R. and her student E. N. worked more hours with the computer than any tutor/student pair at either site. They logged a total of 24.75 hours on the computer throughout the project. C. R. is retired. She has a college degree, and had worked as a secretary. E. N. is a 36 year-old male student who works part-time doing yard work. He is a high school graduate. He became involved in the project because he wanted to read well enough to study for the driver's license exam. Before E. N. began working with the computer, he scored at the 1.4 grade level on the SORT and could not complete the Bader. C. R. and her student began working with the computer in June, 1989. They were still working with the computer when the project ended in March, 1990. They used module 5 (word families) and module 6 (word processor).

B. N. and her student M. R. completed 13 hours of work with the computer. B. N. is retired. She is a homemaker and mother of three. She has also owned her own business. M. R. is a male student in his early 20's. He is a high school graduate. He works part-time as a janitor. Mark became involved in the program because he wanted to obtain a better maintenance job. M. R. scored at the 3.4 grade level on the SORT and the Pre-primer level on the Bader when he began to work with the computer. B. N. and her student began working with the computer in September, 1989. They were still working with the computer when the project ended in March, 1990. They used module 2 (picturable words), 5 (word families) and module 6 (word processor).

J. C. and her student M. W. worked a total of 8 hours with the computer. J.C. is retired. She worked in the composing room and on the editorial staff of a newspaper. She is also a mother of two and grandmother of seven. M. W. is a 23 year old high school graduate. He is employed full time as a bus boy. He became involved in the program in order to learn to read well enough to enroll in trade school for carpentry. He scored at the Primer level on the Bader when he began working with the computer (he was not administered the SORT). J. C. and her student began working with the computer in August, 1989. They were still working with the computer when the project ended in March, 1990. They used module 2 (picturable words) and module 5 (word families).

J. D. and her student W. P. worked 7.5 hours with the computer. J. D. is not currently employed outside the home. She is the mother of two and has worked as a credit administrator and a secretary. She attended college. W. P. is a 54 year old male student. He is a part-time laborer. He completed the fourth grade in school. W. P. was involved in the program because he wanted to improve his general reading and writing skills. He reported no occupational aspirations. He scored at the 3.1 level on the SORT and the 3.0 level on the Bader when he began working with the computer. J. D. and her student began working with the computer in May, 1989. They stopped working with the computer in October, 1989, because W. P. experienced some personal problems and was hospitalized for some time. J. D. felt that, given the small amount of time they had to work together, they could accomplish more with the Laubach method. They used module 2 (picturable words), module 4

(application forms), module 5 (word families), and module 6 (word processor).

B. W. and her student C. Y. completed 6 hours of work with the computer. B. W. is retired. She is a high school graduate who worked as a paymaster and a clerk. C. Y. is a 38 year old male who works part-time as a security guard. He was participating in the project in order to be better able to complete forms at work. He completed the 11th grade in school. C. Y. scored at the 2.7 level on the SORT and the 4th grade level on the Bader when he began working with the computer. B. W. and her student began working with the computer in September, 1989. They were still working with the computer at the end of the project. They used module 2 (picturable words), module 3 (non-picturable words), module 5 (word families), and module 6 (word processor).

M. K. and her student R. R. worked 3.25 hours with the computer. M. K. is a college graduate. She is not currently employed outside the home, but has worked as a financial aid officer and an accountant. R. R. is a woman in her early 20's. She scored at the 1.6 level on the SORT and the Pre-primer level on the Bader when she began working with the project. R. R. did not complete a closeout questionnaire at the end of the project, therefore information about her background is incomplete. M. K. and her student began working with the computer in May, 1989. They stopped working with the computer that same month because R. R. moved too far away from the library and could not continue meeting with M. K. there for lessons. They used module 2 (picturable words), module 3 (non-picturable words), and module 5 (word families).

R. K. and her student S. T. completed 2 hours of work with the computer. R. K. is retired. She is a homemaker and mother who has

worked in a library. She completed high school. Her student is a 55 year old woman who is a homemaker. She is a high school graduate. S. T. came to the U.S. from Greece several years ago. She has an excellent command of the English language. She was interested in improving her reading comprehension skills, and her tutor suggested her for this project because she thought S. T. would benefit from using the word processor. S. T. was not administered the SORT or the Bader. R. K. and her student began working with the computer in February, 1990. They were still working with the computer at the end of the project. They used module 6 (word processor).

C. D. and her male student, M. B., worked one hour with the computer in November, 1989, on module 2 (picturable words). C. D. completed college and works part-time as a substitute teacher. She is the mother of two children. C. D. lost contact with her student shortly after they were ready to start working with the computer. M. B. was not administered the SORT or the Bader. He did not complete the close out questionnaire, so information on him is incomplete.

Adult Literacy Action

Adult Literacy Action (ALA) is housed in the library at the Penn State Beaver Campus. This organization offers a variety of classes and programs for adult students, including one-to-one tutoring. Volunteer tutors are paired with students after receiving training in the Laubach Way to Reading. Few tutor/student pairs meet at the library; to work together; instead, they meet at other locations convenient to both tutor and student. Again, the background of each tutor-student pair is described in detail.

D. E. and her student, F. G., worked 15 hours with the computer. D. E. was a college student at the Beaver Campus of Penn State. When she left the campus, F. G. began working with a second tutor, C. M. C. M. is homemaker and mother of three children. She is a high school graduate. She worked an additional 1.5 hours on the computer with F. G. F. G. is a 63 year old male student. He wanted to learn to read better in order to study for the driver's license exam. He also expressed an interest in learning to read better so that he could read to his grandchildren. He is retired and worked in a scrap yard. F. G. completed the 5th or 6th grade in school. F. G. was reluctant to be tested. He did not complete either the SORT or the Bader. D. E. and F. G. began working with the computer in February, 1989. They stopped working together at the end of April, 1989, when D. E. left the campus. They used module 2 (picturable words). C. M. worked with F. G. during November, 1989. They worked with module 5 (word families). They did not continue to work with the computer because C. M. felt that working with the Laubach method helped her student more. In addition, the student did not want to continue working with the computer.

C. M. and her student K. L. worked 8 hours with the computer. C. M. was employed part-time as the computer specialist at ALA. She completed an Associate's Degree. Her student, K. L., is a 43 year old woman. She is employed part-time doing housekeeping. K. L. came to the U.S. from Korea 23 years ago. K. L began working with the computer in order to learn to fill out job application forms. She also wanted to learn to type. K. L. scored at the 2.2 grade level on the SORT and the 2nd grade level on the Bader when she began working with the computer. C. M. and K. L. began working with the computer in February, 1989. They

worked on modules 2 (picturable words), 3 (non-picturable words), 4 (application forms), 5 (word families), and 6 (word processor). They stopped working with the computer in April, 1989, because both C. M. and K. L. felt that the program was not helping K. L. The speech synthesizer's pronunciation of words confused her.

D. W. and his male student T. G. worked for 4 hours on the computer. They worked on the computer during January, 1990, using module 2 (picturable words). D. W. lost contact with T. G. and did not continue to work with the computer. Neither D. W. or T. G. filled out closeout questionnaires. T. G. was not administered the SORT or the Bader.

R. M. and her student, P. L., worked 3.25 hours with the computer. R. M. is retired. She obtained her GED and has worked as a housekeeper, clerk, and calibrator at the electric company. Her student, P. L., is a 42 year-old female. P. L. works part-time in day care. She began participating in the project because she eventually hopes to complete her GED, and wished to become a teacher's aid. She completed the 10th grade in school. P. L. did not complete the SORT or the Bader. R. M. and P. L. began working with the computer in March, 1990. They worked with modules 2 (picturable words), 4 (application forms), and 6 (word processor). They were still working with the computer at the end of the project.

L. M. and her male student worked 2 hours with the computer. L. M. is retired. She has worked as a bookkeeper, money order clerk, and secretary, and has held other jobs as well. She is also a homemaker and mother. She completed high school and business school. Her male student did not complete a closeout questionnaire, so no further

information is available on him. He did not complete the SORT or the Bader. L. M. and her student began working together in February, 1990. They worked with module 2 (picturable words). L. M. had surgery late in February and could not continue working with her student.

Project Outcomes and Findings

Recruiting tutor/student pairs, and training tutors in how to use the basic courseware modules, took substantial and continuing effort throughout the project period. Thus, a valuable outcome of this project was the opportunity to document the process of setting up a computer-based instructional program in existing literacy programs where one-to-one volunteer tutoring is the primary method of instruction. In addition, the project provided the opportunity to study, on a large scale, volunteer tutors' use of the existing modules of the Penn State Adult Literacy Courseware. An approach to writing instruction was developed that helped volunteer tutors capitalize on the stages of the writing process in order to facilitate the development of their students' writing skills. Finally, the success with which tutors were able to implement this instructional approach was evaluated.

Although the target population was older (over the age of 40) unemployed and underemployed adults reading at or below the sixth grade level, participation was opened up to younger students, and students with a broader range of goals, due to initial difficulty in recruiting students who were in the target group. Both older and younger students enjoyed working on the computer, and were able to successfully begin working with the Courseware. At the end of the project many were still not totally confident in their abilites to use the computer. There was, however, a general increase in the self-confidence and self-esteem of

these students that resulted from working with the computer. Finally, the writing ability of two students who regularly used the word processing module to practice writing text improved over the course of the project. Students did dislike some aspects of the Courseware: mainly the speed of the system (they found it too slow), and the sound of the speech synthesizer.

Tutors needed a large amount of assistance in learning to use the Courseware. There were individual differences in the amount of training that tutors needed, and most tutors needed multiple training sessions in order to learn the basics. Tutors continued to need much technical support throughout the project, as they began working with their students, and questions relating to their use of the computer to meet their student's unique needs arose. Tutors also needed instructional support, and a manual to assist tutors in their use of the Courseware was developed. Many of the volunteers working in the project were not able to devote the needed time to developing a thorough knowledge of the Courseware, and to developing instruction targeted to the needs of their students, due to other commitments. Thus, at the end of the funding period, volunteer tutors were only beginning to get a good feeling for the Courseware and its capabilities. They were only beginning to become familiar enough with the system to use it without needing assistance.

Overall, participating tutors enjoyed having the opportunity to use the Courseware to supplement their existing instructional approach, and were becoming skilled in using the Courseware to supplement their instructional approach. Their main dislikes about the Courseware were the same as those of the students': the slowness of the system, and the sound of the speech synthesizer.

Project Objectives and Related Activities

The following section describes project activities related to the four project objectives. Project findings related to each objective are also discussed.

Objective 1: Evaluate the Effectiveness of the Penn State Adult Literacy Courseware with a Target Population that is Different from the One for Which It Was Developed

In this study, use of the Courseware by adult students over the age of forty was of particular interest. These older students and their tutors were actively recruited to participate in the project. However, younger students were permitted to participate at both sites in order to fully utilize the equipment. Of the thirteen students who participated in the project, five were over 40; two were in their late 30's (36 and 38); three were in their 20's; while the ages of three were unknown.

The instructional effectiveness of the Penn State Adult Literacy Courseware was evaluated in several ways: 1) by changes in student scores on the Slosson Oral Reading Test (SORT), from the time the student started working with the Courseware until he or she had worked twenty hours with the Courseware; 2) by changes in the Bader Reading and Language Inventory, from the time the student started working with the Courseware until he or she had worked twenty hours with the Courseware; 3) by changes in student writing samples over time; 4) by changes in attitudes about using the computer as an aid to learning, from the time the student began working with it until the end of the project; and 5) by interviews conducted with participating students at the end of the project. This section presents the results of this evaluation.

The results are largely attitudinal. The intent was to administer the SORT and Bader to students after every 20 hours of using the Courseware. However, for a variety of reasons, students did not accumulate many hours on the computer. Hardware was not delivered to the sites until December, 1988. The first tutor/student pairs began working in the project in February, 1989. Recruitment of tutor/student pairs and training of tutors took more effort than expected. Tutors were still being trained as late as February, 1990, and tutor/student pairs were still joining the project in March of 1990. As is typical in literacy programs, progress was hindered by personal problems of both tutors and students. Of the fourteen tutor/student pairs that participated in the project at some point, six were still working together at the end of the project. Four of the students still working at the end of the project were in their late 30's or over 40. Several of the students were unwilling to be tested. In addition, it was often difficult to arrange times to test students that were convenient for both project staff and students.

Changes in SORT and Bader scores. Only one student was readministered the SORT and Bader 16.5 hours after he had begun to work with the computer. His SORT score increased from 1.4 (grade level) to 1.5. His Bader score also improved. At the beginning of the project he could not complete the Bader. After 16.5 hours of use of the courseware, he scored at the Pre-primer level.

Results of the student attitude survey. The attitude survey used in this project was adapted from an attitude survey developed by Askov and Brown, (1988). Items were changed to make them more relevant to this project. The questions included on the student attitude survey are listed in Appendix A. The following summary is based on the

responses to the attitude survey of six students, from both sites, who worked with the computer for at least five hours. Two students worked with the computer less than five hours. Their responses are not included. Responses from each student were obtained at the conclusion of the project. The responses of each student to each question can be found in Appendix B. A summary of student responses, by question, can be found in Appendix C.

Students believed that others respected them for using the computer. They believed that using the computer was helping to improve their literacy skills, and their attitudes toward literacy skills. They indicated that they enjoyed using the computer, although this was less clear. By the end of the project, many still felt unsure of their ability to use the computer.

The responses of four older students (36, 38, 54, and 63 years of age) were very similar to those of the group overall, with a few exceptions. Older students were not sure that using the computer was something others respected. Three said they would be afraid to enroll in another literacy program that used computers for instruction. Two said that learning from the computer was more difficult than learning from a book.

Results of the student closeout survey. A closeout survey was distributed to students at the end of the project, in order to further investigate their reactions to the computer and courseware. Eight students completed closeout surveys. The responses of six, who had used the courseware at least five hours, are summarized here. The questions on the student closeout survey, and students' responses to each question, are reported in Appendix D.

Several points emerged from these interviews. For the most part, students enjoyed working with the computer. They disliked the slowness of the Courseware, and they disliked the sound of the speech synthesizer. Many tutor/student pairs were still plagued by technical problems at the end of the project.

Writing improvement. Seven students used the word processing module during the course of the project. Two students used the word processor to write text, and did so over a long enough period of time that changes in writing ability could be measured. M. R., a student in his 20's, developed three stories on the word processor. He revised his first story three times, and his second story two times. E. N., a 36 year-old student, wrote first drafts of four stories, and a second draft of one story.

Changes in the number of words per writing sample were examined as a measure of writing fluency. Changes in number of words in revisions of the same story were examined. In addition, changes in the number of words in first drafts of stories were examined. Data on the number of words per draft in M. R.'s and E. N.'s writing samples are presented in Appendix E.

The number of words per writing sample increased on each draft of student stories, and in first drafts of stories. Students became more fluent as their writing experience increased, and more willing to put words down on paper. Even after only a small amount of work with the word processor, students' writing showed improvement.

Changes made as students revised stories were also examined. Changes in drafts of M. R.'s and E. N.'s stories are listed in detail in Appendix F.

M. R.'s changes in consecutive drafts were substantive. Many changes involved addition of information which would clarify meaning. E. N., on the other hand, tended to make low-level changes involving spelling or punctuation, which added little information. Thus, M. R., a younger student, developed meaning-oriented processing. E. N., an older student, did not.

Conclusions. For the most part, students enjoyed working on the computer. Older students were as likely as younger students to stay with the program, even though they tended to be wanier of the computer than younger students. Tutor/student pairs were still having technical problems with the equipment at the end of the project, which may have lessened students' feelings of confidence about using the computer.

One younger and one older student frequently made use of the word processing module to practice writing text. Both students showed improvement, in terms of writing fluency, over time. The younger student, however, tended to improve more than the older student in terms of developing high-level, meaning-oriented writing processes. These differences may have been due to differences in their tutors' approaches to writing instruction, as well as the age of the students. This possibility is discussed further in a later section of this report.

Objective 2: Evaluate the Effectiveness of Having Volunteer Tutors Use the Courseware's Authoring System to Develop Job-specific Reading and Writing Instruction

None of the tutors involved in the project ever progressed to the point where they were able to develop individualized reading instruction for their student using the Courseware's authoring system. Seven of the

fourteen tutors who participated in the project had no experience with computers, and it took a long time for the tutors to adapt to simple computer usage concepts (i.e., remembering how to turn on the computer, remembering how to correctly insert a disk). Many of the tutors were still struggling with the basics at the end of the project. The lesson creation procedure is somewhat time consuming and involves the use of the Courseware's file editor. For these reasons, project staff focused on assisting tutors in the use of the basic courseware modules and the word processing modules. This project presented the first opportunity to do a large-scale evaluation of volunteer tutors' use of the basic courseware and word processing module. Because students indicated a wide variety of personal reasons for participating in this project, project staff did not stress the necessity of developing job-related writing instruction. Rather, tutors were assisted in developing writing instruction that met any perceived writing needs of their student.

Results of tutor attitude survey. The tutor attitude survey used in this project was adapted from an attitude survey developed by Askov and Brown (1988). Items were changed to make them more relevant to this project. The items included on the tutor attitude questionnaire are included in Appendix G. The following summarizes the responses to the attitude survey of seven tutors, from both sites, who worked with the computer for at least five hours. Six tutors who completed attitude surveys worked with the computer less than five hours. Their responses are not included. Responses from each tutor were obtained at the conclusion of the project. The responses of each tutor to each question are presented in Appendix H. A summary of tutor responses, by question, is presented in Appendix I.

At the end of the project, tutors were confident in their ability to use the computer as an instructional aide. Tutors were uncertain about the program's ability to assist their students in developing reading skills. This may have been because most tutors worked with their students on the computer for a very small amount of time. They could not see much evidence of student progress by the time the project ended. Tutors who frequently used the word processing module with their students to write text felt that the program helped improve their students' writing skills. Tutors did not feel that using the computer as an instructional aide made extra work for them; nor did they feel that it depersonalized their tutoring sessions with students.

Tutors' approach to writing instruction. Tutors were encouraged throughout the project to assist their students in using the word processing module to write text. An instructional approach was developed, as part of project activities, that would assist volunteer tutors in capitalizing on the writing process in order to assist their students in improving their writing skills. The development of this instructional approach, and the description of tutor training in use of the instructional approach, is described in a later section of this report. As already mentioned, two tutors frequently used the word processing module with their students to write text. Five other tutor/student pairs also used the word processing module. One tutor dictated words to the student for him to type. Another tutor had her student use the module to write isolated sentences. Three other tutors had their students write stories on one occasion.

The two tutors who frequently used the word processing module with their students to write text had varying levels of success in using the

instructional approach. B. N. worked with M. R. in use of the word processor. By the end of the project, M. R. was making substantive changes in his story drafts. His changes added or clarified meaning and did not tend to focus on spelling, punctuation, and other conventions. B. N. successfully used the instructional approach. She assisted M. R. in focusing on the content of his writing. She commented on the content, asking questions that helped M. R. clarify his meaning or add more information. She encouraged him to concentrate on meaning, rather than convention. E. N., the other student, made low-level changes to his text, concentrating on correct spelling and punctuation. His tutor, C. R., tended to focus E. N.'s attention on these elements even after she has been instructed not to do so. The process approach came naturally to B. N., but was misunderstood by C. R. The tutors' ability to understand and use the approach influenced their students' progress in developing writing ability.

Results of the tutor closeout survey. A closeout survey was distributed, at the end of the project, to thirteen out of fourteen tutors who had worked with students at some time during the project period. One tutor had moved from the area and could not be contacted. Twelve tutors filled out closeout surveys. The purpose of the questionnaire was to further investigate tutors' reactions to the computer and courseware. A summary of the responses of six, who had used the courseware at least five hours, are included here. The questions on the tutor closeout survey, and tutors' responses to each question, are reported in Appendix J.

Several points emerged from these interviews. The way in which the Courseware was utilized varied greatly among tutor/student pairs. What tutors liked best about the Courseware was that it gave their

students confidence. They dislike the same features that the students disliked: the slowness of the system, and the sound of the speech synthesizer.

Conclusions. Most tutors did not work enough hours with the Courseware to get a good idea of the extent to which it helped improve their students' reading ability. Tutors who frequently assisted their students in using the word processing module to write text felt that the Courseware was useful in helping students learn to write. This was the case even though tutors differed in the extent to which they could apply the process approach to writing instruction. Tutors agreed that use of the Courseware improved their students' self-confidence.

Objective 3: Develop and Evaluate a Writing Instructional Approach Using the Process Approach to Writing and Emphasizing the Needs Specific to Older Displaced and Underemployed Workers

Many researchers who study composition describe it as a complex process that occurs in a series of stages. The stages most commonly described (see, for example, Graves, 1983) are as follows:

1. Prewriting - The writer gathers information, experiments with ideas, chooses a topic, and may outline or do other planning.
2. Drafting - The writer gets ideas down on paper. Spelling, sentence structure and grammar are not important at this point.
3. Sharing - The writer and another person read the draft. Questions asked about the draft and suggestions made by the other person will help the writer clarify and expand the piece.

4. Revising - Based on rereading and feedback from others, writers expand ideas, clarify meaning, and reorganize information.
Note - Writers go through the writing/sharing/revising process several times, refining content until the goal of the writing is reached.
5. Editing - The writer edits for spelling, punctuation, and grammar.
6. Publishing - Once the writer is satisfied with the piece of writing, it is made available for others to read for example students may be encouraged to make their written work available to other students.

Based on the work of Graves (1983), guidelines were developed for tutors which would assist them in capitalizing on this writing process model in order to help students develop writing skills. Guidelines, as they were written for tutors, are presented in Appendix K.

Three things are important to note about this instructional approach. First, students work on many drafts of the composition before it is completed. Each draft is an improvement over the earlier draft. Second, the activity is learner-controlled, not tutor-controlled. The role of the tutor is to facilitate the student's activity, not judge it. The tutor talks with the student, making suggestions about how the piece can be improved, but the student has the final say as far as additions or changes. The student can always return to the piece to refine it or add to it even after it is "completed". Finally, spelling, grammar, and punctuation do not become the focus of concern until very late in the process. The emphasis is to get the student to concentrate on meaning. It is thought that instruction in spelling, grammar, and punctuation will be more meaningful to the student if she can see that attention to these conventions will help make it easier for others to understand the piece.

Site staff reviewed the Guidelines for Writing Instruction. The Guidelines were distributed to tutors when they were trained in how to use the word processor. They provided tutors with background information on the writing process, and directions for facilitating student writing. They guidelines served this purpose and were not changed.

Objective 4: Describe Guidelines and Procedures for Replication in a Program Manual

The project coordinator drafted the Program Manual in March, 1990. She contacted fifteen Adult Literacy and Technology Steering Committee members and Technology Consultants by letter, asking these individuals whether they would be willing to review the Program Manual. Eight individuals responded that they would be willing: the draft program manual was mailed to these individuals in early May, 1990. To date, four individuals have provided comments and suggestions. These have been incorporated into the Program Manual. A copy of the Program Manual is included in Appendix L.

Other Issues

The remainder of the report focuses on issues, activities and findings that emerged during the project, but that were not addressed by one of the four objectives.

Setting Up a Work Area

Although the project began in October, 1988, hardware was not delivered to the sites until mid-December. Staff agreed that recruitment efforts should be postponed until the hardware and courseware were delivered to the sites. It was believed that tutors and students would lose enthusiasm and drop out of the program if they were recruited but could

not start immediately. Consequently, this caused some delay in getting the project going.

At Monessen Library, a work area was set up which housed the computer, monitor, disk drives, speech synthesizer, keyboard, and printer. It consisted of a computer table with two chairs, sectioned off with two room dividers. For security reasons, hardware was wired to the computer table. A file cabinet, which housed student records, disks, extra paper, and so forth, was placed next to the computer table. This set-up worked very well: all of the materials the tutors needed could be kept near their work area. At Adult Literacy Action, there was no space that could be devoted to a work area. The system was set up on a small cart that was moved frequently. This proved to be problematic for several reasons. First, frequent movement of the system caused connections to loosen, and often the system would not start up. The user had to trouble-shoot the problem to determine the source of the faulty connection. This was particularly frustrating for tutors just beginning to learn to operate the system, and dampened their enthusiasm for using the computer. Second, the need to arrange, ahead of time, to have the computer moved into quiet work area discouraged tutors' use of the computer: it was an inconvenience for them. Finally, tutors were not clearly aware, as they were at Monessen, that the computer was intended primarily for their use, again, discouraging their use of the computer. It proved to be very important to the success of the project to have an area that could be devoted to the computer.

Tutor and Student Recruitment Efforts

Recruiting appropriate tutor/student pairs and training tutors in the use of the courseware required substantial effort throughout the project.

At the Monessen Library, several recruitment efforts were undertaken. An article was placed in the *Valley Independent*, a local newspaper. Two articles describing the project appeared in the literacy council newsletter. Signs were placed by project staff in community meeting places. The project coordinator visited one of the council's Laubach training sessions to speak to new tutors about the project. Letters were sent to eleven active tutors with students over the age of forty. The letter described the project and invited tutors to an informational meeting to hear more about the project. At that meeting, tutors working with the computer described their experiences. (A similar letter was sent to 26 tutors with students under the age of forty, inviting them to the same meeting). Of the eight active tutors in the Mid-Mon Literacy Council, five began participation in the project as a result of receiving the letter and attending the informational meeting. The other three were first heard about the project from the onsite coordinator (one also heard about the project at her final Laubach training session).

At Adult Literacy Action, similar recruitment activities occurred. The tutor/student coordinator mailed a letter to students, describing the project and asking them to participate. Students in a Job Training of Beaver County class, conducted by ALA, saw a demonstration of the Courseware and were invited to participate in the project. The tutor/student coordinator contacted, by phone, tutors with students over the age of forty who he believed would be interested in participating in the project. A letter was sent to tutors with students over the age of forty, describing the project and inviting them to participate and inviting them to an informational meeting where they could hear more about the project. Unlike the Monessen meeting, there were no tutors available to speak

about their experiences in the project. Instead, project staff intended to demonstrate the Courseware and discuss the project, but problems with the system prevented the demonstration. At ALA, three of the six active tutors were contacted about participating in the project by ALA staff. One was on the staff; the other two began participating after they received the letter describing the project and attended the informational meeting.

Thus, at Monessen Library, the most effective method of recruitment was the letter to tutors and the informational meeting where active tutors spoke about their experiences with the computer. At ALA, the most effective method of recruitment proved to be having ALA staff make contacts. The ability of prospective tutors to hear about other tutors' successful experiences in the project seemed to be a particularly effective method of recruitment.

Training Tutors to Use the Basic Courseware Modules

A total of twenty tutors attended at least one training session at Adult Literacy Action. Four attended an informational meeting that described the project (two out of these four eventually attended a training session). Six tutors at this site eventually started working with students. Twelve tutors attended at least one training session at the Monessen Public Library. Nine attended an informational meeting about the project (seven of these nine eventually attended a training session). Eight tutors eventually began working with a student. All tutors at both sites completed Laubach training before they began working in the project.

As the project progressed, it seemed helpful to offer multiple, brief training sessions to tutors, addressing individual needs. Because many tutors had no previous experience with computers, and because there

were great individual differences in how quickly tutors learned and retained information, training was offered to tutors individually or in small groups (2-3 people) in order to provide hands-on training. Basic computer concepts, such as identifying and learning names of components of the system, learning how to handle disks, and learning how to turn the computer on) had to be covered. Many tutors needed to hear this information multiple times. Training tended to become more individualized over time, and project staff began to provide more technical assistance, as tutors began to work with students and had very specific questions. Tutors met with project staff for anywhere from two to twelve training sessions.

Training Tutors to Use the Word Processing Module and the Process Writing Instructional Approach

At ALA, five tutors were trained in how to use the word processing module of the Courseware; four were trained in how to use the process writing approach. At Monessen Library, seven tutors were trained in how to use the word processing module; five were trained in how to use the process writing approach.

Tutors were instructed to go through the word processing module's help lesson in order to learn how to use the module, and were assisted by project staff in doing so. Project staff then demonstrated some ideas for how tutors could use the word processing module. Tutors were encouraged to try their own ideas.

Project staff discussed the writing process with tutors and distributed the Guidelines for Writing Instruction. Project staff and tutors role-played the instructional approach, with the staff person acting as the

tutor and the tutor acting as the student, in order to give tutors a feel for the instructional activities.

Providing Technical and Instructional Support to Tutors

As previously discussed, tutors continued to have technical difficulties with the computer system throughout the project. Site staff often could not provide needed technical assistance due to lack of familiarity with the Courseware and computer system. Project staff attempted to provide as much technical assistance to tutors as possible.

Tutors also needed instructional assistance throughout the project. For example, even though a copy of the Teacher's Manual for the Penn State Adult Literacy Courseware was made available to tutors at both sites, tutors often had questions about how they could sequence lessons in the Courseware modules. Site staff did not have a person with thorough knowledge of the Courseware that could provide instructional support. This hindered tutors development of creative ways to use the Courseware, especially related to lesson creation.

Site staff at Beaver Campus and tutors at both sites recommended that a manual to assist tutors in using the Courseware be developed. This development effort was undertaken during the project period. The Tutors' Guide for Using the Penn State Adult Literacy Courseware provides a thorough description of each module, its purpose, and the types of instructional activities that occur in lessons in the module. It is intended to be used along with the Teachers' Manual which provides technical instructions for how to use the computer and courseware disks. A copy of the Tutors' Guide for Using the Penn State Adult Literacy Courseware is included in Appendix M.

Sites planning similar project should have someone on staff who can provide needed technical and instructional assistance.

Survey of Contacted Tutors

A survey was conducted to determine why many tutors who had been contacted about the project did not begin working with students. Many of these tutors attended informational meetings about the project and/or training sessions. A questionnaire was designed to assess these tutors' level of awareness about and participation in the project. The questionnaire consisted of a series of short answer and multiple choice items. It was mailed to tutors at both sites who had been contacted by project staff sometime during the project. This section describes the results of this survey.

Adult Literacy Action. Thirty tutors were sent the questionnaire at the close of the project. These tutors had either been contacted by ALA staff by phone about the project, or had been sent letters in November, 1989, which described the project and invited them to participate. Some of them had participated in training sessions, but none had actually started to work with a student. Seventeen tutors mailed back the questionnaire. All but one respondent indicated that they were aware of the project before they received the questionnaire. Eleven out of seventeen said they had previous experience with computers. Six out of the seventeen indicated that they had some level of participation in the project (i.e., had gone to an informational meeting or at least one training session).

Two respondents were not and had not been paired with students when they heard about the project. However, one went to three training sessions while the other went to one training session. A third respondent

had just recently been paired with a student: She had not been paired with a student when she first heard about the project. None of these tutors had any previous experience with computers.

Two respondents that were paired with students said they were not interested in the project. Both said they were happy with the progress their student was making and did not feel the need to try an alternate instructional method. One respondent added that, although she had some minor experience working with computers, she felt nervous about using the computer as an instructional tool. She did not ask her student about participating in the project: she felt the student would not want to participate. The second respondent did not indicate whether or not he had asked his student about participating in the project. He did not have any prior experience with computers. It could be that for both of these tutors, lack of experience with the computer held them back from participating in the project.

One respondent did not participate because his student discontinued. The tutor went to two training sessions. He did have some experience with computers.

Three tutors did not participate because their students were not interested in the project. Two out of these three tutors had no experience with computers.

Six respondents said they were interested in the project, but did not participate for a variety of personal reasons (one of these tutors did go to an informational meeting). Three said that training sessions were at inconvenient times; two said that it was too far to travel and too inconvenient to come to the library to work on the computer, while three said they were busy with other commitments. None of these tutors asked

their students about their desire to participate in the project. One said she believed that her student would think it was too far and too inconvenient to go to the library to work on the computer. Another said she felt her student was not ready to work on the computer. All six of these tutors had experience with computers.

The final respondent is paired with a student. He went to three training sessions, but felt his student would not be interested in participating (he did not ask the student about participating in the project). This tutor had extensive experience with computers.

Mid-Mon Literacy Council. Thirty tutors were mailed the questionnaire at the end of the project. All of these tutors had been sent a letter describing the project and inviting them to participate, and/or had been visited by the project coordinator in their Laubach training classes where she informed them about the project and invited them to participate. Twenty tutors returned the questionnaires. All but one respondent indicated that they were aware of the project before they received the questionnaire. Some of them had participated in training sessions, but none had actually started to work with a student. Nine out of twenty said they had previous experience with computers. Nine out of the twenty indicated that they had some level of participation in the project (i.e., had gone to an informational meeting or at least one training session).

Four respondents were not and had not been paired with students when they heard about the project. However, one went to an informational meeting and a training session. A fifth respondent had just recently been paired with a student: She had not been paired with a

student when she first heard about the project. Three of these five tutors had some previous experience with computers.

One respondent that was paired with students said she was not interested in the project. She indicated that she felt nervous about using the computer as an instructional tool. She did not ask her student about participating in the project, but felt that the student would not want to participate, and that transportation to the library to work on the computer would be a problem for the student. She did not have any experience with the computer.

Two respondents did not participate because their students were ill. One went to an informational meeting, while the other attended twelve training sessions. One of these tutors had previous experience with computers.

Three tutors did not participate because their students were not interested in the project. Two went to an informational meeting; one attended six training sessions. Two out of these three tutors had some experience with computers.

Seven respondents said they were interested in the project, but did not participate for a variety of personal reasons (one of these tutors did go to an informational meeting). Six said they were too busy with other commitments; one felt that it was too far and too inconvenient to travel to the library to work in the computer; and one could not participate due to illness. None of these tutors asked their students about their desire to participate in the project. One said she believed that her student would think it was too far and too inconvenient to go to the library to work on the computer. Another said she felt her student was not ready

to work on the computer. Five of these seven tutors had no previous experience with computers.

The final respondent is paired with a student. She was interested, but thought that her student was not eligible for the project (the student was 22 years of age).

Summary. Responding tutors from ALA tended to have more experience with the computer than responding Monessen tutors -- 65% of the responding ALA tutors had used a computer before, while only 45% of the responding Monessen tutors had used a computer before they heard about the project. More of the responding Monessen tutors reported participating in the project to some extent, however: 45% reported some type of participation in the project (i.e., attending an informational meeting or one or more training sessions) while 35% of the respondents from ALA reported participating in these activities. Tutors from both sites reported a variety of reasons for not participating more. The most common response at both sites was that they were interested, but that other commitments kept them from participating more. Others mentioned the fact that the training sessions were at inconvenient times for them, and the fact that it was too far for them to travel to the library to work on the computer (three tutors from ALA gave this as a reason).

Activities of Local Advisory Boards

At each project site, a local advisory board consisting of community members was formed. These advisory boards guided project activities by providing literacy council volunteers with information about the employment outlook of the local region. This information can be used by the council to insure that their programs serve employment needs of

adult students. This section describes the activities and information provided by the local advisory boards.

At Beaver County Adult Literacy Action, Onsite Supervisor Nancy Woods recruited six local representatives from job training and career placement services, the vocational-technical school, and the literacy council to serve on the advisory board. At the Monessen Public Library and Mid-Mon Valley Literacy Council, twenty local representatives of business, industry, unions, job-training and employment and job placement services were identified as potential advisory board members. A letter was mailed to these individuals in late November, 1988, asking about their interest in serving on the advisory board. Fifteen individuals agreed to be on the advisory board. Nancy Woods, onsite supervisor at Beaver County Adult Literacy Action, worked with the project coordinator to develop a questionnaire, which focused on issues of interest. These issues included which jobs were in demand in the community, work-related materials used in these jobs, and basic skills needed by workers in these jobs. The questionnaire was distributed to members of the advisory board at Adult Literacy Action in October, 1989. In the first week of December, 1989, the questionnaire was mailed to fifteen Monessen community members who had, at the beginning of the project, indicated they would be willing to respond to questions. By the end of the project, ten responses had been obtained.

The questions included on the Advisory Board Questionnaire are presented in Appendix N. Responses from advisory board members at each site, by question, are presented in Appendix O.

Summary of Responses to Advisory Board Questionnaire

The majority of occupations mentioned by respondents as being in demand locally were entry level positions in eight domain areas. The domain areas, and number of respondents mentioning each, are listed in Tabie 1.

Table 1. Occupations in demand in western Pennsylvania and number of respondents mentioning each occupation.

Occupation	Number of Respondents Mentioning
Food Service	11
Health Care	11
Retail Sales	8
Clerical	4
Custodians/Cleaners	3
Computer Workers	3
Security Guards	2
Jobs with Small Businesses and Manufacturers	2

The following other occupations were mentioned by one respondent each: heavy equipment machine operators, electronic data processing repair specialists, day care workers (for children and the elderly), social service workers, and travel and tourism workers.

A wide variety of materials were listed by respondents as being materials that workers in these occupations would need to be able to read and write. Most often cited were the examples of work-related materials given to respondents on the questionnaire (i.e., manuals, memos, charts, work orders, and safety directions). Other than restating the examples, there was no clear consensus in the lists of work-related materials. Two respondents listed blue prints and two listed order forms. No other answer was given by more than one individual. The following were listed by one respondent: union regulations, personnel handbook, textbooks, inventory runoff sheets, time cards, telephone book, purchase orders, floor plans and diagrams. The responses reflect the wide variety of printed materials workers, even those at an entry level positions, most be able to read.

Telephone skills were listed by five respondents as oral communications skills that are necessary for workers in these occupations to have. Three respondents listed following directions, asking questions, and using good grammar. Also listed by one respondent each were the following: relaying menu selections, explaining a commodity to a potential customer, taking notes, placing orders, reading newspapers, public speaking, and taking shorthand. Many respondents answered this question with general responses, such as social skills, listening skills, or critical thinking skills.

Basic math and basic measurement skills were mentioned as needed mathematical skills. A few responses reflected mathematical skills necessary for specific occupations (using cash registers, making change, calculating sales tax, counting money, and calculating discounts

and markups. Also mentioned were three higher level math skills: algebra, geometry, and accounting.

General personal attributes (good work attitudes, good work habits, common sense, trustworthiness, flexibility and reliability), typing and filing, and ability to complete work application were listed as being other attractive skills and abilities of employees.

Three individuals suggested representatives from J.T.P.A. or the Job Service Office as being individuals who would know more about these specific occupations. Others named were local businessmen and representatives of various educational agencies.

Other Related Activities

This section describes dissemination and other development activities related to the project.

A journal article describing the courseware and the goals of the project was published in the Journal of Research on Education for Adult Learners, 1, 5-8. "Volunteer tutors' use of computer-assisted basic skills instruction with displaced workers" was presented at the Adult Literacy and Technology Conference in July, 1989. "Unemployed adults' use of the computer in learning to read and write" was presented at the International Reading Association's Conference on Adult and Adolescent Literacy in January, 1990. "Volunteer tutors and computer-assisted literacy instruction: Recruitment and training issues," was presented at the Adult Literacy and Technology Conference in July, 1990.

Guidelines were developed to help volunteer tutors develop individualized lessons for their students. Guidelines for Making New Lessons is a brief written guideline for tutors that was developed based on the directions in the Teachers' Manual for the Penn State Adult

Literacy Courseware. These Guidelines add to the step-by-step directions for creating lessons provided in the Teachers' Manual by providing an example of an appropriate short story and instructional sentences based on a wordset. Site staff at Beaver Campus and Monessen Public Library reviewed the Guidelines for Making New Lessons. A copy of the Guidelines for Making New Lessons is included in Appendix P.

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Appendix A. Questions on the Student Attitude Survey

1. Is it important for you to use the computer to learn to read and write?
2. Are you nervous about using the computer to learn to read and write?
3. Does using the computer in your classes make other people think more highly of you?
4. Is your family proud of you for learning how to use the computer in your classes?
5. Is the computer helping you learn to write better?
6. Do you read and write more often since you have been using the computer in your classes?
7. Would you be afraid to enroll in another reading and writing program that uses computers for instruction?
8. Is the computer helping you learn to read better?
9. Is learning to read from a computer more difficult for you than trying to learn from a book?
10. Do you feel confident or sure of yourself in using the computer to learn to read and write?
11. Would you prefer to have your tutor work with you without the computer?
12. Was it a waste of your time to learn how to use a computer for your classes?
13. Do you like using the computer for learning to read and write?
14. Do you like reading and writing better now that you have been using the computer to learn?
15. Is using the computer in your classes boring to you?

16. Do you like it that your tutor uses the computer for reading and writing instruction?

17. Is it a good idea for you to use the computer to learn to read and write?

18. Is learning to read and write on the computer interesting?

Appendix B. Responses to the Student Attitude Survey, Student by Item

	M. W.	M. R.	C. Y.*	W. P.*	F. G.*	E. N.*
1.	y	y	y	y	my	y
2.	my	n	n	y	y	n
3.	y	my	n	y	n	y
4.	y	y	my	y	n	y
5.	y	y	y	my	y	y
6.	my	y	y	y	y	y
7.	n	n	y	n	y	y
8.	y	y	y	y	y	y
9.	n	n	n	y	y	n
10.	y	y	my	mn	n	y
11.	n	n	my	y	y	n
12.	n	n	n	n	n	n
13.	my	y	y	y	my	y
14.	y	y	y	y	my	y
15.	y	n	y	y	mn	n
16.	-	y	y	y	my	y
17.	y	y	y	y	my	y
18.	y	y	y	y	y	y

* denotes a student age 36 or older

y = yes

n = no

my = maybe yes

mn = maybe no

Appendix C. Summary of Responses to the Student Attitude Survey, By Question

The following summarizes the responses to the attitude survey of six students, from both sites, who worked with the computer for at least five hours. Two students worked with the computer less than five hours. Their responses are not included. Responses from each student were obtained at the conclusion of the project. Possible responses to each question included: yes; maybe yes; no; or maybe no. Tutors read questions to the students and recorded the students' responses.

1. Is it important for you to use the computer to learn to read and write?

Five students responded "yes"; one responded "maybe yes". By the end of the project, students agreed that the computer was a helpful tool in literacy learning.

2. Are you nervous about using the computer to learn to read and w ite?

Three students responded "no"; two responded "yes"; and one responded "maybe yes". About half of the students still felt nervous about using the computer at the end of the project.

3. Does using the computer in your classes make other people think more highly of you?

Three students responded "yes", one responded "maybe yes" and one responded no. For the most part, students believed that use of the computer was something that others respected.

4. Is your family proud of you for learning how to use the computer in your classes?

Four students responded "yes"; one responded "maybe yes"; and one responded "no". Most students believed that their use of the computer was something their families respected.

5. Is the computer helping you learn to write better?

Five students responded "yes"; one responded "maybe yes". Students almost unanimously agreed that using the computer was helping to improve their writing skills.

6. Do you read and write more often since you have been using the computer in your classes?

Five respondents said "yes"; one said "maybe yes". Again, students almost unanimously agreed that they used literacy skills more since they started in the program.

7. Would you be afraid to enroll in another reading and writing program that uses computers for instruction?

Three students responded "yes"; three responded "no". Half of the students were unsure about enrolling in another computer-based literacy program.

8. Is the computer helping you learn to read better?

All students agreed that the computer was helping them learn to read better.

9. Is learning to read from a computer more difficult for you than trying to learn from a book?

Four students responded "no"; two responded "yes".

10. Do you feel confident or sure of yourself in using the computer to learn to read and write?

Three students responded "yes"; one, "maybe yes"; one, "maybe no"; and one, "no". At the end of the project, half of the students were not confident of their ability to use the computer.

11. Would you prefer to have your tutor work with you without the computer?

Three said "no"; one, "maybe yes"; two said "yes".

12. Was it a waste of your time to learn how to use a computer for your classes?

All students responded "no".

13. Do you like using the computer for learning to read and write?

Four responded "yes"; two responded "maybe yes". Most students enjoyed using the computer in literacy classes.

14. Do you like reading and writing better now that you have been using the computer to learn?

Five responded "yes"; one responded "maybe yes".

15. Is using the computer in your classes boring to you?

Three responded "yes"; one, "maybe no"; two, "no". Students reported that they found the Courseware boring.

16. Do you like it that your tutor uses the computer for reading and writing instruction?

Four responded "yes"; one responded "maybe yes" (one student did not respond).

17. Is it a good idea for you to use the computer to learn to read and write?

Five students responded "yes"; one, "maybe yes".

18. Is learning to read and write on the computer interesting?

All students replied "yes"; this conflicts with their responses to question 15, "Is using the computer in your classes boring to you?"

One student completed the attitude questionnaire two times; at retesting, when he had completed 16.5 hours of work on the courseware, and again at the end of the project (responses reported above). His response to one question changed, from "no" to "yes", on question 7: "Would you be afraid to enroll in another reading and writing program that uses computers for instruction?"

Appendix D. Results of Student Closeout Survey, By Question

A closeout survey was distributed to students, at the end of the project, in order to further investigate their reactions to the computer and courseware. Eight students filled out closeout surveys. The responses of six, who had used the courseware at least five hours, are included here. The responses are grouped by question.

What three things did you like best about working with the computer?

M.R. : (The) echo told me how to communicate with the computer. I learn(ed) how to develop my sentences by using the word processor. I like(ed) the word game.

W. P.: Keys; something new; it's fun.

C. Y.: Games

E. N.: Module 5 -- word families; writing sentences on (the) word processor; games

M. W.: I like it

F. G.: (The) on screen program; (it) teaches better than books

What three things did you like least about working with the computer?

M. R.: The computer is very slow. The echo won't work on the word game.

W. P.: The computer makes too many mistakes. It's hard to see the letters. It's slow.

C. Y.: Technical problems

E. N.: --

M. W.: (It's) too slow. The voice.

F. G.: The echo

How does working with the computer make you feel?

M. R.: Very good, I am learn(ing) so much from the computer.

W. P.: The computer makes you feel good.

C. Y.: I like it

E. N.: (It) makes me read more. (I) like it. It makes me feel good. It helps you concentrate on numbers.

M. W.: Good. (It) helps me improve reading.

F. G.: Like a dummy.

Have your feelings about the computer changed since you first began working with it? If so, how?

M. R.: I feel more confident in the computer.

W. P.: Yes. It's not as easy as I thought.

C. Y.: Can't say. Just starting.

E. N.: Yes. (I) was nervous at first about using it -- now like it alot.

M. W.: (I feel) more competent now.

F. G.: No.

What would you tell another adult student like yourself about working on the computer?

M. R.: It's fun to work on and it tell(s) you a little about life.

W. P.: You can learn on the computer.

C. Y.: --

E. N.: Try it. Maybe he'll like it too.

M. W.: (It's) something one can learn on.

F. G.: It is fun.

Would you recommend that other adult students use the computer to help them learn to read and write better?

All eight students, no matter how long they had been working with the computer, said yes.

Appendix E. Number of Words Per Draft in Student Writing Samples

Table 1. Number of words per draft in M. R.'s writing.

Story	Draft 1	Draft 2	Draft 3	Draft 4
1	39	53	85	88
2	39	39	92	
3	53			

Table 2. Number of words per draft in E. N.'s writing.

Story	Draft 1	Draft 2	Draft 3	Draft 4
1	24			
2	25	26		
3	55			
4	75			

Appendix F. Changes in Drafts of Student Stories

M. R.'s changes -- story 1

draft 1-2: took out comma; added two sentences

draft 2-3: added three sentences

draft 3-4: added a phrase

M. R.'s changes -- story 2

draft 1-2: took out a dash; corrected misspelling.

draft 2-3: six sentences added

E. N.'s changes -- story 2

draft 1-2: ran two words together (had previously been correct); misspelled a word (had been spelled correctly); corrected capitalization of six words; corrected spelling of two words; added two periods; incorrectly added " 's"; correctly added " 's"; added a space between two words.

Appendix G. Questions on the Tutor Attitude Survey

1. Is it important for you to use the computer as an instructional aid?
2. Are you apprehensive about using the computer as an instructional aid?
3. Does the computer help you teach basic reading skills effectively?
4. Does the computer help you teach writing effectively?
5. Does the computer help you keep track of your student's progress effectively?
6. Does using the computer to teach reading make too much work for you?
7. Does using the computer to teach writing make too much work for you?
8. Do you feel confident or sure of yourself in using the computer as an instructional aid?
9. Do you view the ability to use the computer for the purposes of instruction as a skill that is beneficial to you?
10. Do you view the ability to use the computer for the purposes of record keeping as a skill that is beneficial to you?
11. Does using the computer as an instructional aid depersonalize your tutoring sessions?
12. Do you like using the computer to teach basic reading skills?
13. Do you like using the computer to teach writing?
14. Does using the computer as an instructional aid help your student make progress in reading?
15. Does using the computer as an instructional aid help your student make progress in writing?
16. Are you proud to use the computer as an instructional aid?

17.Do others respect you for using the computer?

18. Do you or your family own a computer?

19. If a computer was/is available to you, would you/do you use it for your own needs on a regular basis?

Appendix H. Responses to the Tutor Attitude Survey, Tutor by Item

	B. W.	J. D.	J. C.	C. M.	B. N.	D. E.	C. R.
1.	y	mn	y	n	y	mn	n
2.	n	n	n	n	n	my	n
3.	ny	my	y	my	y	mn	y
4.	my	my	n	n	y	n	y
5.	y	my	y	y	my	y	y
6.	n	n	n	mn	my	n	n
7.	n	n	n	my	n	my	n
8.	my	y	y	y	y	mn	y
9.	my	y	y	y	y	mn	y
10.	my	y	my	y	my	y	n
11.	n	n	n	n	n	n	n
12.	my	my	y	n	my	mn	y
13.	my	my	mn	n	y	n	y
14.	my	my	my	n	y	mn	y
15.	my	my	n	n	y	n	y
16.	my	y	y	my	y	mn	n
17.	my	y	y	mn	-	my	y
18.	n	y	n	y	n	n	n
19.	y	y	y	y	y	y	n

y = yes

n = no

my = maybe yes

mn = maybe no

Appendix I. Summary of Responses to the Tutor Attitude Survey, By Question

The following are the responses to the attitude survey of seven tutors, from both sites, who worked with the computer for at least five hours. Six tutors who completed attitude surveys worked with the computer less than five hours. Their responses are not included. Responses from each tutor were obtained at the conclusion of the project. Possible responses to each question included: yes; maybe yes; no; or maybe no.

1. Is it important for you to use the computer as an instructional aid?

Four responded "yes"; two responded "maybe no"; while one responded "no". At the end of the project, over half of the tutors felt strongly in favor of using the computer as an instructional aid.

2. Are you apprehensive about using the computer as an instructional aid?

Six out of seven tutors responded "no"; one responded "maybe yes".

3. Does the computer help you teach basic reading skills effectively?

Three tutors responded "yes"; three, "maybe yes"; one responded "maybe no". Tutors were uncertain, at the end of the project, that the computer helped them teach basic reading skills effectively.

4. Does the computer help you teach writing effectively?

Two responded "yes"; two, "maybe yes"; three responded "no". The two tutors who frequently assisted their students in using the word processor to write text responded "yes".

5. Does the computer help you keep track of your student's progress effectively?

Five responded "yes"; two, "maybe yes".

6. Does using the computer to teach reading make too much work for you?

Five responded "no"; one, "maybe no"; and one, "maybe yes".

7. Does using the computer to teach writing make too much work for you?

Five responded "no"; two, "maybe yes".

8. Do you feel confident or sure of yourself in using the computer as an instructional aid?

Most agreed with this statement. Five responded "yes"; one, "maybe yes"; and one, "maybe no".

9. Do you view the ability to use the computer for the purposes of instruction as a skill that is beneficial to you?

Again, most agreed with this statement. Five said "yes"; one, "maybe yes"; and one, "maybe no".

10. Do you view the ability to use the computer for the purposes of record keeping as a skill that is beneficial to you?

Tutors were uncertain about this. Three said "yes"; three, "maybe yes"; one, "no".

11. Does using the computer as an instructional aid depersonalize your tutoring sessions?

Tutors unanimously disagreed.

12. Do you like using the computer to teach basic reading skills?

Two responded "yes"; three, "maybe yes"; one, "maybe no"; and one, "no".

13. Do you like using the computer to teach writing?

The two tutors who had their students write text frequently responded "yes". Two said "maybe yes"; one, "maybe no"; two said "no".

14. Does using the computer as an instructional aid help your student make progress in reading?

Two responded "yes"; three, "maybe yes"; one, "maybe no", and one, "no".

15. Does using the computer as an instructional aid help your student make progress in writing?

Again, the two tutors who frequently used the word processor with their students to write text responded "yes". Two other said "maybe yes"; three said "no".

16. Are you proud to use the computer as an instructional aid?

Four responded "yes"; two said "maybe yes"; one said "maybe no".

17. Do others respect you for using the computer?

Three responded "yes"; two, "maybe yes"; one, "maybe no"; one did not respond.

18. Do you or your family own a computer?

Two said "yes"; five said "no".

19. If a computer was/is available to you, would you/do you use it for your own needs on a regular basis?

Six responded "yes"; one responded "no".

One tutor completed the attitude questionnaire two times; at her student's retesting, when he had completed 16.5 hours of work on the courseware, and again at the end of the project (responses reported above). Her responses to six questions changed. On questions 3 (Does the computer help you teach basic reading skills effectively), 4 (does the computer help you teach writing effectively), and 5 (Does the computer

help you keep records of your student's progress effectively), her responses changed from "maybe yes" to "yes" . On questions 10 (do you view the ability to use the computer for the purposes of record keeping as a skill that is beneficial to you) and 19 (if a computer was available to you, would you use it for your own needs on a regular basis) her responses changed from "yes" to "no". On question 11 (Does using the computer as an instructional aid depersonalize your tutoring sessions), her response changed from "maybe no" to "no".

Appendix J. Results of the Tutor Closeout Survey, By Question

A closeout survey was distributed, at the end of the project, to thirteen out of fourteen tutors who had worked with students at some time during the project period. One tutor had moved from the area and could not be contacted. Twelve tutors filled out closeout surveys. The purpose of the questionnaire was to further investigate tutors' reactions to the computer and courseware. The responses of six, who had used the courseware at least five hours, are included here. The responses are grouped by question.

What modules did you use most often? Why?

C. R.: 5

B. N.: 6; my student seemed too advanced for the other modules and so we used the word processor to help develop writing skills.

J. C.: 5; there was not enough time to use the others.

C. M.: 2 and 6

J. D.: 2; chance

B. W.: 6; satisfied the knowledge of my student

What modules did you use least often? Why?

C. R.: --

B. N.: 1 - 4; student found them too slow. I believe he was too advanced.

J. C.: --; no time

C. M.: 4; it did not interest my student

J. D.: 3; time

B. W.: --

What modules did you like best? Why?

C. R.: 5 and 6; --

B. N.: 5 (the games) and 6

J. C.: 5; liked family grouping

C. M.: none; hard for my student to understand

J. D.: --

B. W.: 6

What modules did you like least? Why?

C. R.: --

B. N.: 1 - 4; my student found them too slow. I believe he was too advanced.

J. C.: --; no time

C. M.: --

J. D.: --

B. W.: 2

What three things did you like best about the computer software?

C. R.: module 5 -- it helped build vocabulary; it helped student write sentences; you could get a print-out of the work done.

B. N.: it stimulated the student's eye-hand coordination; it helped to encourage student typing; it helped to encourage student writing

J. C.: it teaches words; it used words in sentences; student enjoys using computer and is anxious to answer correctly.

C. M.: --

J. D.: the material was relevant to adult interests; it allowed the student to learn "bigger" (three-syllable) words; material varied

B. W.: it varies as to type (module)

What three things did you like least about the computer software?

C. R.: had trouble getting printer to work;

B. N.: too slow; not enough to choose from

J. C.: voice; moved too slowly; voice was not working twice

C. M.: echo; limitations of modules; poor quality of word processor

J. D.: the lessons that we used did not seem to build on one another; the programs were very slow; the echo was not easily understood

B. W.: the speed

How does working with the computer make you feel?

C. R.: Good. I feel good about it because my student is learning to spell and write sentences. Improved his reading skill.

B. N.: More confident in using the computer as a teaching aid. Overall I feel good about it.

J. C.: It doesn't take the place of our written lessons, but is an added asset.

C. M.: tired

J. D.: I don't know that working with the computer makes me feel anything one way or the other.

B. W.: At least you know what the young people are talking about.

Have your feeling about the computer changed since you first began to work with it? If so, how?

C. R.: --

B. N.: --

J. C.: I still enjoy working with the computer, but feel the software could be improved to work a little faster, and change the voice.

C. M.: No

J. D.: I had hoped for a "quick fix," and have become quite aware that there is none...

B. W.: No

Has working with the computer affected your student? If so, how?

C. R.: It has a very positive affect on both of us -- in terms of student's confidence and learning.

B. N.: Yes, my student has benefitted from use of the computer. He writes paragraphs often in preparation for writing on the word processor. He is comfortable with the computer and looks forward to using it.

J. C.: It seems to make him feel more confident.

C. M.: No

J. D.: We were both very enthusiastic at first. He was even using his home computer (which he had not used prior to his introduction to this program). However, it seemed to take forever to switch lessons or bring

"up" additional material. He actually verbalized an interest in computer school.

B. W.: He enjoys it.

Do you have any other impressions about using the computer that you would like to share?

C. R.: Student is more self-confident.

J. C: It's a big help in teaching. My student enjoys working on it. It gives him an incentive to learn.

J. D.: Our lessons were only 1 and 1/2 hours long -- two times a week. We found that we could accomplish more, in the given time, using the Laubach method.

B. W.: I think if we had started to use the computer when we started to use the books, it would have gone much better and faster.

Appendix K. Tutor Guidelines for Writing Instruction

1. **Prewriting. Students gather information, experiment with ideas, choose a topic.** This will be done orally by the student and tutor. Take a few minutes to talk about potential topics. You may want to list them on the computer, print them out, and keep them as a record. Use this time before writing to get to know your student. You will soon have some idea of what his or her interests are. You may want to keep note of his or her interests, and make some suggestions for potential topics on days that the student is having trouble coming up with a topic.

2. **Drafting. Students write a first draft.** The object here is for the student to get his or her thoughts down on paper. Spelling, sentence structure, and grammar are not important at this point. It is difficult not to do so, but do not correct the student's spelling or sentence structure at this time. If students have trouble typing themselves, try having them tell you what they want to write while you type it in the computer. If they ask for help with spelling or sentence structure, tell them that there will be plenty of time later to work with these aspects of the writing. Reinforce the idea that what is important now is getting their words down on paper. The students will have some trouble with this in the beginning. Their prior experiences with writing have been that they have one chance to do it, and it is either right or wrong. It may take some time for them to trust your statement that spelling does not count right now.

3. **Sharing. The writers read their pieces aloud to the tutor.** Print out the writing. Have the student read the writing aloud. Question

the student about the piece of writing. Ask question that will get the student to give you more information related to the piece. Questions and comments you pose will be used by the writer to clarify and expand the written work.

4. Revising. Based partly on feedback, the students expand their ideas, clarify meanings, reorganize information. They now can take some time to make changes and additions to the written piece You should still stress getting information down on paper rather than correct spelling and structure. If students insist on working on mechanics such as spelling or grammar in early revisions, encourage them to do as much of their own editing as possible before you give assistance (see "editing" below).

The student should go through the writing/sharing/revising process several times. The student will let you know when the piece is finished. At some point he or she may not wish to make any changes, and through questioning you may find out that the student has reached his or her goal for the writing.

5. Editing. The students focus on eliminating mechanical and grammatical errors. Once students have gone as far as they can with with the writing, they are ready to work on editing the piece. Spelling, punctuation, and grammar now become the focus. Students may edit in preparation for the next step, publishing. Encourage students to do as much of their own editing as possible. If spelling is a problem for the student, for example, you may ask him to circle words he thinks he needs

help spelling. Once he has done the underlining, then provide assistance. If punctuation is a problem for the student, you may ask her to read her work aloud and mark boxes where there may be a need for punctuation. Once she has gone through it, marking all she can, you may provide some assistance. Then, have her read it once again, using the punctuation marks you have put in, to determine if they give the meaning she wants. If grammar is a problem, you may ask the student to draw lines under the places where he thinks the language does not sound right. Then, provide assistance. In these examples, the students see how conventional punctuation, spelling, and grammar are used to provide meaning. They see the need for these conventions in cases where the problem is important to them. At the same time, they retain control of their writing.

6. Publishing. Students share their work with other students. Students should be encouraged to publish some of their writing to share with other students or take home to show family and friends. The final printed version of the writing may be put into a report binder or covered with another sheet of paper and stapled. The title, and possibly the students first name if he or she does not object, should be written on the front. Information about the student who published the writing may be included on a page at the beginning or end of the book. Published writings should be kept by the computer and students should be encouraged to read each other's work. Students may be interested in reading the writings of others who have things in common with them. They may also want to ask questions or make comments about another student's writing. Reading the writing of other students may help them

identify topics that are important to them. Getting comments on their work from other students may help them improve as writers. You may wish to give the student the feeling of being published by making their first two or three pieces into booklets. As time goes on, you and the student will become more selective about the work that will be published, and fewer pieces will be published. It is important to add at this point that the writing does not need to be perfect to be published. You have already worked with the student to make the changes in grammar, spelling and punctuation that he or she can make. Forcing too many changes on the student that he or she would not make if left alone will make the student lose responsibility for the work.

Other Important Notes

Students should try to work on writing for a few minutes during every session. You should keep a folder with drafts of the student's writing in it. This will allow them to see the progress they have been making. They may want to go back to a piece of writing after they have not worked on it for some time and make more changes on it. They may even want to go back to a published work and correct an error after some time has passed.

Appendix L. Program Manual.

Program Manual for

Older Displaced Workers Write to Read: A Computer-Assisted, Work-Related Basic Skills Program Using the Process Approach to Writing

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Program Manual for Older Displaced Workers Write To Read: A Computer-Assisted, Work-Related Basic Skills Program Using The Process Approach To Writing

Introduction

There is currently much discussion about the literacy needs of the American workforce. Employers are finding that many workers do not have the reading and writing skills needed on jobs. They are turning to adult educators for help. As a result, literacy providers are seeking ways to instruct adult literacy students in the types of reading and writing skills that will help them get and keep jobs.

The purpose of this manual is to assist volunteer literacy tutors in setting up programs that teach job-related reading and writing skills to adult students. Two volunteer literacy programs in western Pennsylvania have set up model programs which teach job-related reading and writing skills to adult students. These programs were developed as part of the Older Displaced Workers Write to Read Project, funded by the National Adult Education Discretionary Program of the U. S. Department of Education. The experiences of volunteer tutors at these two literacy programs in setting up the model programs form the basis for the suggestions presented in this Program Manual. Two kinds of suggestions are discussed: 1) how to set up a computer-based tutoring program; and 2) how to implement job-related vocabulary and writing instruction with or without a computer.

A computer software package, developed by the Institute for the Study of Adult Literacy at Penn State University, is the foundation of the model programs. This software, called the Penn State Adult Literacy Courseware, can be used to create instruction in job-related reading and writing. Use of the computer is especially appropriate for writing instruction, because it can overcome difficulties associated with student's ability and willingness to revise their own writing. Even though the model programs are computer-based, many of the suggested activities can be used by tutors and teachers who do not have access to a computer. Adaptations for those who do not have access to a computer for instruction will be suggested.

Description of the Original Program

The Older Displaced Workers Write to Read Project was developed during the period from October 1, 1988, through March 31, 1990, at Adult Literacy Action of Penn State Beaver Campus, and the Mid-Mon Literacy Council, based at the Monessen Public Library. An Apple IIGS computer and the Penn State Adult Literacy Courseware were placed at each site, purchased by funds from the National Adult Education Discretionary Program of the U. S. Department of Education. (The approximate cost of setting up a similar system is $2,000).

The Penn State Adult Literacy Courseware consists of six modules. One module provides an introduction to the computer; three instructional modules provide instruction in recognizing picturable and non- picturable words; one module provides instruction in recognizing words commonly found on a variety of application forms (for

example, *disability*, *dependents*, *references*, and *citizenship*); and a word processing module allows students to enter text into the computer, edit it, and print it. The computer "speaks" to the student, providing directions and reading aloud information on the screen. This is accomplished with a device, known as a speech synthesizer, attached to the computer. The software can be used to create new lessons tailored to individual students. A student may be interested in the carpentry profession, for example. Ten vocabulary words he or she would need to know in the carpentry field can be selected to form the basis for a new lesson. A tutor develops sentences using each of the ten target words. The tutor then selects an option on the computer screen to "create a new lesson." The tutor follows a series of steps to create a lesson which includes the target words and sentences. The modules are designed to be used by adult students reading below the sixth grade level, although the application forms module and the word processing module can be used by more advanced students.

Volunteer tutors working in the test sites were trained in how to use the basic courseware. They worked with their students on modules that met their students' needs and interests. Many tutors were also trained in how to use the word processing module of the courseware. They helped students practice general interest and job-related writing.

Why Set Up Such a Program?

Adult basic educators are well aware of the need to demonstrate to adult students that literacy instruction is useful and provides improvement in some aspects of their lives. Providing literacy instruction

than will help adult students obtain and keep jobs does this. Research has shown that providing job-related literacy instruction also benefits general literacy skills (Stuart, 1988). Providing instruction via the computer is another way of engaging adult learners. Computer-assisted instruction (CAI) provides an alternative to traditional methods of instruction, which have failed many adult students. Combining job-related literacy instruction with computer-assisted instruction (CAI) allows adult students to become familiar with computers, which are becoming an increasingly common tool in many aspects of life, while they are developing literacy skills. For these reasons, many programs may be interested in setting up a program modeled after Older Displaced Workers Write to Read.

Outline of the Program Manual

Before programs commit to purchasing a computer and the Penn State Adult Literacy Courseware with the intent of setting up a computer-based job-related literacy program based on Older Displaced Workers Write to Read, there are some issues to consider. The first part of the Program Manual will list and discuss these issues. Steps for setting up and maintaining such a program will be discussed next. Finally, adaptations for programs who do not have the resources to purchase a computer will be discussed.

Determining the Feasibility of a Computer-Based, Job-Related Literacy Program

Based on the experiences of Mid-Mon Literacy Council and Adult Literacy Action (ALA), there are several questions that program directors should consider and answer for themselves before they decide to set up the computer-based program within their existing programs.

1. Can tutors and students be encouraged to work with the computer?

Many tutors and students will welcome the computer as an alternative to traditional methods of instruction. There are several ways to get tutors interested in the computer and software. Program administrators should attempt to familiarize tutors with the courseware. Once tutors become somewhat familiar with the software, they can assess its appropriateness for use with their students. Administrators can hold sessions in which they demonstrate the software to tutors, allowing them to ask questions and work with the computer themselves. They should then provide access to the computer and software so tutors can drop in and try out the software themselves, or can drop in with their students to show the courseware to the student. They can also arrange for tutors who are successfully using the courseware with their students to discuss their experiences with the computer, perhaps at a program meeting.

While it is possible to pair new students with tutors for the sole purpose of working on the computer together, in the experience of the two test programs, those pairs who had been working together before they started on the computer tended to have more success. It may be too

stressful for tutors and students to begin working with a new person and a new instructional method at the same time.

2. How and where can the computer be set up permanently?

There should be an area where the computer can be set up permanently for tutors and students to use as needed. Ideally, it should be an area where those working at the computer have some privacy, while those working around them are not disturbed. The speech synthesizer need not disturb others working near the computer: headphones can be attached to the synthesizer so that only the student can hear it. Programs should consider the availability of space for such a set-up. One of the test sites, short on space, did not have an area which could permanently house the computer. It was placed on a cart and had to be moved into an available room when tutors wished to use it. Many times, connecting wires came loose and the computer would not work. Time had to be spent finding and correcting the loose connection. In addition, the fact that the tutors had to make arrangements to have the computer moved into a room every time they wished to use it placed one more burden on them and discouraged them from using the computer with their students.

3. How will tutors and students find transportation to the site?

Tutors and students will have to find transportation to the site where the computer is located. Can arrangements for bus connections or carpooling be made? In the pilot programs, tutors and students met at many different sites across the community, usually at a location convenient for both the tutor and student. They were willing to come to the council regularly to work on the computer. At one test site, many tutors and students who were interested in using the computer live so far

away from the council where the computer was located that it was not convenient for them to travel to the site to work on the computer.

4. How will ongoing training and technical assistance be provided to the tutors?

The courseware offers tutors and students many learning activities and special features, such as the lesson creation capability. Tutors should be made aware that it is best for them to spend some time familiarizing themselves with the courseware before they introduce their students to it. In addition, they should be told that it may take considerable time before they thoroughly learn the various parts of the courseware and how to use them. This may save some frustration on the part of tutors in the early stages of using the courseware. It took several months for the tutors at the test sites to learn about the various options they could select and how to use them.

For these reasons, training may have to be offered to tutors at a slow pace and over a period of several weeks. Once the training period is complete and tutors have started to work with students, they will need technical assistance. Someone must take responsibility for training tutors and providing technical assistance to them once they begin working with students. The person who provides training and/or technical assistance to tutors should have the time and be willing to gain a thorough working knowledge of the courseware in order to provide the greatest amount of assistance to tutors. It is also possible to have tutors assist other tutors; some tutors will learn how to use the software quickly and may be willing to serve as helpers for the others. At the test sites, training was offered to tutors in small groups (2-3 people) in order to provide hands-on training Many tutors attended multiple training

sessions until they felt comfortable enough to experiment with the software on their own. Many needed technical assistance even after they had been working with the courseware for six months; for example, they needed to be reminded of computer start-up procedures, how to access a test or game, how to use the printer to print student writing, etc.

5. Who will provide instructional support and advice to tutors?

Tutors may express the need to talk about their students' progress and receive advice about which modules are appropriate to use with their students. They will also need a person who can assist them in developing lessons or p[illegible]e ideas for using the word processor. The test sites found that tutors needed such assistance.

6. Does the availability of the computer match the tutors' needs?

Only one tutor/student pair can work with the computer at one time, usually in one to two hour time blocks. Consider how you will schedule tutors and students to work on the computer. Do the pairs meet during the day or in the evening? If tutors work in the evenings, will this pose a problem as far as giving them access to the computer? Tutor training needs should be considered also. Usually two to three tutors can be trained on a computer at one time: trying to train more tutors than this at once creates problems. If you have many tutors interested in learning how to use the computer, but only one computer is available for training, try to think ahead to the implications of this -- for example, will tutors lose their enthusiasm for the program if they cannot begin training right away?

Setting Up a Computer-Based, Job-Related Literacy Program

Based on the experiences of Mid-Mon Literacy Council and Adult Literacy Action (ALA), the following are suggestions for setting up and maintaining programs.

Setting Up a Work Area

The importance of setting up a work area has already been discussed. A functional work area can be set up very easily. One of the test sites set up a work area which housed the computer, monitor, disk drives, speech synthesizer, keyboard and printer. It consisted of a computer table with two chairs, sectioned off with two room dividers. For security reasons, the hardware was wired to the computer table. A file cabinet, which housed student records, disks, extra paper, etc., was placed next to the computer table. This set-up worked very well: all of the materials the tutors needed could be kept near their work area.

Recruiting Tutors and Students

Tutors and students can be recruited in many ways. Descriptions of the project which state that interested tutors and students should contact the program can be placed in newspapers or the program newsletter (one of the test sites started a student page in the newsletter which can be used as a way to give students information about the project). Television or radio spots can be done, or signs can be placed

throughout the community. At the pilot sites, the project coordinator visited Laubach training sessions to tell tutors about the project. In addition, program staff sent letters describing the project and made calls to tutors they believed would have particular interest in using the project. A very successful method of recruiting tutors involved having tutors who were using the computer successfully come to council meetings to share their experiences with the computer and answer other tutors' questions about the project.

Providing Training and Technical Support to Tutors

Plan to have several short training sessions (maximum length: about two hours) with one to three tutors attending each session. Provide hands-on training: let tutors work on the computer from the very beginning (this is why it is essential to work only with a few tutors at one time). Tutors will not learn to use the computer by passively observing someone else use it. The contents and pace of the training will vary with the experience your tutors have had. If tutors have not worked with a computer before, you should point out and describe the hardware components (computer, monitor, keyboard, disk drives, etc.) early in the training. How quickly the tutors will become acclimated to the computer and begin to obtain an overall feel for using the computer depends on the individual tutors involved. Some tutors will feel comfortable experimenting on their own from the very beginning; others will need much more guidance. Tailor the contents of each training session to the tutors' individual needs.

The trainer will have to have a thorough knowledge of the courseware before he/she trains tutors. The best method for training tutors to use the basic lesson modules (1-5) is to demonstrate the activity, then allow the tutors to try it themselves until they feel comfortable.

Training Tutors to Use the Word Processing Module

Have tutors go through the word processor help lesson (see Teacher's Manual for information on how to access the help lesson). Then demonstrate some ideas for how tutors can use the word processor, allowing them to try out their own ideas.

Suggestions for Word Processor Activities

The following are some suggested word processor activities. Many of these are adapted from the *Teacher's Manual for the Penn State Adult Literacy Courseware.*

Spelling activities.

1. The the tutor types in sentence with a target word underlined. Some of the letters of the target word are missing. The student is asked to fill in the correct letters.
2. The tutor types in scrambled words: the student is asked to unscramble the words.
3. The tutor types in sentence with missing target word, and three choices for how the target word might be spelled. The student chooses target word with correct spelling and types it into the blank.

4. The tutor dictates words; the student types them in.

Word recognition activities.

The tutor types sentence with a word missing: the student is given three choices with which to complete the sentence. The student types the correct word into the blank.

Editing activities.

1. The tutor types in a scrambled sentence: the student unscrambles the sentence.

2. The tutor types in sentences or a paragraph with errors. The student is asked to correct the errors.

Comprehension activities.

1. The tutor reads a passages aloud to the student (or student reads the passage silently). The student uses the word processor to type a summary of the passage.

2. The tutor types in a passage containing a problem word or inconsistent sentence. The student is asked to correct the problem.

Composition activities. (In these activities, tutors and students type, edit, and print text, following the writing process model described in the next section).

1. The tutor reads a story aloud (or student reads story silently). The student is asked to compose an ending to the story.

2. The student writes sentences.

3. The student writes about daily events at the workplace, or develops stories based on his or her life experiences.

4. The student develops notes, for example, a note to her supervisor asking for a day off.

5. The student develops lists: for example, a "to do" list for the workplace.

6. The student writes letters: for example, a cover letter to accompany a resume.

The Writing Process Model

Many researchers who study composition describe it as a complex process that occurs in a series of stages. The stages most commonly described (see, for example, Graves 1983) are as follows:

1. Prewriting - The writer gathers information, experiments with ideas, chooses a topic, and may outline or do other planning.
2. Drafting The writer gets ideas down on paper. Spelling, sentence structure and grammar are not important at this point.
3. Sharing - The writer and another person read the draft. Questions asked about the draft and suggestions made by the other person will help the writer clarify and expand the piece.
4. Revising - Based on rereading and feedback from others, writers expand ideas, clarify meaning, and reorganize information.

Note- Writers go through the writing/sharing/revising process several times, refining content until the goal of the writing is reached.

5. Editing - The writer edits for spelling, punctuation, and grammar.
6. Publishing - Once the writer is satisfied with the piece of writing, it is made available for others to read; for example, students may be encouraged to make their written work available to other students

Many people who study writing and how people learn to write believe that tutors and teachers should capitalize on this writing process model in order to help students develop composition skills. One of the goals of the Write to Read project was to assist tutors in using the process

model of writing to help their students develop writing skills. Tutors were told about the stages of the writing process and were given suggestions about how to facilitate the development of their student's writing skills.

Training Tutors to Use the Process Model to Teach Writing

Tutors were given a handout which described the stages of the writing process and provided suggestions for writing instruction. The content of the handout is reproduced on pages 16 - 19. For a better idea of how tutors can facilitate help students develop writing skills, take a look at those pages now.

Three things are important to note about this instructional approach:

• Students work on many drafts of the composition before it is "completed." Each draft is an improvement over the earlier draft.

Guidelines for Writing Instruction

1. **Prewriting. Students gather information, experiment with ideas, choose a topic.** This will be done orally by the student and tutor. Take a few minutes to talk about potential topics. You may want to list them on the computer, print them out, and keep them as a record. Use this time before writing to get to know your student. You will soon have some idea of what his or her interests are. You may want to keep note of his or her interests, and make some suggestions for potential topics on days that the student is having trouble coming up with a topic.

2. **Drafting. Students write a first draft.** The object here is for the student to get his or her thoughts down on paper. Spelling, sentence structure, and grammar are not important at this point. It is difficult not to do so, but do not correct the student's spelling or sentence structure at this time. If students have trouble typing themselves, try having them tell you what they want to write while you type it in the computer. If they ask for help with spelling or sentence structure, tell them that there will be plenty of time later to work with these aspects of the writing. Reinforce the idea that what is important now is getting their words down on paper. The students will have some trouble with this in the beginning. Their prior experiences with writing have been that they have one chance to do it, and it is either right or wrong. It may take some time for them to trust your statement that spelling does not count right now.

3. **Sharing. The writers read their pieces aloud to the tutor.** Print out the writing. Have the student read the writing aloud. Question

the student about the piece of writing. Ask question that will get the student to give you more information related to the piece. Questions and comments you pose will be used by the writer to clarify and expand the written work.

4. Revising. Based partly on feedback, the students expand their ideas, clarify meanings, reorganize information. They now can take some time to make changes and additions to the written piece. You should still stress getting information down on paper rather than correct spelling and structure. If students insist on working on mechanics such as spelling or grammar in early revisions, encourage them to do as much of their own editing as possible before you give assistance (see "editing" below).

The student should go through the writing/sharing/revising process several times. The student will let you know when the piece is finished. At some point he or she may not wish to make any changes, and through questioning you may find out that the student has reached his or her goal for the writing.

5. Editing. The students focus on eliminating mechanical and grammatical errors. Once students have gone as far as they can with with the writing, they are ready to work on editing the piece. Spelling, punctuation, and grammar now become the focus. Students may edit in preparation for the next step, publishing. Encourage students to do as much of their own editing as possible. If spelling is a problem for the student, for example, you may ask him to circle words he thinks he needs

help spelling. Once he has done the underlining, then provide assistance. If punctuation is a problem for the student, you may ask her to read her work aloud and mark boxes where there may be a need for punctuation. Once she has gone through it, marking all she can, you may provide some assistance. Then, have her read it once again, using the punctuation marks you have put in, to determine if they give the meaning she wants. If grammar is a problem, you may ask the student to draw lines under the places where he thinks the language does not sound right. Then, provide assistance. In these examples, the students see how conventional punctuation, spelling, and grammar are used to provide meaning. They see the need for these conventions in cases where the problem is important to them. At the same time, they retain control of their writing.

6. Publishing. Students share their work with other students. Students should be encouraged to publish some of their writing to share with other students or take home to show family and friends. The final printed version of the writing may be put into a report binder or covered with another sheet of paper and stapled. The title, and possibly the students first name if he or she does not object, should be written on the front. Information about the student who published the writing may be included on a page at the beginning or end of the book. Published writings should be kept by the computer and students should be encouraged to read each other's work. Students may be interested in reading the writings of others who have things in common with them. They may also want to ask questions or make comments about another student's writing. Reading the writing of other students may help them

identify topics that are important to them. Getting comments on their work from other students may help them improve as writers. You may wish to give the student the feeling of being published by making their first two or three pieces into booklets. As time goes on, you and the student will become more selective about the work that will be published, and fewer pieces will be published. It is important to add at this point that the writing does not need to be perfect to be published. You have already worked with the student to make the changes in grammar, spelling and punctuation that he or she can make. Forcing too many changes on the student that he or she would not make if left alone will make the student lose responsibility for the work.

Other Important Notes

Students should try to work on writing for a few minutes during every session. You should keep a folder with drafts of the student's writing in it. This will allow them to see the progress they have been making. They may want to go back to a piece of writing after they have not worked on it for some time and make more changes on it. They may even want to go back to a published work and correct an error after some time has passed.

• The activity is learner-controlled, not tutor-controlled. The role of the tutor is to facilitate the student's activity, not judge it. The tutor talks with the student, making suggestions about how the piece can be improved, but the student has the final say as far as additions or changes. The student can always return to the piece to refine it or add to it, even after it is "completed".

• Spelling, grammar, and punctuation do not become the focus of concern until very late in the process. The emphasis is to get the student to concentrate on meaning. It is thought that instruction in spelling, grammar and punctuation will be more meaningful to the student if she can see that attention to these conventions will help make it easier for others to understand the piece.

Using this instructional approach may be difficult for some tutors. Many were taught to write in a different manner: a composition was written, handed in to the teacher, and was graded. Spelling, sentence structure, and grammar counted in determining the grade. No second chances were allowed: an unacceptable paper was given a low grade. Thus, it may difficult for tutors to get used to the idea that several drafts of a piece may be completed. Many tutors will have particular difficulty with the idea that spelling, punctuation, and grammar are not the focus of instruction from the start of writing.

To help tutors develop a feel for using this instructional approach, the trainer should discuss the writing process with the tutors. The trainer should ask them to describe their own experiences with writing: were they good ones or bad ones, and why? He or she should ask them to compose a piece of writing. The trainer should role-play the writing process with them, with tutors acting as students and the trainer acting as

the tutor. The trainer should have tutors draft a piece of writing, then review it with them. Tutors should revise it several times. The trainer should focus first on developing meaning, then later work on conventions such as spelling and punctuation. Tutors and the trainer should discuss what happens at each stage, and discuss the role of each person. This is the best way to familiarize tutors with this valuable instructional approach.

Training Tutors to Create Lessons

The Penn State Adult Literacy Courseware can be used to create lessons tailored for students. Tutors can use use directions provided in the *Teacher's Manual for the Penn State Adult Literacy Courseware* to create new lessons. The best way to instruct tutors in how to make new lessons is to go through the lesson creation process with them once or twice until they feel confident in doing it themselves. At the test sites, the handout on pages 23 - 24 was developed to supplement the information provided in the Teacher's Manual.

Providing Technical Assistance

At some point, trainers will begin working individually with tutors to address problems that come up while tutors are using the computer. Trainers are now providing technical assistance to tutors. It is critical that someone with knowledge of the courseware be available during the times when tutors are working with the computer to provide technical

assistance. Questions may continue to come up several months after the tutors have been trained.

Making New Courseware Lessons

All new lessons you create will be Module 3 lessons. Page 37 in the Courseware Manual gives some general guidelines for creation procedures for Module 3.

1. Always use copies of courseware disks to make new lessons.

2. Size Limits
   words- no longer than 15 characters
   wordset title- no longer than 20 characters
   sentences- no longer than 60 characters (spaces and punct tion marks count)

3. Follow the directions carefully, or the lesson may not run.

4. You must create the entire lesson before attempting to run it.

5. If you want to keep student information on a lesson, test or game you have created, you must create a new file for the file editor. This may be done before or after you create the lesson.

6. If you want to create more than six wordsets, simply copy another set of the necessary courseware. You can then create another set of six wordsets for Module 3, but they will also be numbered 45-50.

7. You will use the Creation Disk (5.25") and backups of the Courseware disks (3.5") to make new lessons, tests, and games.

Page 38 tells you how to create a new file editor file.

Page 46 tells you how to create a new lesson.

Select 10 target words you want the student to study and make a short story (10 sentences or less) using them. Also, make three instructional sentences for each word. The manual recommends that the first instructional sentence for a word should be the story sentence for that word, so you will really only make two instructional sentences.

You will come to a Lesson Creation Menu. You will just go down the menu and do the items in order. You will by typing in the ten wordset words, speech codes for the words, instructional sentences for the words and their speech codes, and story sentences for the words and their speech codes. See pages 50 to 51 in the Courseware Manual for important hints.

Wordset
house
apartment

bedrooms
laundry
fireplace
rent
landlady
vacant
lease
move

A New House (Target words underlined)

Sam and Janet want to move to a new house. The apartment they live in now is too small. They would like the new house to have two bedrooms. They would like to have a laundry room. A fireplace would keep them warm in the winter. They saw a house for rent on Thursday. The landlady seemed very nice. The house will be vacant next month. They may decide to sign the lease. They are looking forward to their move.

Instructional sentences NOTE- the target word cannot be the first word in the sentence.
house
1. Sam and Janet want to move to a new house. (Story sentence)
2. He saw a ghost in the haunted house.
3. The house did not leak in the rain.

apartment
1. The apartment they live in now is too small. (Story sentence)
2. We will live in an apartment until we move.
3. The apartment was cold because the heater was broken.

bedrooms
1. They would like the new house to have two bedrooms. (Story sentence)
2. My brothers' bedrooms are messy.
3. Every Saturday, the children must clean their bedrooms.

laundry
1. They would like to have a laundry room. (Story sentence)
2. When I first moved from home I had to do my own laundry.
3. In the days before washing machines, laundry was chore.

BE CAREFUL OF SIZE LIMITS

Providing Instructional Support to Tutors

Programs should have a person who is prepared to answer questions tutors have about how to sequence lessons in the various courseware modules. The modules are designed to be used in any order: however, students appear to have preferences for different modules depending on their ability level. Beginning students seem to enjoy working with module 5 (word families), while advanced students seem to enjoy working with modules 4 and 6 (application forms and word processor). The instructional support person can also assist tutors in developing lessons tailored for the student, provide suggestions for how tutors and students can use the word processor, and perform other similar functions.

Adaptations for Programs That Do Not Have a Computer

Programs that do not have the resources to purchase a computer and Courseware can still set up a similar program. This section provides information on how to: 1) develop lessons which instruct students in job-related vocabulary words; and 2) develop writing activities. This information can be shared with tutors in programs in order to help them provide job-related reading and writing instruction to their students.

Developing Job-Related Vocabulary Lessons

Paper and pencil vocabulary lessons similar to those in the Penn State Adult Literacy Courseware can be developed easily. Ten target words can be selected by tutors, and one or more paragraphs using the target words can be developed. Additional sentences can be developed which use each target word. Tutors can ask students to read the paragraphs containing the target words, then have students complete one or more of the following activities using the instructional sentences. Many of these activities are adapted from the *Teacher's Manual for the Penn State Adult Literacy Courseware.*

Spelling Activities

1. The tutor shows the student a sentence with a target word underlined. Some of the letters of the target word are missing. The student is asked to fill in the missing letters.
2. The tutor presents scrambled target words to the student; the student is asked to unscramble them.
3. The tutor shows the student a sentence with a missing target word, and three choices for how the word might be spelled. The student chooses the target word with the correct spelling.
4. The tutor dictates a target word; the student writes it.
5. The target word is written in large print, and the student is asked to trace or copy the word.

Word Recognition Activities

1. The tutor presents the student with instructional sentences, with a blank space for a target word, and three choices of target words. The student selects the correct word. A box shaped like the word, rather than a blank space, may be used to provide an extra hint about the correct answer.
2. The tutor can develop flashcards on which target words are written. When the tutor presents the a card, the student reads the word aloud. Speed of recognition can be recorded, and the student can attempt to increase recognition speed.

Editing Activities

1. Each word in an instructional sentence is written on a separate card. The cards are scrambled. The student is asked to arrange the words in a meaningful sentence. The student is encouraged to find all arrangements which make sense.
2. The tutor presents the student with a sentence or paragraph which contains spelling or punctuation errors. The student is asked to identify the errors and suggest how they can be corrected.

Comprehension Activities

1. The tutor reads a paragraph aloud to the student, or student reads it to herself. The student relays back the paragraph or writes a summary paragraph.

2. The tutor rewrites an instructional paragraph with an anomalous word or inconsistent sentence. The student is asked to identify the problem/s and suggest corrections.

Developing Writing Activities

The composition activities listed on page 13 can be completed by the students on the computer or with paper and pencil. In these activities, students write, edit, and rewrite text following the writing process model described on pages 14 - 15. Students and tutors will follow the same steps of prewriting, drafting and sharing. Students should write revisions directly on the draft, then copy the entire piece, including changes, onto a new sheet of paper. This new sheet becomes the next draft. All old drafts should be saved so that the student can see how the piece developed.

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Appendix M. Tutors' Guide for Using the Penn State Adult Literacy Courseware

Tutors' Guide for Using the Penn State Adult Literacy Courseware

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Tutors' Guide for Using the Penn State Adult Literacy Courseware

Introduction

The purpose of this Guide is to assist tutors as they use the Penn State Adult Literacy Courseware. It is intended to be used along with the Teachers' Manual for the Penn State Adult Literacy Courseware.

This Guide was developed in response to the needs of volunteer tutors who used the Penn State Adult Literacy Courseware. Staff at Penn State's Institute for the Study of Adult Literacy have worked with both teachers and tutors as they use the Penn State Adult Literacy Courseware. Over the years, Institute staff have found that many tutors need some extra assistance in using the Penn State Adult Literacy Courseware that is not provided in the Teachers' Manual.

This Guide was developed as part of a project funded by the National Adult Education Discretionary Program, Office of Vocational and Adult Education, U. S. Department of Education, and carried out in two literacy programs in western Pennsylvania which rely heavily on the use of volunteers. It supplements the Teachers' Manual by providing a detailed description of the content of and activities included in the various modules of the Penn State Adult Literacy Courseware. It also provides detailed, step-by-step directions for running options within the various modules and helpful hints for solving common problems. The user of this Guide should consult the Teachers' Manual for general guidance on running the Courseware.

Penn State Adult Literacy Courseware

Purpose: The purpose of the courseware is to improve word recognition skills for the beginning reader (0 to 6th grade level) using 1,000 high frequency and functional words.

Reading levels: beginning to intermediate (0-6th grade level)

Equipment: Apple IIGS, Color monitor, 51/4 inch disk drive, 31/2 inch disk drive, Image writer printer and Echo GP Speech synthesizer.

Materials: 4 Program disks and 4 Student Data disks

Description of the Courseware:

The Penn State Adult Literacy Courseware is designed for the adult beginning reader. The courseware consists of several disks which deliver the instructional program and record student responses.

The Penn State Adult Literacy Courseware has six modules located on four disks. A description of each one of the Modules is as follows:

Module 1: Introduction to the Computer

Designed to help the student become familiar with the keyboard, the speech synthesizer, and the HELP and QUIT commands.

Module 2: Picturable Words

Presents 250 basic and survival words. Each word is introduced with an illustration.

Module 3: Non-Picturable Words*

Presents 440 basic and survival words. The words are introduced in short paragraphs on several topics that are of interest to adult students.

Module 4: Words Associated with Application Forms

Presents words that are commonly found on application forms of all types. The words are introduced in short paragraphs. This module contains an application form which the student may practice filling out.

Module 5: Words Based on Frequently Occurring Spelling Patterns

Presents basic and survival words in families such as "ake," and "ill."

Module 6: Word Processor*

Provides a word processor which allows the student to practice writing new words.

*In addition: Modules 3 and 6 may be used by the tutor to create lessons for a student's specific needs.

The courseware is designed with an eclectic view toward reading instruction. Modules 2, 3, and 4 approach reading instruction from a "whole word" or "sight word" approach. During each instructional sequence, words are presented in an appropriate context. Over the course of the lesson, students learn to recognize words by repeatedly seeing them in and out of context. Module 5 uses the phonics approach to reading instruction. Words are built by substituting consonants or consonant blends in front of word families (e.g. "ake" or "ill"). Module 6 is a simplified word processor which provides students with the opportunity to use new words.

The courseware modules are divided into several wordsets, each consisting of 10 to 13 words. The words were selected from lists of the most frequently used words in the English language and grouped into wordsets on the basis of story themes. Tutors and students should select wordsets that are of interest to them.

A speech synthesizer gives directions and reads aloud information on the screen while the student is working through the lessons. The tutor may monitor a student's progress and create new lessons. Pretests, posttests, and games are included in several modules. The Teacher's Manual for the Penn State Adult Literacy Courseware provides operating instructions as well as suggestions for integrating the courseware into ongoing literacy instruction.

The following information provides a full description of the modules and a general guide of how to run the programs.

Getting Started
Penn State Adult Literacy Courseware

Setting up the computer: See Teacher's manual

Operating the courseware:

In order to run the courseware, one of the four program disks must be used. The following will help to get the program running.

*Before the computer is turned on:

-Select a program disk.

-Insert disk into disk drive 1.

*Turn on the computer (switch in back of computer)

*Turn on color monitor (switch on side of monitor)

When the computer is first turned on, a red light will flash on each one of the disk drives. The computer is reading the program off of the disk(s). Whenever a red light appears on either one of the disk drives, wait until it goes off before typing anything on the computer or removing a disk.

At this point, make a selection. This will result in a series of menus appearing on the screen. Just follow the directions as they appear on the screen. At one point, the program will instruct the tutor to turn on the ECHO (speech synthesizer). A red light on the box should appear and the ECHO will say "ECHO READY" when it is on. Now the program is ready to start. See module descriptions for further instructions.

Helpful Hints:

1. The CAPS Lock should NEVER be pressed down when using this program.
2. The white box (cursor) indicates where to start typing or where to press the return key.
3. When red light is shown on disk drive, Wait until it goes off before touching any part of the computer.

A Guide to Suggested Use:

It is recommended that the student go through Module 1, Introduction to the Computer, first. Module 1 should be used as a screening device. Any student who cannot do the tasks in Module 1 may need additional help before getting started on the courseware. Modules 2, 3, 4, 5, and 6 may be used in any order. There is no reason why the student needs to complete one module before using parts of another module. The tutor or student can choose the parts that interest him/her.

Description of Lesson Menu

Modules 2 and 3 have lessons that teach words in a variety of ways. A lesson menu allows one to run a lesson on a selected wordset. A wordset is a list of 10 to 12 words identified under a particular topic. For example, the words road, drive, traffic, stop, etc. may be in a wordset entitled CARS.

Each lesson menu allows one to:

1. Run entire lesson *

   In this section, all words in the wordset will be seen in the lesson.

2. Run group 1 (list of half of the words in the wordset) *

   In this section, the first half of the words in the set will be seen in the lesson.

3. Run group 2 (list of the other half of the words in the wordset) *

   In this section, the second half of the words in the set will be seen in the lesson.

4. Choose review words

   This section allows the student to review any words with which s/he is having difficulty.

5. Return to Module #__ Menu.

   This option allows one to return to the Module Menu.

* **Note:** Option 1 takes about 60 minutes to run. Options 2 and 3 take about 30 minutes to run.

[Remember, you can quit the program (see Module 1, Introduction) at any time during the lesson; however, student data cannot be stored if the program has not been completed].

Module 1: Introduction to the Computer

Disk Location: 1

Student Data Disk: 1

Module 1 is designed to acquaint the student with the keyboard, the speech synthesizer, and the HELP and QUIT commands. It also provides information on how to correct typing mistakes, match words, and copy words (these are two activities the students will use throughout other modules of the courseware). The menu for Module 1 contains 6 lessons from which to choose. A brief description of each of the lessons follow.

Lesson 1: How to use the comouter. This lesson will:

1. Introduce the student to the screen and the keyboard.
2. Show the student the location of the RETURN, SPACE BAR, and SHIFT keys, as well as describe how and when to use each key.
3. Show the student the location of the HELP, QUIT and VOICE keys, and describe how and when to use each key.

Lesson 2: Number Key Introduction. This lesson will show the student the location of the number keys and show the student how to use them.

Lesson 3: Letter Key Introduction. This lesson will show the student the keys that correspond to capital and lower case letters. This lesson presents ten lower case and capital letters, and

students are asked to press the corresponding keys on the keyboard (the same ten letter sequences are always presented). If the student has difficulty with the lesson, the instructor should provide additional practice for the student in matching keys to letters. This may be done, for example, with flashcards; the tutor may flash a card with a letter to the student and ask the student to press the corresponding key on the keyboard.

Lesson 4: Lower-case Letter Recognition. This lesson will show the student the (capital letter) keys that correspond to lower-case letters. This lesson presents ten lower case letters, and students are asked to press the corresponding keys on the keyboard (the same ten letter sequence is always presented). If the student has difficulty with the lesson, the instructor should provide additional practice to the student in matching keys to letters. This may be done, for example, with flashcards; the tutor may flash a card with a lower-case letter to the student and ask the student to press the corresponding key on the keyboard.

Lesson 5: Word Matching. This lesson will show the student how to select a target word from a list of 4 words. (The student is asked to do this in instructional sequences throughout the modules.)

Lesson 6: Word Copying. This lesson will:

1. Show the student how to type a target word into the computer. (The student is asked to do these instructional sequences throughout the modules.)

2. Show the student how to correct typing mistakes by using the BACKWARD ARROW key (shows location of key, when and how to use).

Module 2: Picturable Words
Tests, Lessons, and Games

Disk Location: 1

Module 2 is designed to teach a student 250 basic and survival words. The student and the tutor have a variety of wordsets from which to choose. There are 25 wordsets (lesson) with 10 words each. Each word is introduced by a graphic or an illustration. The lessons allow words to be presented in many ways with practice through games.

The module also provides for pre and posttesting of the words in each wordset (This is optional). The tutor may elect to give a pretest to determine how well the student can recognize the words. If the student does not recognize most of the words in a selected wordset, then those words can be used in a lesson. If the student recognizes 90 percent of the words, then the tutor may elect to work with another set of words in a lesson. After a lesson has been completed, the tutor may choose to do a posttest to determine how well the student has learned the words.

[**Note.** If you do not plan to run any tests, skip the section on a description of Module 2: Tests]

A Description of Module 2: Tests

Student Data Disk: 4

Once module 2 tests option has been selected, a wordset list should appear on the screen. Select the wordset by typing in the number

of the selected wordset. [Note: if you want to return to the Master Menu, just type M]. When a wordset is chosen, a new screen will appear on the monitor. Pretest, Posttest, and 2 options will appear on the screen. Option 1, "Wordset," allows one to select another wordset. If another wordset is desired other than the one shown, then type the number 1. If you type "1" the program will take you back to the wordset list. Option 2, "Test to be used as a:," allows one to use the test as a pretest or a posttest. If posttest is listed on this option and the pretest option is desired just press 2 (or vice-versa). However, if posttest is on the screen and that is what is desired, do not type anything. When options are correct, press S to start the testing.

Checklist for Running Tests:

_____ Select a wordset from the menu.

_____ Check option 1 (Wordset).

_____ Check option 2 (Pre-test/Posttest).

_____ Press S to start the test.

Helpful Hint: Occasionally, the tutor/student will have to press the option keys firmly for the program to run if the program does not respond to the initial press.

Running the test:

The test is divided into 2 sections. It takes approximately 30 minutes to run a complete test. In the first section, the ECHO reads a sentence. The sentence is also written on a screen with a blank corresponding to the target word (word in the wordset). The ECHO tells

the student what word is missing. The student is then asked to select the word among the 4 choices (typed on the screen) that corresponds to the target word. Each word has a number next to it. The student is to select the number corresponding to the word they have chosen and type it on the screen. Once they have typed in their choice, a "Please Wait" message will appear on the computer while it records the student's answer.

Caution:

- If a number is not typed, the computer will repeat the sentence.
- If a number is typed before the sentence is complete, computer will not record response (Retype response).
- If a number other than 1-4 is typed, the computer will repeat the question.

Twenty sentences are presented in this section, after which, the number of correct sentences out of twenty (e.g. 4/20) is presented. A score of 18 out of 20 means that student has correctly answered 90 percent of the questions.

In the second section, the ECHO will read a sentence. The sentence will appear on the screen with a missing blank. A box at the top of the screen will contain several words. The student will be asked to choose the word from the box that completes the sentence and type it in the blank. Ten sentences are presented in this section.

Helpful Hint: Wait until the cursor appears on the screen before beginning to type.

Caution: If a word is not typed, the computer will continue to the next sentence.

When both sections have been completed, the computer will make a "beep" sound to indicate that the programs finished.

Evaluating the Test Results

This program allows one to assess the results of the testing in greater detail. Please refer to the Teacher's Manual for a description of this process (pp. 12 and 13).

A Description of Module 2: Lessons

Student Data Disk: 1

Once Module 2 Lessons option has been selected, a wordset list will appear on the screen. Select a wordset by typing in the appropriate number [Note: Return to the Master Menu (if desired) by typing M]. After a wordset has been chosen, press the RETURN key and Be Patient. At this point messages will appear on the screen ("Please Wait," "Sentences being gathered," "Graphics being gathered"). When the program is ready to run, the computer will present the name of the selected wordset on the screen as it is showing a graphic of that wordset. Place the student data disk in disk drive (to store student data). After student information has been verified and ECHO has been turned on, the lesson can begin.

The next screen will be the Lesson Menu. [Please see description of lesson menu in the above section.]. Select an option. If options 1, 2, or 3 are selected, the computer will run a lesson. Each lesson has several sections. Each section is described below.

Section A:

1. General directions are given.
2. A graphic representation of the word will appear on the screen.
3. The word will be written on the screen and the ECHO will voice the written word.
4. An outline of the word will appear (configuration clue).
5. A sentence will appear on the screen (read by the ECHO) with a blank corresponding to a missing word.

Note: The missing word is the word being presented in the lesson.

6. Directions will instruct student to type the missing word in blank. (Student only has to type word which is already on screen).
7. If word is typed correctly, "Good job", "Great", or "Wonderful", will appear. If word is typed incorrectly, "Sorry, try again" will appear. If Word is not typed, sentence will be repeated.

Helpful Hint: Wait before the cursor appears before typing anything.

Section B:

1. General directions are given.
2. Two words are shown on the screen along with a graphic
3. Type the number of the word voiced by the ECHO.

4. Correct or incorrect will appear on the screen and be voiced by the ECHO.

Helpful Hint: If the return key is pressed and nothing occurs, firmly press the key again.

Section C:

1. General directions are given.
2. Two words appear on the screen.
3. A sentence with a missing blank is presented.
4. Type in the word voiced by the ECHO (Student types one of the words presented on screen).

Section D:

Same as section B, but three words are presented.

Section E:

Same as section B, but four words are presented.

Section F:

Same as section C, but 4 words are presented.

Section G: (Tutors -- students may need some assistance here.)

1. General directions are given.
2. A graphic appears.

3. A sentence will appear with a missing blank.

4. Type the missing word in the blank space.

(**Note:** This is more difficult than earlier lessons because the student has no visual presentation of the word on the screen).

If the student answers incorrectly,

-the first time, the computer will present a configuration clue.

-the second time, the computer will present a list of words from which to select the appropriate word.

-the third time, the program will indicate that the word needs to be reviewed.

The lesson will continue until the last word in the set is shown. At the end of the program, an option can be selected from the Lesson, Module, or Master Menu or the program can be ended.

Running Lessons' Checklist:

_____ 1. Select wordset.

_____ 2. Select Options 1 through 5 on lesson menu.

_____ 3. Continue with the program as necessary.

Choose Review Words

This option under the lesson menu allows a review of selected words. To run this option:

1. Select option 4 from lesson menu.

2. Scan wordlist on the screen and select words to be reviewed.

3. Type each number corresponding to the selected word to be reviewed and press return.

4. Type Q to begin the review.

5. Lesson for words will run the same as above.

A Description of Games (Module 2&3)

Location: Courseware Disk 2

Student Data Disks: 1 (Module 2) & 3 (Module 3)

The games provide additional opportunities for drill and practice of lesson words. There are 6 games from which to choose. Each of the lessons can be used with any of the games. To run the games:

1. Insert Courseware disk #2 in disk drive.
2. Select option 1 from Master Menu.
3. Select option 1 (or 2 for module 3) from Module Menu.
4. Select lesson.
5. Place appropriate student data disk in drive.
6. Verify disk identification information.
7. Select a game from the game menu.

The following will give a brief description of each game.

1. Wordmatch

Wordmatch matches the target word with the correct response choice. The target word is presented on the screen and four choices appear in a box. For each target word, a number of a word in the box is identical to the target word to be typed. The computer will indicate whether it is correct or incorrect. This game keeps a tally of right and wrong answers at the top of the screen.

2. Wordsearch

Wordsearch searches for words among a grid of letters (resembles a seek and find game). A grid of letters appears on the screen. The student is told the number of words to find. Words are then identified within the grid. Words may be horizontally or vertically positioned in the grid. When a word is found, that word is typed at the bottom of the screen. If the word typed is a word in the lesson, the word will be highlighted on the screen. The student will be given the number of words left to find. If the word typed is a word not in the lesson, the student will be congratulated for finding an additional word and will be instructed to continue to look for lesson words. The game includes two grids. The computer will return to the Game Menu after the second grid has been completed.

3. Fill in the Face

Fill in the Face requires the student to correctly spell lesson words. Initially, the ECHO will say a word. Lines corresponding to the number of letters in the word as well as a blank face will appear on the screen. The student will be instructed to type each letter of the word on each of the lines. As a correctly typed letter is placed on the lines, different facial features will appear on the face (eyes, ears, nose, mouth, etc.); thus filling in the face. The program will present a variety of clues if letters typed are incorrect. The game will cease when all lesson words have been presented.

4. Hidden Word

Hidden word selects the appropriate target word from among four choices. A box with four words will appear on the screen. Each of the words will be replaced by a number. The object of the game is to type the number that corresponds to the word the ECHO names. If the correct number is typed, the word will be highlighted in the box. If the incorrect number is typed, the incorrect word will also be highlighted and the program will then present the word a second time.

5. Word Race

The object of Word Race is to win a race by filling in the letters to complete a word spelling. Two cars on a race strip will appear on the screen. Under the strip is a word with some letters missing. The ECHO will instruct the student to complete the word by filling in the missing letters. As the correct letters are typed, the bottom car will move toward the finish line. If letters are correct the student wins the race. If an incorrect letter is typed, the top car will move toward the finish line. The game includes a wordbank to assist the student if incorrect letters are being typed.

6. Word Catch

The purpose of Word Catch is to select from a variety of words the correct word requested by the ECHO. The ECHO will say a word. Several words will be flashed on the screen one at a time. The student is to press the SPACE BAR when the target word has been flashed on the screen. If the correct word is selected, a new word will be presented; if

an incorrect word is selected, the ECHO will provide the student with another opportunity to select the correct word.

7. Game Sequence

Game sequence allows the student to select a variety of games to play. The student is to type the number corresponding to the selected games. Type one number at a time and press RETURN. Once all the selections have been made, press "0" to start the games. The games will be displayed in the order in which they were typed. A high pitched beep sound will indicate that all games have been completed.

Tutor's Note: In some of the games, the words may have to be pronounced (since the ECHO is occasionally difficult to understand).

When each game is completed, the computer will return to the Game Menu

Module 3: Non-picturable Words

Tests, Lessons and Games

Disk Locations: 2 & 3

Module 3 is designed to teach a student 440 basic and survival words. The student and the tutor have a variety of wordsets from which to choose. There are 44 wordsets (lesson) available with 10 words each. Each word is introduced in a short story. Words are presented in a variety of ways with practice provided by games.

The module also provides for pre and posttesting of the words in each wordset (This is optional). The tutor may elect to give a pretest to determine how well the student can recognize the words. If the student does not recognize most of the words, those words can be used in a lesson. If the student recognizes 90 percent of the words, the tutor and student may elect to work with another set of words in a lesson. After a lesson has been completed, the tutor may choose to do a posttest to determine how well the student has learned the words.

[Note: If you do not plan to run any tests, skip section on a description of Module 3: Tests]

A Description of Module 3: Tests

Student Data Disk: 5

The test procedure for Module 3 is identical to that of Module 2. See page 14 for details.

A Description of Module 3: Lessons

Disk Location: 3

Student Data Disk: 2

Module 3 runs very similar to Module 2. The only difference is that lesson words are introduced in a short story instead of by a graphic. The words highlighted in the story are the words from the wordset lesson. Hence, see description of Module 2 Lesson above for explanation on how to run the lesson.

[Note: Section A varies for module 3. Sections B-G are identical]

A Description of Module 3: Games

Disk Location: 2

Student Data Disk: 3

See description of games under Module 2.

Module 4: Application Form

Disk Location: 3

Student Data Disks: 6 & 7

Module 4 is designed to teach 140 basic and survival words. These words are typically found on application forms. The purpose of the lessons is to teach the words in a given wordset. The student and the tutor have a variety of wordsets from which to choose. There are 14 wordsets (lessons) with 10 words each. Each word is introduced by a short selection. The lessons are presented in a variety of ways. There are no tests or games included in this module; instead there is an application form that the student can complete. The application is divided into several sections. The words in a lesson correspond to a specific section on the application form. The application form can be printed out at any time (see teaching manual for instructions). It is suggested that the application form be used for practice after running a lesson.

A Description of Module 4: Lessons

Student Data Disk: 6

Once the Module 4 Lessons option has been selected, a list of wordsets will appear on the screen. Select the wordset of choice by typing the appropriate number. [Note: Return to the Master Menu by typing M] At this point, the program will run exactly like Module 3. See

description of Module 3 Lessons (above) for explanation on how to run Lessons.

A Description of Module 4: Application Forms

Student Data Disk: 7

This section allows one to practice using application lesson words on an application form. The menu for the application form is divided into sections so that each section can be practiced separately. The program is run in the following way. First, a selection on the Application Forms Menu is made. Next, appropriate section will appear on the screen. For example, if option 2 (name, social security number) is selected, the screen will show the section where the title, name, and social security number of an application would be located. Each item (title, name, and social security) on the screen will have a number corresponding to it. At the bottom of the screen will be a blinking cursor. Third, type the number [and press the return key] corresponding to the section to be completed. The cursor will move to that section. Fourth, fill in the section by typing the appropriate response and press the return key. Afterwards, the cursor will return to the bottom of the screen and allow the student to complete another item in that section. Once all items have been completed, press -Shift 2 Return (key)- and the program will return to the application form menu. At this point .select another option.

[Note: The student can practice each section as many times as desired.]

If you wish to obtain a printout of the application, select Option 18. When finished with this program, the return to the Master Menu option is available.

Checklist for Module 4 Application:

_____ 1. Select desired option from Application Forms Menu.

_____ 2. Type number corresponding section to be completed.

_____ 3. Fill in section (and press the return key).

_____ 4. Complete any other sections desired.

_____ 5. Press -Shift 2 Return- when section is complete.

Module 5: Spelling Patterns

Disk Location: 4

Student Data Disk: 1

The purpose of this module is to teach word recognition using some of the most commonly found spelling patterns. Ell, ake, at, and ill are examples of commonly found patterns. The program allows the student to make words by adding letters to the beginning of a selected pattern. The program presents the spelling pattern in a variety of ways. Each lesson becomes increasingly difficult as it is presented. This module also provides a game to aid in practicing of lesson words.

A Description of Module 5: Lessons

Once the Run Module 5 option is selected from the Master Menu, a Lesson Menu will appear on the screen. The next step is for the tutor and the student to select desired spelling pattern. After selecting the spelling pattern from the Menu, the lesson will run in the following manner.

1. General directions will be given.

2. Examples will be given of words belonging to the selected word family.

3. Student will be asked to type each letter of the pattern individually and then type entire pattern.

[Note: Tutor may have to repeat each letter after ECHO voices it.]

4. Lesson word will be presented by itself.

5. Lesson word will be presented in a sentence shown on the screen while ECHO voices sentence.

6. The same sentence will be presented a second time with instructions to type the beginning letter(s) that will complete the incomplete word.

- If letter(s) is correct, program will go to next step.
- If letter(s) is incorrect a first time, a clue will be provided.
- If letter(s) is incorrect a second time, correct answer will be provided.

7. The program will then display 3 words on the screen and ask student to select the lesson word from among the 3 choices.

- If word is correct, program will go to next step.
- If word is incorrect a first time, a clue will be provided.
- If word is incorrect a second time, correct answer will be highlighted.

8. Next, the program will present a sentence with a missing word. Student will be instructed to type in the missing word (lesson word).

- If correct, program will go to next step.
- If word is incorrect a first time, a clue will be provided.
- If word is incorrect a second time, correct answer will be provided and step 8 will be repeated.

9. Steps 4-8 will be presented for each word in a lesson until all lesson words have been presented.

10. When lesson is completed, program will return to the Lesson Menu.

Option 17 on the Lesson Menu is the "Beat the Clock" game. The object of the game is to type as many words as possible before the time runs out on the clock. The program will keep a tally of correct (lesson) words typed. When game is completed, program will return to lesson menu.

Helpful Hint: Tutors, it may be helpful to keep a printed list of lesson words handy to assist student in remembering the lesson words when playing the game.

Module 6: Word Processor

Disk Location: 4

Student Data Disk: 7

Module 6 is a simple word processor. This word processor allows one to type words, simple sentences, or passages (stories) on the computer. Located at the top of the word processor screen is a wordbank that contains all of the words included in the Courseware lessons. Additional words can be added to the wordbank as needed (see Teacher's Manual for further instructions). The tutor and the student can use the wordprocessor to practice words learned in lessons. In addition, it can be used in a variety of ways (see Appendix K in the Teacher's Manual for suggestions of word processing activities).

A Description of the Adult Literacy Word Processor

[Reminder: The ECHO or the Printer must be ON to run the Word Processor.]

Once the Run Module 6 option is selected from the Master Menu, the Adult Literacy Word Processor screen will appear as the ECHO reads the title. At this point one of two options can be made; Option 1 will lead to the hidden utilities menu and Option 2 will go directly to the word processor. To run Option 1, (utilities menu) press the ESCape key as the words "Adult Literacy Word Processor" appear on the screen. To run option 2, let the program advance to the next screen. A brief description of each option follows.

Option 1:

The hidden utilities menu will allow one to 1) run the word processor Help lesson, and 2) Create or Edit the word bank. The word processor Help lesson describes how to use the word processor and explains what keys are important to running the word processor. A list of important keys will be provided below. The word processor Help lesson also provides opportunity for practice. The Help lesson takes about 30 minutes to complete. In addition, Option 2 allows one to Create or Edit the wordbank (i.e. create or edit the list of words on top of the screen). See the Teacher's manual for more details in altering the wordbank.

Option 2:

This option allows one to go directly to the word processor to type a passage (story). The first screen (after Option 2 selection has been made) will say "Please choose a story number [Note: Only 4 stories can be saved]."

a. If this is the first time using the word processor, Select any number.

b. If this is not the first time using the word processor, but an earlier story.

c. If this is not the first time using the word processor and an earlier story was saved, select another number to save a NEW story.

d. If this is not the first time using the word processor, type the number of the earlier story to return to it if desired.

[Suggestion: Keep a written list of stories and corresponding numbers accessible.]

The Quit function (described on screen) will allow one to move smoothly from one option to another.

Checklist for Module 6 Word Processor:

___ 1. Select Run Module 6 from Master Menu

___ 2. Run Hidden Utilities Menu (press ESCape key) or let the computer advance to the Word processor.

___ 3. If Hidden Utilities Menu is selected, choose desired option.

___ 4. If computer is allowed to advance to the word processor, choose a story number.

[Suggestion: If this is the first time using the word processor, it is strongly suggested that the tutor/student use the word processor help lesson.]

Module 6 Word Processor
Important Key List

1. ESC- gets one into the Utilities Menu to run the Help Lesson.

2.  - cursor designates where to type.

3.  - arrows move cursor in different directions.

4. Control L- inserts a blank line between two lines.

5. Control D- deletes an entire line.

6. Control R- replaces a line.

   To move a line from one place to another:
   a. Type Contol D
   b. Move the cursor to where line will be replaced.
   c. Type Control R.

7. Delete - erases letters one at a time.

8. Control C - erases an entire story.

9. Control P - prints a story. (Make sure printer is on before starting program.)

10. Control T - moves the cursor from top to bottom.

11. Shift & - voices what has been written.

12. Shift @ - saves the story on the disk. (Student data disk 7 must be in drive 2 before new story is typed.)

13. Shift ? - takes one to the help screen to see command keys.

14. Shift > - moves the word bank forward.

15. Shift < - moves the word bank backward.

16. Word Bank - box on top of the screen that contains all of the words in the courseware lessons.

GLOSSARY

Basic word - a word that is commonly found in the English language.

Courseware - a set of instructions written in a computer language telling the computer how to process data or to interact with peripherals.

Cursor - the line, flashing box, or other blinking symbol that appears on the monitor to show where the next key stroke will appear.

Disk Drive - the piece of hardware that reads floppy disks. You must insert the floppy disk into the disk drive in order to use it.

ECHO(speech synthesizer) - a device that can read any computer text aloud.

Floppy Disk - a type of magnetized wheel used to store data and programs. Disks may be either 5.25 or 3.5 inches in diameter. They are sealed in a protective square cover.

Hardware - the physical components of the computer (e.g.; printer, monitor, keyboard, disk drive).

Menu - a list of command choices in a program displayed on the monitor for the user's convenience.

Module - the screen or TV-like device that is used to view information.

Survival words - words used to function in everyday life.

Appendix N. Local Advisory Board Questionnaire

1. What, if any, jobs are in demand locally? What jobs, if any, will be in demand in the next 5 to 10 years? (We do not want names of employers that are hiring, rather some ideal of occupations that are/will be in demand (for example, fast food counter workers, prep cooks cashiers, or construction workers, etc.

2. What types of work-related materials do you think workers in the above-named occupations will need to be able to read and write? (manuals, memos, charts work orders safety directions, etc.)

3. What kinds of oral communications skills do you think the workers in the above-named occupations will need to have? (giving directions to subordinates, asking questions or for clarification from supervisors, answering the phone, dealing with customers, etc.)

4. What types of mathematical skills do you think the workers in the above-named occupations will need to have? (calculating and adding sales tax, reading measurement instruments, etc.)

5. Can you suggest anyone who knows more about these specific occupations and would be willing to talk to us more about skills needed in these occupations?

6. What other skills or abilities not covered above would you look for in an employee?

Appendix O. Responses of Local Advisory Board Members to Advisory Board Questionnaire, By Question and Site

Responses of Monessen Library Advisory Board

1. What, if any, jobs are in demand locally? What jobs, if any, will be in demand in the next 5 to 10 years? (We do not want names of employers that are hiring, rather some ideal of occupations that are/will be in demand (for example, fast food counter workers, prep cooks cashiers, or construction workers, etc.

There were ten responses related to *health careers.* Two mentioned *health related jobs* in general, Specifically, two mentioned *registered nurses* and two mentioned *medical technicians.* Mentioned once were: *x-ray technicians, nurse aides, physician assistants, and therapists.*

There were a total of seven responses related to *food service.* Two respondents mentioned *food service* in general. Specifically, three mentioned *fast food workers,* and two mentioned *waitresses/waiters.*

Six responses were related to *sales jobs.* Three respondents mentioned *sales people,* and *cashier, food store checker,* and *convenience store employee* were each mentioned once.

Skilled and semi-skilled work was mentioned in five responses. Mentioned once each were: *skilled workers in general, highway and heavy equipment construction workers, machine operators, hospital equipment repair specialists,* and *electronic data processing repair specialists.*

There were three responses in each of the following: *custodian/cleaners, skilled computer workers,* and *clerical.*

There were two responses in each of the following: *security guards* and *jobs with small manufacturers and businesses.*

There were single responses in each of the following: *day care workers (for both elderly and children), unskilled laborers, social service workers,* and *travel and tourism workers.*

2. What types of work-related materials do you think workers in the above-named occupations will need to be able to read and write? (manuals, memos, charts work orders safety directions, etc.)

Manuals were mentioned six respondents.

Blue prints and order forms were mentioned by four.

Mentioned three times were *memos.*

Two respondents mentioned *work applications, computer printouts, work orders, patient charts, forms,* and *charts.*

Mentioned once each were: *union regulations, personnel handbook, textbooks, inventory runoff sheets, time cards, telephone book, purchase order, floor plans* and *diagrams.*

3. What kinds of oral communications skills do you think the workers in the above-named occupations will need to have? (giving directions to subordinates, asking questions or for clarification from supervisors, answering the phone, dealing with customers, etc.)

Mentioned by four responses were: *office communications* and *telephone answering.*

Three respondents mentioned each of the following: *understanding and following directions, asking questions,* and *using good grammar when talking to customers.*

Two mentioned *giving directions.*

Mentioned once each were: *listening, giving messages, relaying menu selections (food service workers), explaining service or commodity they are trying to sell, taking notes,*

communicating in a positive way, placing orders, reading newspapers, public speaking, using good grammar, showing a professional attitude, and *taking shorthand.*

4. What types of mathematical skills do you think the workers in the above-named occupations will need to have? (calculating and adding sales tax, reading measurement instruments, etc.)

[illegible] respondents mentioned *basic math skills.*

Four mentioned each of the following: *using measurements,* and *calculating percentages.*

Three mentioned *calculating sales tax* and two *basic algebra.*

Mentioned once each were: *basic geometry, basic accounting, using decimals, calculating bills, understanding and calculating payroll deductions, calculating discounts and markups, making estimates,* and *business math.*

5. Can you suggest anyone who knows more about these specific occupations and would be willing to talk to us more about skills needed in these occupations?

Three mentioned *PIC* or *JTPA.*

Two mentioned the *job service office.*

Mentioned once were *local merchants, local employers,training institutions,* and *Dr. Watkins of California University.*

6. What other skills or abilities not covered above would you look for in an employee?

Mentioned twice: *a good personality, willingness to work, common sense, trustworthiness, reliability,* and *ability to follow written and oral directions.*

Also mentioned were: *typing and filing, entrepreneurial abilities, ability to complete work application, initiative, perseverance, flexibility, assertiveness, ability to think for oneself, motivation,* and *good grooming.*

Responses of ALA Advisory Board

1. What, if any, jobs are in demand locally? What jobs, if any, will be in demand in the next 5 to 10 years? (We do not want names of employers that are hiring, rather some ideal of

occupations that are/will be in demand (for example, fast food counter workers, prep cooks cashiers, or construction workers, etc.

Four of the six respondents mentioned work in *fast food restaurants.* While one respondent did not specifically mention fast food restaurants, she did state that *part-time, minimum wage jobs* are the most readily available.

Two respondents mentioned *retail* positions.

Mentioned once were the following: *working with computers, hospital work, maintenance, secretarial jobs, and jobs in the aviation field.*

2. What types of work-related materials do you think workers in the above-named occupations will need to be able to read and write? (manuals, memos, charts work orders safety directions, etc.)

All material listed in the example were mentioned. Two respondents also mentioned the necessity of computer literacy.

3. What kinds of oral communications skills do you think the workers in the above-named occupations will need to have? (giving directions to subordinates, asking questions or for

clarification from supervisors, answering the phone, dealing with customers, etc.)

Two respondents mentioned that the ability to *communicate with customers* was important. One respondent who had stated that hospital jobs would be open, said that communication skills are especially important in that setting since workers have to deal with people every day. One respondent said that before communication skills were addressed, *self-esteem* and *assertiveness* must be developed. One respondent stated that *listening skills, critical thinking skills, and appropriate socialization skills* are necessary, but she gave no specific examples. *Understanding orders* from supervisors was mentioned by one person. One respondent specifically mentioned *answering the phone and "dealing with supervisors."*

4. What types of mathematical skills do you think the workers in the above-named occupations will need to have? (calculating and adding sales tax, reading measurement instruments, etc.)

Math skills mentioned were: *basic math, use of cash registers and calculators, counting money and making change, and basic measurement.*

5. Can you suggest anyone who knows more about these specific occupations and would be willing to talk to us more about skills needed in these occupations?

Two respondents mentioned *managers of fast food restaurants.* Others mentioned were: *Richard Curlund, CCBC, Job Service, and staff of training schools.*

6. What other skills or abilities not covered above would you look for in an employee?

Two respondents mentioned *good work attitudes.*, and two mentioned *social or interpersonal skills.* Also mentioned were *good grooming* and *transportation.*

Appendix P. Guidelines for Making New Lessons.

Making New Courseware Lessons

All new lessons you create will be Module 3 lessons. Page 37 in the Courseware Manual gives some general guidelines for creation procedures for Module 3.

1. Always use copies of courseware disks to make new lessons.

2. Size Limits
   words- no longer than 15 characters
   wordset title- no longer than 20 characters
   sentences- no longer than 60 characters (spaces and punctuation marks count)

3. Follow the directions carefully, or the lesson may not run.

4. You must create the entire lesson before attempting to run it.

5. If you want to keep student information on a lesson, test or game you have created, you must create a new file for the file editor. This may be done before or after you create the lesson.

6. If you want to create more than six wordsets, simply copy another set of the necessary courseware. You can then create another set of six wordsets for Module 3, but they will also be numbered 45-50.

7. You will use the Creation Disk (5.25") and backups of the Courseware disks (3.5") to make new lessons, tests, and games.

Page 38 tells you how to create a new file editor file.

Page 46 tells you how to create a new lesson.

Select 10 target words you want the student to study and make a short story (10 sentences or less) using them. Also, make three instructional sentences for each word. The manual recommends that the first instructional sentence for a word

should be the story sentence for that word, so you will really only make two instructional sentences.

You will come to a Lesson Creation Menu. You will just go down the menu and do the items in order. You will by typing in the ten wordset words, speech codes for the words, instructional sentences for the words and their speech codes, and story sentences for the words and their speech codes. See pages 50 to 51 in the Courseware Manual for important hints.

Wordset
house
apartment
bedrooms
laundry
fireplace
rent
landlady
vacant
lease
move

A New House (Target words underlined)

Sam and Janet want to move to a new house. The apartment they live in now is too small. They would like the new house to have two bedrooms. They would like to have a laundry room. A fireplace would keep them warm in the winter. They saw a house for rent on Thursday. The landlady seemed very nice. The house will be vacant next month. They may decide to sign the lease. They are looking forward to their move.

Instructional sentences NOTE- the target word cannot be the first word in the sentence.
house
1. Sam and Janet want to move to a new house. (Story sentence)
2. He saw a ghost in the haunted house.
3. The house did not leak in the rain.

apartment
1. The apartment they live in now is too small. (Story sentence)

2. We will live in an apartment until we move.
3. The apartment was cold because the heater was broken.

bedrooms
1. They would like the new house to have two bedrooms. (Story sentence)
2. My brothers' bedrooms are messy.
3. Every Saturday, the children must clean their bedrooms.

laundry
1. They would like to have a laundry room. (Story sentence)
2. When I first moved from home I had to do my own laundry.
3. In the days before washing machines, laundry was chore.

BE CAREFUL OF SIZE LIMITS

END

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