Computer Technology and Literacy

“Using a computer means belonging to this day and age, and adult learners know this,” says Antonia Stone, executive director of Playing to Win, Inc., a computer-based learning center in East Harlem, New York. She says, “Learning to use a computer is easier than learning to read. Mastering a few computer commands, knowing how to log on to a system, or printing out a copy of your input imparts a feeling of confidence as a learner—that’s the beginning. And that beginning must be available to any adult learner, no matter what ethnicity, no matter what level.”

Stone says the computer should be used with adult learners as they are used in the workplace—word processing for reading and writing, data bases for information processing, spreadsheets for number crunching and planning, and graphics to add clarity and extra fun. Telecommunications, computer-assisted design, and desktop publishing are also useful to adult learners, according to Stone. “When computers are used to create adult learning environments that model earning environments, we will be on the road to the ‘techno-able’ society we need in this information age.”

Students will go to the literacy programs which combine literacy and technology instruction, according to Marti Lane, director of United Methodist Cooperative Ministries in Clearwater, Florida. “We saw that when the Technology for Literacy Center opened in St. Paul, Minnesota. The center hoped for 300 students—they taught 800,” Lane says.

The importance of computers in literacy education is clear. However, making decisions about computer hardware and software seems to be among the most difficult for managers of literacy programs. According to Terilyn Turner, assistant director for adult literacy and special needs in the St. Paul, Minnesota public schools, there are several reasons for this. Technology decisions tend to be expensive. Mistakes are costly, and literacy programs have very limited resources. There is also a lack of adequate information, so program directors often feel unsure about choosing hardware or deciding how much of a program’s technology resources should be allocated for management and how much for instruction. The newness of the technology precludes anyone having sufficient experience to provide advice about long-term impact. Finally, most software and hardware vendors know little or nothing about adult literacy. It is very difficult for them to understand a literacy program’s needs, let alone match those needs to a technological solution.

Turner advises that before talking to a vendor, you determine your own technology needs. Be sure to involve the people who will be using the new technology.
Some Questions to Consider

Before integrating technology into your literacy program, it is helpful to examine questions and issues concerning your literacy organization and available technology. The focus of these questions is to help you determine how to move your program from where it is now to where you want it to be:

- What are the current strengths and weaknesses of the literacy program?
- How can technology improve the program? What do you want the technology to do? Is this a one-time purchase or part of a long-range plan?
- What needs to be done to implement technology into the program—raise funds to purchase equipment? train tutors? provide time for students to use equipment at other than during the tutoring session?

To begin answering those questions, it is important to take a close look at your organization as well as available technology.

Student Characteristics
- background experience in and out of school
- intelligence
- level of achievement
- learning style (preferences vs. genuine strengths and weaknesses)
- individual academic goals

Tutor Characteristics
- tutor comfort with technology
- amount of training tutors require to feel comfortable with a particular software program

Differences in Setting
- use of material during class time
- use of material outside of class time
- independent use of material
- use of materials by pairs of students
- use of program by tutor and student

Differences in Content of Various Programs

Presentation: Is material presented in small chunks so each screen is self-contained, or is it presented in larger chunks so student must scroll back and forth?

Answers to questions: Are correct answers given?

Skill level: Is skill level consistent throughout entire program so that a single student can work through it, or does program contain material of rapidly increasing difficulty? (In this latter case, students with poorer skills can use only the beginning of the program.)

Reading and Writing Software

When you start looking for software, you will find several categories of reading and writing programs:
Computer Literacy
Programs in this group help students learn the keyboard and improve their typing skills.

Integrating Reading and Writing
This group contains both reading and writing activities.

Word Recognition
These programs are designed to help students learn new words and recognize familiar words more quickly.

Reading Comprehension
These programs deal with a variety of reading comprehension skills including literal comprehension, inferential comprehension, prediction, sequencing events, analyzing cause-and-effect relationships, and so on.

Language Arts
This category contains a variety of programs covering parts of speech, compound words and contractions, and completing sentences by using context clues.

Writing
These programs fall into two categories. The first category emphasizes mechanics of writing and helps students to improve capitalization, punctuation, and spelling skills. The second category emphasizes composition and also includes word processing programs and story starters. A variation of this type of software (such as Print Shop and Print Master) allows students to create greeting cards, letterheads, banners, signs, and flyers.

Vocabulary
Software programs in this category are shell programs. Tutors or students must fill in information before the programs can be used. For example, Crossword Magic allows the user to create crossword puzzles.

Public Domain Software
This category typically contains a wide variety of programs; some are appropriate for literacy students trying to improve their reading and writing skills.

Formats of Educational Software
The educational software programs listed above can come in a wide variety of formats:

Drill and Practice
This format is used to reinforce basic, discrete skills in such areas as word recognition, reading comprehension, spelling, grammar, and vocabulary development. Students can often use this software independently. Being able to use a computer often motivates students to practice skills which they find boring when presented as pencil-and-paper activities.

Instruction and Drill
This format contains a short instruction section—often one or two screens—at the beginning of a lesson. The remainder of the lesson is drill and practice.
Educational Games
This software involves competition or earning points as well as drill and practice. Games often motivate reluctant learners. Good educational games require students to spend more time learning than moving pieces around the game board.

Tutorials
This type of software is similar to one-on-one instruction. The computer presents information and then asks a series of questions. Students’ answers determine what information the computer will present next.

Strategy Building
This type of software involves problem solving in addition to learning content. Students might learn several strategies for recognizing words in context, such as using context clues, word configuration, and phonics. Or the program might emphasize the importance of prediction in the reading process and give students practice in this skill.

Authoring
This kind of software is a shell program. Tutors must fill in information before the student can use the program. Some pieces of this software come with a few samples all ready to use. Tutors can use these with their students and then go on to create their own exercises or activities.

Selecting Computer Software
Consider these questions as you make decisions about what software to use for instruction.

• What hardware and peripherals are necessary to run the program?
• What are the objectives of the program? How will it help students to meet their needs?
• Is the material adult in content and presentation?
• Is the program based on sound educational principles?
• Does the program allow for student control of presentation sequence and rate when appropriate?
• Does the program allow students to respond quickly and easily (not require excessive or unnecessary keyboarding)?
• Does the program provide appropriate feedback for both correct and incorrect responses?
• Can students use the software independently or must tutors be present to help students?
• How much time and effort will students and tutors have to put into learning the program?

All of these lists of features and questions may seem intimidating. But they are presented to offer guidance and help you start thinking about computer technology in your literacy work. Terilyn Turner advises, “Don’t wait until you have all the answers before you make a decision. Technology is a risky business, but the benefits far outweigh the risks. As one tutor said about using computers, ‘You do it because once you’ve tried it with your student you know it works. And once you know that, it doesn’t matter how difficult it is, you never go back.’”