◖◗ ◖◗ ◖◗ Technology in Action: The Role Technology Plays in Adult Basic Education, General Educational Development, English as a Second Language, and Workforce Development

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Introduction

Technology is constantly changing, evolving and prominent in today's global economy and workforce. How does technology play a role in ABE, GED, ESL, and workforce development for today's adult learners? Let's explore where we are today and where technology needs to go in the world of adult literacy, and the role technology currently plays in adult literacy organizations.

Among adults, over 30 percent nationwide and over 27 percent (157,000+) in the city of Milwaukee have low or very low levels of literacy, meaning they cannot read at all or they struggle to read to their children, find an intersection on a map, write a short letter explaining a mistake on a credit card bill, etc. (GMLC 2006).

History of Adult Literacy

With the passage of 1998's Workforce Investment Act, the Adult Education Act—in place for over thirty years—was made obsolete. The National Adult Education Professional Development Consortium provides a history of this landmark piece of legislation on its Web site, an excerpt of which appears below.

> The Federal government has been involved in adult education for well over 200 years. The nature and extent of Federal attention to the needs of adult learners has varied over this period, but,

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from its earliest days, the government provided funds to establish, encourage, and expand programs to assist adults in overcoming educational deficiencies, which would hinder productive and responsible participation in the life and growth of the nation.

At the state level, evening schools for adults, part-time education, and citizenship/Americanization classes for the foreign-born and the Chautauqua experience were forerunners of the State/Federal adult education movement. State histories give evidence of organized adult education as early as the 18th century.

However, it was not until the early 1960s, in the Kennedy administration, that poverty and adult literacy became a concern. Building on Kennedy's efforts, President Lyndon Johnson and a sympathetic Congress launched a series of programs to end poverty and increase the role of the Federal government toward the improvement of education. With the passage of the Economic Opportunity Act (August 20, 1964), Title II B of Public Law 88-452 created the first Adult Basic Education program as a state grant. The 1964 Federal legislation established a state and Federal partnership to focus on the most basic of educational skills for adults who had not completed secondary education. Funding for states that first year was $18.6 million. In 1965, 37,991 adults enrolled nationally in what was known as ABE (Adult Basic Education). At times, Federal efforts have been disjointed; sometimes they overlapped with other similar programs. But, throughout the past thirty-four years, there have been continuous programs focused on increasing adult literacy skills through the Adult Education Act.

Literacy and Technology

For adult learners, using a computer means belonging to this day and age. 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 all adult learners, no matter what ethnicity they are, no matter what level they are at, no matter what part of the world they are in.

Technology integration should be used with adult learners as it is used in the workplace. Learning environments need to support the acquisition of lifelong learning skills and the ability of students to cope with constantly changing workplaces (Kotrlik and Redmann 2005). Adult learners need access to word processing for reading and writing, databases 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. Adult learners realize the importance of computer literacy in addition to literacy programs, and many learners combine both forms of instruction.

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. 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. Adult literacy service providers are nonprofit 501(c)(3) organizations that depend on the support of volunteers and receive critical funding through grants, foundations, and donors.

Nonprofit organizations providing adult literacy have found a new technology spot online for up-to-date software at a not-for-profit price. TechSoup.com is helping to bridge the digital divide. Due to TechSoup. com, nonprofit organizations are able to purchase software for adult learners to gain computer literacy skills necessary to be competitive in today's technologically driven economy.

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.

Technology Integration

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:

1. What are the current strengths and weaknesses of the adult literacy program?

2. 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?

3. What needs to be done to implement technology into the program—raise funds to purchase equipment? Train tutors? Provide time for learners to use equipment at times other than during the tutoring session?

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

Learner Characteristics

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

Tutor Characteristics

- tutor comfort with technology
- amount of training time tutors require to feel comfortable with a particular software program
- tutor experience with teaching

Differences in Setting

- use of materials during class time
- use of materials outside of class time
- independent use of materials
- use of materials by pairs of learners
- use of program by tutor and learner

Reading and Writing Software

When nonprofit organizations begin looking for software, they will notice several categories of reading and writing programs:

Computer Literacy

Programs in this group help learners familiarize themselves with 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 learners add to their vocabulary 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, and analyzing cause-and-effect relationships.

Language Arts

This category contains a variety of programs covering parts of speech, compound words and contractions, and completion of sentences via context clues.

Writing

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

Vocabulary

Software programs in this category are shell programs. Tutors or learners must fill in information before the programs can be used. For example, Discovery Software and CrossWord Magic allow the user to create crossword puzzles.

Public Domain Software

This category typically contains a wide variety of programs, some of which are appropriate for literacy learners 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. Learners can often use this software independently. Being able to use a computer often motivates learners to practice skills usually found 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 learners to spend more time learning than simply moving pieces around a 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. Learners' answers determine what information the computer will present next.

Strategy Building

This type of software involves going beyond learning content to actual problem solving. 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 learners 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 ready to use. Tutors can use these with their learners and then go on to create their own exercises or activities.

Selecting Computer Software

For technology-savvy individuals, the following questions are easily answered. But how would non-technically-minded individuals respond to the following questions in order to make appropriate 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 learners meet their needs?
- Is the material geared toward the adult age group 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 learners to respond quickly and easily without requiring excessive or unnecessary keyboarding?
- Does the program provide appropriate feedback for both correct and incorrect responses?

○ Can learners use the software independently, or must tutors be present to help learners?

○ How much time and effort will learners and tutors have to put into learning the program?

All of these lists of features and questions may seem intimidating. In the world of adult literacy, technology is a risky business, but the benefits far outweigh the risks. As one tutor stated recently about the use of computers: "I never thought technology would make such a world of difference to my learner. It's amazing to see how technology is the motivator for learner achievement." With this in mind, it is imperative that adult literacy organizations invest time and limited funding resources toward the future of technology and adult literacy.

Current Role of Technology and Adult Literacy

Adult learners are motivated to learn how to use a computer and the necessary technology that will help advance their personal and professional lives. Technology is currently being utilized in many aspects in adult literacy for those nonprofits that are able to afford it. Nonprofits using technology will find that their adult learners not only have the will to learn but also understand the importance of technology and being able to appropriately apply it in their daily life skills and within the workplace.

As a technology educator, I have made a decision to take a nontraditional approach to the advancement of technology and computer literacy. In the opinions of some of our learners, this has been a welcome change and has made technology "real"—not something that continues to bore them to death.

The traditional model was laid out by Ralph Tyler in 1949 and is generally considered the mainstream way to conceptualize curriculum development (Prevedel 2003). However, this approach—still used by many professional educators in schools across the United States—has created a stigma about how adult learners should be expected to learn in classrooms of twenty-five or more. Large class size is a likely reason why so many students are not successful in our schools today, leading to high dropout rates and reports that nearly 1 in 3 high school students does not graduate (Chaddock 2006).

Adult literacy issues are evident, and the time is now to understand how adult literacy providers can make the learner-driven approach toward basic literacy comprehension and workforce development a reality. Malcolm Knowles, often considered the father of adult education, says that adults

come to education "with a life-centered, task-centered, or problem-centered orientation to learning" (Knowles 1984, 12). For the most part, adults do not learn for the sake of learning.

Project-Based Learning and Technology

Project-based learning (PBL) is built on the principle that the "need to know" about a topic drives the development of language and literacy skills, and the desire to tell others engages learners in language work to a much greater extent and results in more time on-task and deeper learning than does conventional class work. Project-based learner-centered orientation puts primary emphasis on participants' involvement with curriculum development processes (i.e., on students setting their own goals, exploring their own experiences, shaping the curriculum, and evaluating their own learning). This participatory approach emphasizes drawing curriculum content from the social context of learners' lives as well as involving them in curriculum development processes (Auerbach 1993).

Adult basic education (ABE) and English as a second language (ESL) teachers have been saying for a long time that our learners have complicated lives and don't have time to do homework, which is true enough. What we find with PBL, however—particularly if there is a student showcase involved—is that most adult learners make the time to meet and prepare their presentations outside of class and often spend an inordinate amount of time working on PowerPoint shows or videos; creating posters, iPod voice projects, comic-book-style writing, personal journals, or photo shows created in iPhoto; or otherwise making sure their presentations meet the standards they have set for themselves. One learner told me: "I tell my husband or my mother-in-law, 'this is like work; I have to meet with my team, and then I tell them about the project so they understand.'"

PBL also owes a great deal to "constructivism"—the notion that the brain makes sense of the world by connecting new information to existing information, and that we as human beings are constantly engaged in creating knowledge (i.e., we don't just passively absorb ideas and store them as we hear them in our brains; rather, all ideas and experiences are processed before they are stored, which explains why two people remember the same event differently). Our minds actively weave together what we hear, read, and see, and the greater our engagement with ideas and the more channels we use to work with these ideas (visual, auditory, print-based, hands-on), the deeper the learning goes. We also know that the more connections the mind can make around a central idea, the more accessible these ideas will be in the future and the longer they will be remembered.

If we then create positive experiences around the development of knowledge and the acquisition of skills and strategies, we begin to create an impetus for lifelong learning, in spite of the fact that the learning process may have been a bit stressful along the way.

PBL, with its focus on investigations, the learning of new technologies, and the nerve-wracking prospect of having to conduct a presentation to "real people" (not just to one's own teacher and classmates), also reflects the notion that language develops in fits and spurts, and that a bit of mild stress is a good thing in that it actually propels us forward in our learning.

This can be a difficult concept to get across, since many teachers try to protect their learners from anxiety and are reluctant to demand anything that might make them uncomfortable. Yet we know from learning theory that very little, if any, new learning happens when we remain in our comfort zone. In order to grow cognitively, we need to take on new challenges and deal with the frustration of not knowing how things will turn out.

If we look back at learning experiences that have stayed with us over the years, as well as the achievements that we were the most proud of, there was probably a fair amount of anxiety involved at one point. It's the same for the learners I've worked with. Before a showcase, they are a mess—their stomachs hurt, they curse their teachers, and they are close to dying of stagefright (not all that different from their teachers, who on a regular basis wonder what they've gotten themselves into).

Yet in the end, adult learners not only survive but get to bask in the glory of having done things no one expects of adult learners, including using computers to create PowerPoint presentations with sound, producing mini-documentaries, creating CDs that amaze their children, and speaking in front of a crowd.

Then, of course, there is the connection to participatory education and to the engaged learning models that good technology supports.

Adult Literacy Technology Projects

Programs

Programs that continue to assist with computer literacy currently include Rosetta Stone, English Tutor, Side by Side Interaction, Focus on Grammar Basics, GED Test Preparation, Learn to Speak English, Mavis Beacon, Atomic Learning, GCFLearnFree.org, Microsoft Office Suite, and numerous Web sites appropriate for adult learning.

Slices of Life

Every year learners in Milwaukee are encouraged to work with their tutor to complete a short essay for the yearly publication *Slices of Life*, a booklet published locally. Learners are thrilled at the thought of seeing their name and works published for the first time in their lives. Learners work diligently with their tutors over many months to convey their thoughts and reasons for why they are pursuing adult education. The end result: hundreds of first-time authors who are proud of their accomplishment and ecstatic to share it with family, friends, and their tutor.

Comic Book

It is important to demonstrate the various types of computers for first-time technology learners. During the first two weeks, learners work on personal computers and become familiar with their assigned computer. During the third week, learners are exposed to the Apple iBook, iMac, and iPod. Their quest for new knowledge and excitement about being able to create their own comic book makes for a wild, hands-on, laughter-filled environment. In this way, learners are having fun while gaining important knowledge, and are openly and actively communicating with each other. As a team, we create a masterpiece from which we produce a comic book for every participant.

iPod

Many adult ESL learners struggle with pronunciation. With that in mind, the integration of the iPod has opened the door for immediate feedback. Learners and their tutors are able to speak into the iTalk connected to the iPod and are able to listen to themselves immediately. There are many podcasts also available for ESL learners to listen to and practice with to help them communicate more clearly with their children.

Digital Video

Projects involve a digital video camera, a speaker, a tripod, and a team of creative learners. This technology creates an environment that moves learning into a new dimension.

- Appearing on video is powerful. A screen presence in front of an audience feels great and means you are somebody to be paid attention to.

- Videotaping allows you to practice and edit what you want to say. We always give the learners the right to say "cut" when they fumble or feel awkward. Those "do-overs" give learners a chance to articulate what they want to say and practice until they feel

comfortable. Often, learners hate to edit their written essays ("I wrote it and you said it was good—I'm done"). They seem to have a much keener ear for language when they listen to themselves and often catch mistakes, awkward phrasing, or sentences that go on and on. Knowing that each person has only a minute or so to talk on tape really encourages learners to think about what they want to say and say it clearly. These are skills that are applicable to workplace communication, GED writing, and discussions on academic topics.

○ Learning how to create a film project has a multiplier effect for learners. Just getting their hands and heads around the technology moves things in a new direction. It can also change the social identity that learners project, as they are now filmmakers, producing knowledge and information for others. They use the same kinds of skills that professionals use—storyboarding, setting scenes, taping, editing, integrating graphics and music, and then going public with their work. For these learners, being a filmmaker (even if their team only does a short "how-to" video on how to change a tire or how to make a romantic dinner) changes their identity from someone who struggles with English or doesn't read well to someone who is a "film producer" (professional titles are used as part of the credits).

PowerPoint

Learner-created videos and PowerPoint presentations can be used in orientation and as a means of broadcasting to the community that a particular literacy program connects learning to the real world and offers skills that count beyond the test. Learners are able to create a PowerPoint presentation that conveys a specific message about a particular subject, such as a sports figure, an artist, a personal hero, a well-loved pet, or even their workplace's production-line assembly.

Our final project was student driven and shown to peers and co-workers, earning them promotions for their stellar work and mastery of technology through the JobLink Workforce Development Computer Literacy Program. Learners excelled, and felt proud about their work in class. The learners made a difference in their educational functioning level, improved their workplace morale, and received promotions at their respective employers—thereby increasing their earned wages and contributions to their family.

Conclusion

Technology is the motivational tool that will afford adult learners endless opportunities in the twenty-first century. The challenge lies within the circle of adult literacy service providers to supply adequate resources and knowledgeable staff and tutors with the ideal skills to apply these learning solutions to their benefit.

Adult learners understand the importance of technology, which also gives them the motivation they need to stay competitive in today's economy. Adult learners must be able to access information through technology: it helps them think critically, solve problems, and communicate as members of a collaborative team. Technology has allowed learners to excel to new heights—proof that the phrase "the sky's the limit" is merely a springboard for today's adult learners to achieve something beyond what was once thought to be unachievable.

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