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ABSTRACT

Integrating technology into the Adult Basic Literacy Education (ABLE) classroom can be very helpful to students and teachers, but it requires a shift in the teacher's role. The idea of "delivering" instruction--teacher-centered classes or tutor-directed lessons--should be replaced with student-centered, self-paced learning. Although the first lessons need to be teacher centered as basic instruction is given, online tutorials can be used to help students acquire the basic skills needed to use technology. Following the acquisition of basic skills, teachers can construct activities and suggest learning games that reinforce classroom learning and aid in the acquisition of real-life skills with immediate rewards. Once students have mastered these skills, they may start to acquire additional skills on their own through the Internet, focusing on the things they need to know. In addition, technology can be used in the instructional setting to develop critical thinking, problem-solving, communication, and collaboration skills. Ideas for using technology in the classroom include the following: asking students to create original sentences incorporating vocabulary words by using a word-processing program; using an encyclopedia on CD-ROM to learn more about a person featured in a story the students have read; arranging e-mail pen pal correspondence with an ABLE program in another area; having the class publish a program newsletter; using interactive Internet Web sites to help students analyze their diet; and asking students to use a word processing program to write journal entries. (The document contains 33 resources, including articles, online tutorials, games, virtual classrooms, free e-mail, and Web sites.) (KC)

Strategies for the 21st Century: Integrating Technology into the ABLE Environment

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Adult educators often speak of using technology to ***deliver*** instruction; but ***delivering*** instruction may not be the most effective use of technology and the seemingly endless resources offered on the World Wide Web. Effective use of technology in adult basic and literacy education is not so much about delivering information to the passive student, but about opening the world of information to an active, inquiring mind. This requires, to some extent, a shift in the focus of the ABLE classroom -- away from teacher-centered classes or tutor-directed lessons and on to student-centered, self-paced learning. In this environment, technology can play a key role.

We accept that student goal setting and collaboration between instructor and student in determining the best educational path as a basic foundation of successful adult education. Using technology effectively in instructional settings extends and promotes the process of student-directed learning by allowing students greater access to information and ways to process, synthesize, apply and present it. It is the very fact that the instructor no longer "delivers" instruction to passive students that makes the effective use of instructional technology so exciting.

The first step in using technology effectively in the ABLE environment is to redefine the role of the teacher/tutor and student. The instructor -- traditionally the source of all knowledge, the primary motivator behind student inquiry and learning -- becomes a less directive force in the educational process. Instead, the teacher becomes a facilitator of knowledge acquisition and synthesis, assisting students in the basic skill acquisition needed to access technology, but then allowing the student to learn independently and at his/her own pace.

The student -- traditionally a passive receptor of instruction -- becomes the active learner, using technology to explore topics of interest or information necessary to complete a task.

Technology in itself is only a tool -- a device or service used to accomplish a task. What gives technology its power in the classroom is not its impressive speed or capabilities; instead it is what technology causes or inspires us to do that makes it a powerful educational medium. If the overwhelming information available on the Internet forces students to think critically about what they read and see and hear, then it is this application of technology by the learner that gives it its value in adult education and literacy instruction.

Basic Skill Acquisition

Just as in any basic skill acquisition, the instructor plays a much larger role in the education of the student, setting learning objectives, choosing appropriate materials and carefully controlling the flow of information and the pace of learning. An instructor can begin by providing basic tutorials on using the hardware and software, navigating an operating system or accessing the Internet. Students can benefit from this instruction in the classroom environment or one-on-one with a tutor.

There are dozens of online tutorials instructors can use to help students acquire the basic skills needed to use technology. Simple games like Solitaire® can help students develop mousing skills; keyboarding tutorials like Mavis Beacon® or Typing Tutor® will offer instruction and practice to help students master the keyboard.

Acquiring basic technology skills like keyboarding or mastering file systems can be an extended process, so instructors should offer more immediate rewards for using technology. Once again, challenging simulation games and an opportunity to surf the WWW can inspire students to continue to practice and develop more mundane skills. Don't wait till a student has acquired a 50 wpm typing ability before allowing students the opportunity to explore the Internet or use a CD-ROM encyclopedia.

Just as printing upper- and lower-case letters is not the same as writing an essay, moving a mouse or pointing and clicking do not indicate a mastery of technology. Students will increase their understanding the basic functions of the software if they are given real-life tasks to practice software use -- perhaps creating an event poster for a yard sale using a simple word processing program or locating the local city bus schedule on the WWW. Once again, constructing activities that reap immediate real-life benefits for the student will encourage students to remain committed to the educational process.

Many computer learning games fall into the category of drill and practice. When used effectively, this technology will be used to reinforce learning in the classroom -- as a follow-up activity to give students the practice needed to master addition or fractions or basic grammar. The key to proper use of this technology is to create clear, precise learning objectives and provide a varied mode of instruction to help students with different learning styles grasp the concepts and reinforce learning with activities that appeal to a wide variety of learning styles. Educational software -- with its multimedia approach -- will provide the reinforcement needed to help visual, auditory and kinesthetic students master a basic skill.

A Fork in the Road

Once students have begun to acquire the skills necessary to navigate an operating system, save a file to disk or type a URL in a web browser, you may reach a point where students in your classes will begin to part ways. Once again, decisions on how to incorporate technology into instruction should be driven by the goals set by students, their immediate needs and the learning objectives thoughtfully developed by the teacher or tutor to help students achieve these goals.

For students who have a need to use technology in the world of work, acquiring the skills necessary to use word processing, spreadsheet and database programs will be the primary focus. Practical uses of the software, including creating databases with sample data or a spreadsheet for a fictional business, will be the primary focus of instruction. In this case, the issue is no longer effectively integrating technology into instruction -- the issue is teaching the technology itself. Online tutorials, packaged tutorial software, texts and so forth can be used to help students acquire these very concrete workplace skills.

However, not all students have a primary need to acquire mastery of certain software packages. But, since all students will find themselves faced with the need to use technology in the "real world" technology should remain a part of instruction.

These students will have other learning objectives -- like being able to locate public services in a new city; learning to read at a 10th grade reading level; speaking English well enough to be understood by coworkers at a new job; or reading well enough to decipher the hazardous waste warnings on containers at the plant. Technology is one avenue to acquiring these skills.

Shaping the Active, Inquiring Student

Once again, effective integration of technology in an instructional setting begins with the instructor and student -- the identification of student goals and needs, the development of learning objectives and IEPs and a recognition of a student's style of learning. **Technology integration in the instructional setting appears to have its biggest impact on the development of critical thinking, problem-solving, communication and collaborative skills.**

Use technology such as encyclopedias on CD -ROM or the Internet to supplement other learning materials -- texts, real-life materials like employee handbooks, applications and manuals. Let's face it, paper and pencil are still a part of life in the "real-world" and do require that our students learn to work with this medium as well. But open up the almost infinite possibilities of e-mail, listservs, chat-rooms and the like to exchange information, apply for a job online or review the newest Social Security Benefits guide.

Create a web site where students can post their poetry, essays and other writing projects. Being published on the Internet provides a forum for students to express ideas; the Internet gives students an audience other than the instructor for whom to write. Having an audience of peers who share similar interests compel students to pay more attention to the style, syntax, spelling, vocabulary and grammar of their writing.

Use technology to prepare for or follow-up on class discussion. Encourage students to use basic Internet search techniques to find more information on a topic of interest to the student -- or to discover more about a person described in a recently completed skill book lesson.

Participate in an exciting online discussion with a famous person or noted expert. Have students prepare questions and comments prior to the discussion. Knowing that their writing will be viewed by the public will inspire them to carefully record thoughts and questions and pay special attention to the mechanics of writing. The further benefits of online discussions, e-mail exchanges and chats is that thoughts are recorded in writing in a semi-permanent state; students can return to discussions later and review the flow of ideas and reflect critically about the discussion.

Incorporating technology in the classroom is not simply about using technology to access the work of others. Effective use of technology allows students to transform collected information into a new product. For example, a student may search and create a collection of links to government web pages that provide information useful in preparation for a United States citizenship examination. Or students may create an original product -- a desktop presentation slide show outlining basic safety guidelines to follow when using an industrial saw.

Virtual classrooms are growing in popularity as entire adult education classes go online -- designing and maintaining a class web site, creating original web content and sharing their culture and interests with other virtual classrooms around the world.

Teachers are seeing real results when they ask students to use technology to explore the Internet with the goal of sifting through an immense collection of information; critically evaluating the information for accuracy and bias; comparing different viewpoints; discovering underlying motives; and constructing

their own understanding from the material. Even very biased, inaccurate web sites can teach students something about reading for comprehension and critical analysis.

Technology also has a way of inspiring collaboration. Simply trying to troubleshoot a printing problem or asking a classmate how to set a tab in a word processing program leads to collaboration between students and instructors. How many times have you seen two or three people huddled intently around a computer screen solving a spreadsheet formatting dilemma or viewing live video images from a recently launched shuttle?

Asking students to collaborate on a project involving technology is a natural way to help build skills in communication, problem-solving and conflict resolution skills.

Collaborative efforts also help solve the problem of mixed skill-level classes. Each student in a collaborative group brings a special skill or talent to the group. One student may be adept at the keyboard while another student may have a greater flair for phrasing the written word. Perhaps another student struggles with reading and writing, yet has had years of experience working within a group or knows the subject from first-hand experience. Ask students to monitor their own work and the contributions of each member. Evaluate not only the final product but the process as well.

Technology is the invention of the human mind and as such, should be viewed, not as an alien imposition on the classroom, but as yet another tool adults can use to manage the information in the world around them.. Educators can adapt existing curriculum and lesson plans to incorporate the use of a technological tool or tap into the creative energies of students to help them succeed in a project-based learning environment.

More Ideas for Educators . . .

- Design a chart using basic data in an electronic spreadsheet and use the chart making function to create a graphical display of the data. Ask other students to read and interpret the chart.

- Design an online scavenger hunt and let students use basic search techniques to find answers to obscure but interesting questions. Then ask the students to create their own scavenger hunts for each other.

- Ask students to create original sentences incorporating vocabulary words using a word processing program. Have students check one another's work and use the editing features of the application to correct errors.

- After reading a story in a skill book, have students use an encyclopedia on CD-ROM to learn three new things about a person, place or thing in that story. Ask students to record these new discoveries and send them via e-mail to you.

- Contact an ABLE program in another part of the state or country and arrange e-mail Pen Pal matches with your own students. Each week, ask your students to respond to their Pen Pals' e-mail messages using free e-mail accounts you've acquired on the Internet.

- ❖ Turn a part or even all of your program newsletter publishing over to a student or class. Ask students to type, format and arrange articles in the newsletter. Exchange your newsletter with those of other organizations and ask students to analyze the effectiveness of the techniques used in each one.

- ❖ Use interactive Internet web sites to help students analyze their current diet and make appropriate changes in food choices. Plan and publish a weekly menu using a word processing program; create a shopping list and compare prices quoted in local grocery store fliers using a chart created on an electronic spreadsheet.

- ❖ Ask students to complete journal assignments using word processing programs or submit journal items via e-mail to an instructor or tutor.

- ❖ When arranging your next tutor recruitment and training, ask students to create and maintain a simple electronic database to record information on training participants.

- ❖ Create a virtual classroom web site and post student contributions to the Internet. Eventually, hand over the maintenance to students and ask them to create their own individual web pages linked to the classroom page.

Thought-Provoking Article:

Owston, Ronald D. "The World Wide Web: A Technology to Enhance Teaching and Learning?" http://www.edu.yorku.ca/~rowston/article.htm (1 Nov. 1999).

This is a draft version of an article that appeared in Educational Researcher, Vol. 26, No. 2, March, 1997, pp. 27-33.

Online Tutorials

ZDNet www.zdnet.com/zdhelp

Click on How-To to find Step-by-Step tutorials and beginner's guides on Computer Basics, Macintosh, Windows 95, 98 and NT, the Internet, etc.

WebMonkey www.hotwired.com/webmonkey

The web developer's online resource

Internet Tutorials from the University At Albany Libraries www.albany.edu/library/internet

Basic Internet, How to Connect, Research Tips, Conducting Research, Evaluating Sites, Netscape Navigator and Communicator

Tutorials www.geocities.com/Athens/8281

Tutorials on Windows 95, 98, 2000, NT; hardware and software tips

Games

The School House Review www.worldvillage.com/wv/school/html/scholrev.htm

Reviews of educational software for adults and children. Check out the Adult Learning section.

The Review Zone www.TheReviewZone.com

Reading/writing; Math and Science; Geography – History – Social Studies; Games – Problem-Solving; Family Computing

PEP Registry of Educational Software Publishers
www.microweb.com/pepsite/Software/publishers.html
(PEP: Resources for Parents, Educators and Publishers)

The PEP Registry is a comprehensive listing of Educational Software Companies, with direct links to their sites. It does not necessarily imply endorsement of a product or company.

Virtual Classrooms

Classroom Virtual Visit Project, the National Institute for Literacy

http://www2.wgbh.org/mbcweis/ltc/alri/vvclass.html

For information on how to create a virtual classroom

http://www2.wgbh.org/mbcweis/ltc/alri/vv.html

Virtual Classroom http://www.njit.edu/Virtual_Classroom/

Definitions and the technology involved

Free E-mail

Microsoft HotMail www.hotmail.com

Yahoo's Free E-mail for Life www.yahoo.com

Click on Free E-mail at the top of the page.

Humanities Interactive www.humanities-interactive.org/

A project consisting of online exhibits produced by the Texas Humanities Resource Center in Austin, Texas; the interactive exhibits consist of annotated images, learning resources, essays, educational worksheets, associated games and multimedia presentation

The Digital Classroom www.nara.gov/education/

A resource for materials from the National Archives designed to encourage teachers of students at all levels to use archival documents in the classroom; includes methods for teaching with primary sources

EdSitement http://edsitement.neh.gov/

A joint project of the National Endowment for the Humanities, the Council of the Great City Schools, MCI WorldCom and the National Trust for the Humanities

The best of the humanities on the web; a growing collection of the most valuable online resources for teaching English, history, art history and foreign languages

The History Channel www.HistoryChannel.com

Watch it on television tonight, dig deeper tomorrow

Odyssey Online www.emory.edu/CARLOS/ODYSSEY/

A journey to explore Near Eastern, Egyptian, Greek, Roman and sub-Saharan African cultures; online exhibits, puzzles, games and worksheets; includes teacher's notes and resource lists

Dave's ESL Café http://www.pacificnet.net/~sperling/eslcafe.html

Online tutorials, resources, links and activities geared to ESL instruction

Ellis Island Virtual Tour www.capital.net/~alta/index.html

Just one of hundreds of virtual tours; visit places and meet people without the travel headaches

Teaching with Historic Places www.cr.nps.gov/nr/twhp

Lessons and resources from the National Park Service that support the teaching of history, social studies, geography and civics

To find out more . . .

Integrating Technology in Schools www.unm.edu/~jeffryes/its1.htm

Internet Applications in the Classroom www.unm.edu/~jeffryes/apps.htm

Tech * Learning www.techlearning.com

Great Resources on the WWW . . .

ABLE Net www.lhup.edu/ablenet

The home of Pennsylvania's adult basic and literacy education technology initiative; visit this site for links to great web sites and check out the great workshops offered by Master Technology Trainers located throughout the state.

AACE – Association for Advancement of Computing in Education www.aace.org

The association is an international educational and professional organization dedicated to the advancement of the knowledge, theory and quality of learning and teaching at all levels with information technology.

Interactive Multimedia Electronic Journal of Computer-Enhanced Learning http://imej.wfu.edu

A project of AACE and Wake Forest University, this collection of online educational modules demonstrates the quality and accessibility of Internet-based instruction.

InSITE http://teach.virginia.edu/insite

Established to explore the ways in which the Internet could benefit teacher education programs throughout the world.

Using the Internet and Technology in the Classroom http://edcen.ehhs.cmich.edu/~tvantine/edint.html

A collection of reports and essays on successful integration of technology in the classroom.

Eisenhower Consortium for Mathematics and Science Education at SERVE

www.serve.org/Eisenhower/TeacherRes.html

Links to online resources for teachers and students

International Society for Technology in Education www.iste.org/resources

Teacher resources collection by the society

Federal Resources for Educational Excellence www.ed.gov/free

Hundreds of educational resources supported by the Department of Education

PBS Adult Learning Resources for Learners www.pbs.org/adultlearning

PBS LiteracyLink www.pbs.org/adultlearning/literacy

GED, workplace and literacy resources for adult learners; access to online professional development for teachers; topics include the effective integration of technology in adult basic and literacy education

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