20 Technology Skills Every Educator Should Have

By Laura Turner

During the last 15 years, we in education have moved at light speed in the area of educational technology. Whether you are involved in higher ed, secondary ed, elementary ed, or special ed, all of us find it difficult to catch up, keep up, and put up with fast-moving computer-based technology. Not since the introduction of the blackboard have we seen a piece of equipment make such a difference in how we teach. Today, not only do we use computers, but we also have laptops, wireless laptops, and tablet PCs. In addition, we have the World Wide Web, scanners, CD burners, USB drives, digital cameras and digital video cameras, PDAs, as well as video and DVD players. And most educators use a variety of tools-including video, e-mail, desktop conferencing, online programs such as WebCT and Blackboard, as well as video conferencing-to teach. Thus, it is no longer acceptable for educators to be technology illiterate.

With that in mind, here is a comprehensive listing of the technology skills that every educator should have. Because as computer and associated technologies continue to change and evolve, educators must continue to strive for excellence in their work. Today that includes continued time and effort to maintain and improve their technology skills (as much as some educators do not want to admit).

Here are 20 basic technology skills that all educators should now have:

1. Word Processing Skills
2. Spreadsheets Skills
3. Database Skills
4. Electronic Presentation Skills
5. Web Navigation Skills
6. Web Site Design Skills
7. E-Mail Management Skills
8. Digital Cameras
9. Computer Network Knowledge Applicable to your School System
10. File Management & Windows Explorer Skills
11. Downloading Software From the Web (Knowledge including eBooks)
12. Installing Computer Software onto a Computer System
13. WebCT or Blackboard Teaching Skills
14. Videoconferencing skills
15. Computer-Related Storage Devices (Knowledge: disks, CDs, USB drives, zip disks, DVDs, etc.)
1. Word Processing Skills

Educators should be able to use some type of word processing program to complete written tasks in a timely manner. See the following Web sites for helpful information and tutorials.

- **University of Alberta: Online Word Processing Tutorials**
  www.quasar.ualberta.ca/edpy202/tutorial/wptut/wpweb.htm
  This page is a collection of Internet links that provide word processing instruction.

- **Tutorialfind.com: Word Processing Tutorials**
  www.tutorialfind.com/tutorials/computerbasics/wordprocessing
  This site has a number of word processing tutorials, and is also a portal for a variety of other tutorials.

- **2Learn.ca Education Society: Word Processing Teacher Tools**
  www.2learn.ca/teachertools/Wordprocessing/wphow2.html
  Word processing tutorials for Microsoft Word, Corel WordPerfect, and Appleworks.

- **Essential Microsoft Office 2000: Tutorials for Teachers: Word**
  www.pitt.edu/~poole/Officeindex2.html
  Essential Microsoft Office 2000 tutorials from the University of Pittsburgh's Bernie Poole and Rebecca L. Randall.

2. Spreadsheets Skills

Educators should be able to use some type of spreadsheet program to compile grades and chart data. See the following Web sites for helpful information and tutorials on these skills.

- **University of Alberta: Online Spreadsheet Tutorials**
  www.quasar.ualberta.ca/edpy202/tutorial/spreadsheet/spreadsheet.htm
  This page is a collection of Internet links that provide instruction on using spreadsheet programs.

- **Teachnology: Spreadsheets Teaching Theme**
  http://teachers.teach-nology.com/themes/comp/spreadsheets
  Spreadsheet tutorials from Teachnology, the Web Portal for Educators

- **Excel in TutorGig Tutorials**
  www.tutorgig.com/showurls.jsp?group=531&index=0
  Spreadsheet tutorials from TutorGig.

- **Essential Microsoft Office 2000: Tutorials for Teachers: Excel**
  www.pitt.edu/~poole/Officeindex2.html
Essential Microsoft Office 2000 tutorials from the University of Pittsburgh's Bernie Poole and Rebecca L. Randall.

- **Black Hills State University: Technology for Teachers: Spreadsheets**
  www.bhsu.edu/education/edfaculty/turner/Technology_for_Teachers.htm#Spreadsheets
  A listing of various Web sites for spreadsheet tutorials and related information.

3. Database Skills

Educators should be able to use some type of database program to create tables, store and retrieve data, and query data. See the following Web sites for helpful information and tutorials on these skills.

- **University of Alberta: Online Database Tutorials**
  www.quasar.ualberta.ca/edit202/tutorial/database/database.htm
  Database tutorials from the University of Alberta.

- **Technology and Telecommunications for Teachers: Database Tutorial**
  www.k12.hi.us/~tethree/01-02/tutorials/db
  This tutorial was created by the Advanced Technology Research Branch of the Hawaii Department of Education to provide supplemental productivity tool information to teachers enrolled in the Technology Telecommunication for Teachers (T3) Program.

- **Microsoft Access Database Tutes**
  www.rd-robotics.com/accesscommunity/tutes
  Microsoft Access database tutorials from R&D Robotics.

- **Essential Microsoft Office 2000: Tutorials for Teachers: Access**
  www.pitt.edu/~poole/Officeindex2.html
  Essential Microsoft Office 2000 tutorials from the University of Pittsburgh's Bernie Poole and Rebecca L. Randall.

- **Black Hills State University: Technology for Teachers: Databases**
  www.bhsu.edu/education/edfaculty/turner/Technology_for_Teachers.htm#Databases
  A listing of Web sites for database tutorials, help and related information

4. Electronic Presentation Skills

Educators should be able to use electronic presentation software to create and give electronic presentations. See the following Web sites for helpful information and tutorials on these skills.

- **PowerPoint in the Classroom**
  www.electricteacher.com/tutorial3.htm
  A list of commonly tasks used while working in PowerPoint, and a step-by-step guide on how to perform them.

- **University of Victoria: PowerPoint I**
  www.educ.uvic.ca/compined/Level1/ppoint/ppointI.htm
  PowerPoint tutorials and information from the University of Victoria in British Columbia.
5. World Wide Web Navigation Skills

Educators should be able to navigate the World Wide Web and search effectively for data on the Internet. See the following Web sites for helpful information and tutorials on these skills.

- **Black Hills State University: Search Engines**
  www.bhsu.edu/education/edfaculty/lturner/Search%20Engines.htm
  An educational Web portal that provides links to search engines and searching techniques.

- **Finding Information on the Internet: A Tutorial**
  www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html
  This tutorial presents the substance of the Internet workshops offered by the Teaching Library at the University of California at Berkeley.

- **Searching the Web in the Yahoo! Directory**
  http://dir.yahoo.com/Computers_and_Internet/Internet/World_Wide_Web/Searching_the_Web
  A listing of the top search engines and directories categorized by Yahoo!

- **Online Writing Lab: Searching the World Wide Web**
  http://owl.english.purdue.edu/handouts/research/r_websearch2.html
  Purdue University's Online Writing Lab Searching the Internet tutorial

- **How to be a WebHound**
  www.mcli.dist.maricopa.edu/webhound/
  The WebHound site shows you how to use various Web search tools.

- **ICYouSee: T is for Thinking**
  www.ithaca.edu/library/training/think.html
  A guide to critical thinking about what you see on the Web.

6. Web site Design Skills
Educators should be able to design, create, and maintain a faculty/educator Web page/site. See the following Web sites for helpful information and tutorials on these skills.

- **The WWW Help Page**  
  http://werbach.com/web/wwwhelp.html  
  Web Page Design Help from Kevin Werback, a portal type help site.

- **Netscape's Resources for Creating Web sites**  
  Resources for Creating Web sites page from Netscape

- **Teachers.Net Homepage Maker**  
  http://teachers.net/sampler  
  Teacher Web site creation - interactive from Teachers.net

- **Web Adventure!**  
  www.webdiner.com/webadv  
  Web Adventure a beginners design and creation Web site

- **BUBL Link: Catalogue of Internet Resources**  
  http://bubl.ac.uk/link/w/webpagedesign.htm  
  Web Page Design portal page.

- **How Web Pages Work**  
  www.howstuffworks.com/web-page.htm  
  How Stuff Works page on how Web Pages Work

- **Creating a Web Page**  
  www.marshall-es.marshall.k12.tn.us/jobe/webpage.html  
  Web Page Design from Hazel Jobe aMarchal Elementary in Lewisburg TN.

- **Technology for Teachers**  
  www.bhsu.edu/education/edfaculty/ltturner/Technology_for_Teachers.htm  
  A listing of Web sites for web design, creation help and related information

7. E-Mail Management Skills

Educators should be able to use e-mail to communicate and be able to send attachments and create e-mail folders. See the following Web sites for helpful information and tutorials.

- **Computer Skills Tutorials**  
  http://psychology230.tripod.com/canyons_online/id4.html  
  E-mail tutorials from Online Learning at the College of the Canyons

- **Web Site 101: Small Business E-Mail Tutorial**  
  www.Web site101.com/email_e-mail  
  E-mail tutorials and e-mail basics from Web site101.com

- **UNITAR's PATIT Training Program: E-Mail Basics**  
  www.un.int/unitar/patit/onlinetutorials/emailbasics.htm  
  E-mail basics from UNITAR

- **VisualTutorials.Com**
8. Digital Cameras Knowledge

Educators should know how to operate a digital camera and understand how digital imagery can be used. See the following Web sites for helpful information and tutorials.

- **Digital Photography Review**
  www.dpreview.com
  Digital Photography Review is an independent resource dedicated to the provision of news, reviews and information about Digital Photography and Digital Imaging published at the Internet address www.dpreview.com.

- **How Digital Cameras Work**
  www.howstuffworks.com/digital-camera.htm
  How Digital Cameras Work by How Stuff Works.

- **The Casio Classroom: 1001 Uses for a Digital Camera**
  http://pegasus.cc.ucf.edu/~uefcasio/qvuses.htm
  This site is designed as a reference tool putting educators in touch with creative educational applications for digital cameras in educational settings.

- **Digital Cameras in Education**
  Web site by Keith Lightbody - ICT Consultant Digital cameras are one of the single most successful Information and Communications Technology purchases you can make in a school. Promote visual literacy - encourage students to use digital cameras!

- **Technology for Teachers: Digital Cameras**
  www.bhsu.edu/education/edfaculty/ltturner/Technology_for_Teachers.htm
  A listing of Web sites about Digital Cameras and related information

9. Network knowledge applicable to your organization.

Educators should know the basics of computer networks and understand how their school network works. See the following Web sites for helpful information and tutorials.

- **Knowledge Network Courses for Teachers**
  www.knowledgenetwork.co.za/educators/educators.htm
  Knowledge Network, established in 1994, specializes in integrated technology solutions for schools, the development of teachers and learners in schools, IT Project Management for Schools and IT skills training and IT skills evaluations for companies.

- **An Educator's Guide to School Networks**
http://fcit.usf.edu/network/default.htm
An Educator's Guide to School Networks

- **Discovery Schools Kathy Schrock's Guide for Educators**
  http://school.discovery.com/schrockguide/sci-tech/scicom.html
  Kathy Schrock's Guide for Educators - Computing and Technology

- **Kid Source Online**
  www.kidsource.com/kidsource/content2/how_can_computer_network.html
  Kids Source Online - How Can Computer Networking Be Used in the Classroom?

- **What is a Computer Network**
  http://archive.ncsa.uiuc.edu/edu/nie/overview/handbook/ch2.1.html
  A Guide to Networking a K-12 School District

- **How to Guide: The Basics of Information Technology**
  www.enterprise-ireland.com/ebusiness/guides/basics_bht/basics_p2a.htm
  Beginners Guide to Networking

### 10. File Mgmt & Windows Explorer Skills

All educators should be able to manage their computer files and be able to complete the following tasks; create, and delete files and folders, move and copy files and folders using the My Computer window and Windows Explorer. See the following Web sites for helpful information and tutorials.

- **Grant MacEwen College: Online Student Tutorial**
  http://learn.gmcc.ab.ca/lol/students/tutorial/mod2/2obj2fms.html
  Online Student Tutorial - File Management Skills

- **Oregon State University Extension Service**
  http://extension.oregonstate.edu/ectu/training/lessons/FileManagement.pdf
  File Management from Oregon State University - Extension Computing Technology Unit.

- **Basic Computer Skills Tutorial**
  www.umuc.edu/distance/odell/ctla/basic_skills
  UMUC Center for Teaching and Learning - Basic Computer Skills tutorial

- **Alverno College's Basic Computer Skills Tutorials**
  www.depts.alverno.edu/cil/mod1
  Alverno College - Basic Computer Skills Tutorials.

### 11. Downloading Software from the Web Knowledge - including e-Books

All educators should be able to download software from the web and know of the major sites that can be used for this purpose. See the following Web sites for helpful information and tutorials.

- **Tucows.com**
  www.tucows.com

- **Download.com**
www.download.com

- Shareware.com
  www.shareware.com

- FreewareFile.com
  www.freewarefiles.com

- Computer Tutorials from Carol
  http://carolirvin.com/tutorials.htm
  Carol Irvin's Free Computers Tutorials

**e-Books**

- Microsoft Reader
  www.microsoft.com/reader
  Microsoft Reader download site.

- Download Adobe Acrobat Reader
  www.adobe.com/products/acrobat/readstep2.html
  Acrobat Reader download site.

- E-Book Links
  www.bhsu.edu/education/edfaculty/ltturner/Ebooks.htm
  A listing of download sites for readers and e-books, help and related information.

- Adobe eBooks Central
  www.adobe.com/epaper/ebooks/main.html
  Adobe's e-Book Web site

- The eBook Directory
  www.ebookdirectory.com

- eLibrary- Books and Site Links
  www.web-books.com/cool/ebooks/Library.htm
  Free eBooks and Best Sites.

- Free eBooks.Net
  www.free-ebooks.net
  Free e-books on the Internet Web site.

- eBook.com (Australia)
  Free e-books Web site from ebooks.com

**12. Installing Computer Software onto a Computer System**

Educators should be able to install computer software onto a computer system. See the following Web sites for helpful information and tutorials.

- Basics of Computing: Installing Software
  http://members.aol.com/shobansen3/installing.html
Installing Software Tutorial

- **Basic Computer Skills for Teachers**
  www.aps.edu/aps/sw_depart/basicskills/Installing.html
  Basic Skills for Teachers - How to Install Software
- **Regents of the University of Minnesota Master Internet Volunteer Program**
  www.extension.umn.edu/miv/curriculum/awdinst.html
  Downloading and Installing Software Instructions.
- **Welcome to Computer Training Tutorials**
  www.ckls.org/~crippel/computerlab/tutorials
  Software Installation Problems Tutorial

13. WebCT or Blackboard Teaching Skills

Educators should be aware of these two online teaching tools and know about them and/or know how to use them to teach or take classes. See the following Web sites for helpful information and tutorials.

- **WebCT Web site**
  www.webct.com
- **Blackboard Web site**
  www.blackboard.com
- **ICON- Iowa Courses Online**
  http://icon.uiowa.edu/index.shtml
  WebCT and Blackboard courses
- **Comparison of Online Course Delivery Software Products**
  www.marshall.edu/it/cit/webct/compare/comparison.html
  Complete side by side comparison of various online course delivery software products.

14. Video Conferencing skills

Educators should be able to use a video conferencing classroom and understand the basics of teaching with Video Conferencing. See the following Web sites for helpful information and tutorials.

- **JISC Technology Applications Programme**
  www.cse.dmu.ac.uk/~jtb/jtap-037.htm
  Practical Guidelines for Teaching with Video Conferencing from JTAP
- **SBC Knowledge Network Explorer**
  www.kn.pacbell.com/wired/vidconf/intro.html
  An Introduction to Video Conferencing from SCB
- **Teaching with Technology**
  www.powertolearn.com/articles/teaching_with_technology/video_conferencing_for_teaching_
15. Computer Related Storage Devices Knowledge.

Educators should understand and know how to use the following data storage devices: disks, CDs, USB drives, zip disks & DVDs. See the following Web sites for helpful information and tutorials.

**Diskettes**

- **Disabled Women's Network Ontario Computer Basics**
  http://dawn.thot.net/cd/135.html#2
  Computer Basics - diskettes
- **Hardware Basics: Inside the Box**
  www.cse.psu.edu/~domico/CMPSC101/Lecture-1.htm
  Computer Hardware Basics - diskettes
- **Formatting Diskettes**
  www.vertical-market.com/gui/W2_1099GUI/Formatting%20Diskettes.htm
  Step by step guide to formatting diskettes
- **How Floppy Disks Work**
  http://computer.howstuffworks.com/floppy-disk-drive.htm
  How Stuff Works explains How Floppy Disks Work

**CDs**

- **Cognigen PC Burning Basics**
  CD Burning Basics
- **Creating your own CDs**
  The Microsoft Networks guide to burning CDs
- **Information on CD-ROM Drives**
  www.computerhope.com/help/cdrom.htm
Computer Hardware - CD Information

- **PC Guide's About CD-ROM Drives**
  www.pcguide.com/ref/cd/index-c.html
  CD-ROMs - The PC Guide

- **Zip CDs User Manual**
  www.iomega.com/support/manuals/zipcda8x4x32/use_discs.html
  Selecting and Using CDs.

- **Making Data CDs**
  www.ivytech.edu/madison/hr/Instructions%20for%20Creating%20a%20CD.doc Making Data CDs Using the Easy CD Creator

- **Wikipedia, the free encyclopedia: CDs**
  http://en.wikipedia.org/wiki/Compact_disc
  CDs from Wikipedia

**USB Drives**
(also known as pen drives, flash drives, key chain drives, portable hard drives)

- **SearchStorage.Com: Jump Drive**
  http://searchstorage.techtarget.com/sDefinition/0,,sid5_gci869057,00.html
  Keychain Drive Information

- **#1 Pen & Flash Drives**
  www.pen-flash-drives.com
  Flash Drive Information

- **How USB Ports Work**
  http://computer.howstuffworks.com/usb.htm
  How USB Drives Work

- **USB Floppy Disk Driver FAQs**
  www.yedata.com/support/floppydrives_faq.shtml
  FAQ about USB Drives

- **USB Hard Drive By Crazy PC**
  www.cluboverclocker.com/reviews/drives/flash_drives/q_usb_hd
  USB Drive Information

- **The MemoryGuide.com**
  www.the-memory-guide.com/usb-drive.html
  USB Drives - A New Wave in PortableStorage

**DVDs**

- **How DVDs Work**
  http://electronics.howstuffworks.com/dvd.htm
  How D’es a DVD Work? from How Stuff Works

- **How It Works: DVD**
  www.pcworld.com/howto/article/0,aid,14697,00.asp
How Do DVDs Work? from PC World

- **Sony DVD FAQs**
  www.sonyburners.com/faqs
  DVDs FAQs

- **Use DVDs for Archiving and Storage**
  www.datamind.co.uk/merchant/dvd_for%20storage_backup.htm
  Use DVDs for Storage and Archiving from Datamind.co.uk

- **KarbosGuide.com: DVDs**
  www.karbosguide.com/hardware/module4c3a.htm
  DVD Media

**Zip Disks**

- **Iomega's Home Page**
  www.iomega.com/na/landing.jsp
  Zip Drive Information from iomega

- **Zip Drive FAQs**
  http://phyweb.lbl.gov/compute/local_zip.html Zip Drive FAQ

- **Zip: Q&A**
  www.amigau.com/zipdrives/aFAQ.html Zip Home - FAQ

16. Scanner Knowledge

Educators should know how to use a scanner and what OCR capacity is. See the following Web sites for helpful information and tutorials.

- **A Few Scanning Tips**
  www.scantips.com
  Scanning Tips by Wayne Fulton

- **AARP: How to Use a Scanner**
  www.aarp.org/computers-howto/Articles/a2002-07-16-scan.html
  How to Use a Scanner

- **How do I Use a Scanner**
  www.bbc.co.uk/webwise/askbruce/articles/scancam/usescan_1.shtml
  How to Use a Scanner by Ask Bruce

- **Scanners**
  www.pcworldmalta.com/archive/iss44/scanners.htm
  Scanner Information by PC World

- **Scanning Tips for Beginners (and old pros, too)**
  http://aroundcny.com/technofile/texts/tec010503.html
  Scanning Tips for Beginners

- **Best Sites for OCR Scanners**
  www.discount-secrets.com/computer/scanners/ocr-scanner.htm
OCR Scanner Information.

- **Secrets of…**
  
  www.secretsof.com/content/576
  
  Secrets of Taming Computers - Scanners

### 17. PDAs Knowledge

Educators should now what a PDA is and who to use one. See the following Web sites for helpful information and tutorials.

- **Palm Web site**
  
  www.palmone.com/us/?siteRef=p1-xfer

- **The Source for a Palm Powered World**
  
  www.palmgear.com
  
  PalmGear's Web site

- **Palm News and Information**
  
  www.handheldnews.com/category.asp?ObjectID=5421
  
  Palm News for Beginners

- **Real People Helping People: Palm Computing Devices**
  
  www.suite101.com/linkcategory.cfm/4239/5398
  
  General Information on Palm Pilots

- **Basic PDA Specs Explained**
  
  
  Basic PDA Information

- **For PDA Users**
  
  http://scilib.ucsd.edu/bml/pda/intro.htm
  
  Introduction for PDAs from UCSD

### 18. Deep Web Knowledge

Educators should know what the deep web is and how to use it as a resource tool. See the following Web sites for helpful information and tutorials.

- **The Deep Web Directory**
  
  www.completeplanet.com
  
  CompletePlanet's Deep Web search engine and site

- **Internet Tutorial: The Deep Web**
  
  http://library.albany.edu/internet/deepweb.html
  
  Deep Web Information from University Library at Albany NY

- **Your Source for Deep Web Information**
  
  www.deepweb.com
  
  The Deep Web Web site.
Invisible Web Gets Deeper
www.searchenginewatch.com/sereport/article.php/2162871
Deep Web information from SearchEngineWatch.

Doing it Deeper: The Deep Web
www.bhsu.edu/education/edfaculty/ltturner/The%20Deep%20Web%20article1.doc
Article by L Turner from Black Hills State University

19. Educational Copyright Knowledge

Educators should understand the copyright issues related to education including multimedia and Web-based copyright issues. See the following Web sites for helpful information and tutorials.

- University of Washington Libraries: Copyright Information for Educators
  www.lib.washington.edu/help/guides/copyright.html
  Copyright Information for Educators.
- Internet School Library Media Center
  http://falcon.jmu.edu/~ramseyil/copy.htm
  Copyright for Educators portal
- Adventures of CyberBee
  www.cyberbee.com/copyrt.html
  Copyright with CyberBee
- West Valley College Library: Copyright
  www.westvalley.edu/wvc/library/copyright-resources.html
  Copyright Information for Educators
- University of Maryland University College: Information and Library Services
  www.umuc.edu/library/copy.html
  Copyright and Fair Use in the Classroom, on the Internet, and the World Wide Web
- PBS Teacher's Source
  www.pbs.org/teachersource/copyright/copyright_ed_multi.shtml
  Educational Multimedia
- Black Hills State University: Copyright Guidelines
  www.bhsu.edu/education/edfaculty/ltturner/Copyright%20Guidelines.htm
  Copyright Guidelines portal

20. Computer Security Knowledge

Educators should know about basic computer security issues related to education. See the following Web sites for helpful information and tutorials.

- Computer World: The Need for Better Security
  www.computerworld.com/securitytopics/security/story/0,10801,71714,00.html
Computer security concerns article from ComputerWorld

- **Security 101: Security**
  www.secure101.net/security/security.htm
  Security 101 A Basic Computer Security Resource for Educators

- **Educational Cyber Playground: Security**
  www.edu-cyberpg.com/Technology/staffdr.html
  Computer Security and Related Issues Portal

- **Cisco Systems: Beginners Guide to Network Security**
  A Beginners Guide to Network Security

- **A Beginners Guide to Wireless Security**
  A beginner's guide from GovernmentSecurity.org

- **Computer and Network Security Introduction**
  www.comptechdoc.org/independent/security
  An article by the Computer Technology Documentation Project

- **Science & Technology Resources on the Internet**
  www.istl.org/02-fall/internet.html
  Computer security article by Jane Kinkus, Purdue University