

Lab Management

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Are You in Compliance?— Part II

Imagine what it would be like to sit down at a computer and to be unable to see words or graphics on the screen, to move or click the mouse, or to use the keyboard precisely or even at all. Some of us work with students, faculty, and staff who have such experiences every day. The computer is available for their use, but they are unable to take full advantage of this wonderful tool because it is primarily designed for people without disabilities. We take for granted what a computer can do for us; why shouldn't individuals with disabilities make full use of computers as well?

My previous column titled "Are You in Compliance?" discussed the physical barriers that individuals face and the importance of bringing these barriers down. Physical barriers may be the primary focus of the Americans with Disabilities Act of 1990, or ADA, but even if we raise our tables to the acceptable height or expand aisles and doorways, technological barriers still remain. For example, many of our computer labs are equipped with powerful word-processing software. However, individuals with visual impairments who wish to write papers or to work through language-learning exercises cannot necessarily use these programs in their standard format. These lab users need special assistance to complete the computer task. If we are to provide goods and services to all, we must eliminate both *physical and technological* barriers that deny individuals equal access to learning enhancement materials; we must be prepared to make our programs and services "readily available."

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Despite the importance of the ADA, it is still unclear what the technological requirements are for colleges and universities under the Act. In the earlier Rehabilitation Act of 1973, Section 504 mandates that educational programs be accessible to all students, while Section 508 mandates that federal programs provide individuals with disabilities equal access to technological tools. (Interuniversity Communications Council, 1996) In light of these guidelines, universities are taking a

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more proactive approach toward helping individuals with disabilities: “In order to best serve their disabled students, faculty and staff, and to comply with the ‘spirit of the ADA’, many schools...have already begun providing computer equipment and support services as accommodations that will help individuals with disabilities.” (Interuniversity Communications Council, 1996)

Are the computers in your lab readily accessible to students with disabilities? One way to evaluate your lab and your campus is to use the *Adaptive Computing Evaluation Kit for Colleges and Universities* (address below). This campus-wide evaluation kit provides universities with ideas to meet the computer needs of all individuals on campus, and can help colleges and universities “to take a proactive approach to establishing adaptive computing technology and support services for individuals with disabilities.” (ICC, 1996) The evaluation kit, created by EDUCOM/EUIT (Educational Uses of Information Technology), is supported by an EDUCOM special interest group, “EASI” (Equal Access to Software and Information); this group is designed to provide educational institutions at all levels with information on technological accessibility needs of individuals with disabilities.

Visual, mobility, and hearing impairments are the disabilities we will most often encounter in our labs. Numerous software and hardware tools are available to help individuals with these disabilities to make full use of computers. Some of these tools come prepackaged with new computers or are available as shareware over the Internet. Others must be purchased and vary in price and in hardware requirements. Two World Wide Web pages provide a tremendous amount of information on the many products available for various disabilities: The Macintosh site, **Mac Access Online**, offers a downloadable *FileMaker Pro* database of over 100 products available to make Macintosh computers accessible; the other site, **Computer Access Program**, lists numerous Windows, DOS and Macintosh applications designed to make computers readily available to all users. (Both WWW addresses are listed below.) In this light, what are the tools which can help individuals with visual, mobility, or hearing impairments?

Visual Impairments

Visual impairments vary from individual to individual. Some see but are unable to read regular-sized print on a screen, while others are legally blind. Several computer software applications are available to help visually-impaired learners use a computer to its fullest potential.

Screen magnification software allows an individual to magnify the screen's image. For individuals with limited vision, both the Macintosh and Windows '95 operating systems offer software options which enlarge portions of the screen and increase the size of the cursor for easier viewing. More sophisticated screen magnification products with very high magnification rates are also available on the market for DOS, Windows and Macintosh users. (Consult Web lists below.)

Screen reader software verbalizes what is on the computer screen. In short, the computer reads out loud what is typed into or displayed on the screen. An example of this software genre is Berkeley Systems' *Outspoken*, available in both the Macintosh and Windows platforms. *Outspoken* is designed to work with word-processing, spread sheet, email, and desktop publishing applications. This software does not require additional hardware.

Mobility Impairments

Individuals with mobility impairments may find it difficult to use a mouse or to type with a standard keyboard. Software and hardware options are available to assist these users.

Speech recognition software is helpful for individuals who encounter difficulty in typing. *Dragon Dictate* (DOS or Windows) is one such program which allows users to speak text directly into the computer and to control the computer with the voice. This software program comes with a microphone and is noted for its highly sophisticated voice recognition. It supports many different Windows applications and, as an added bonus, is also available in French, German, Italian and Spanish formats.

Keyboard enhancement software reduces the number of key strokes needed by an individual to operate a computer, allows the user to control the mouse via the keyboard, and permits easy access to repeat key functions. Both Windows and Macintosh platforms have free software packages available to assist individuals with these needs. You can download Microsoft Corporation's *Access Packs for Microsoft Windows and Microsoft Windows NT* directly off of the Web (see address below). *Easy Access*, the standard in Macintosh accessibility software, comes packaged with all new Macintosh machines.

Word prediction software "predicts" the words typed and thus reduces the number of keystrokes needed by an individual during typing. As a result, it increases the speed at which individuals with impairments work. For example, as a word is typed, the program provides the user with a list of possible words to finish. The user then selects the desired word

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from the choices provided.

Hardware such as **specialty keyboards** or a **trackball** can alleviate difficulties individuals may encounter with standard keyboards and mice. A stationary mouse device with a tracking ball is a utility for those who are unable to grasp and or to move the standard "rodent." Specialty keyboards on the market are equipped with larger keys or slanted keys to help individuals with mobility disabilities more easily enter text into the computer.

Hearing Impairments

Individuals with hearing impairments have difficulty hearing error cues from the computer. To alleviate this situation, users may increase the volume available on the computer or may rely on visual cues from the computer screen. A user may change the volume on a Macintosh to 0 through the sound control panel so that the menu bar flashes when an error occurs. In the Windows '95 environment, the "soundsentry" setting can be used to visually alert individuals; and, as with the Macintosh, sound volumes can be adjusted as needed.

Conclusion

Numerous computer software and hardware products are now available to assist individuals with disabilities. Needless to say, a department could spend a small fortune equipping a lab with all of the items available on the market. So what should we do? Some believe that multiple stations should be ready to go for any disability, an approach which could prove costly and unnecessary. Others believe that the best solution is to provide services as needed. Fortunately, with recent advances in computer technologies, many of us, whether we are aware of it or not, are already equipped with accessibility aids. Both Macintosh and Windows '95 come ready to assist individuals with certain visual, hearing, and mobility impairments. This in itself is a tremendous benefit, and for many of us, this may be all that we will ever need in our facilities. Nevertheless, it is important to remain aware of the different computers tools available for enhancing accessibility. As providers of educational materials for students and faculty, we must strive to create a barrier-free learning environment for our students. Both physical and technological barriers can be reasonably resolved. It is through our efforts and our positive attitudes that we will include everyone in the educational process.

Web Resources

Computer Access Program

http://trace.wisc.edu/comp_access/comp_access.html

Mac Access Passport Online

http://www2.apple.com/disability/disability_home.html

Mac Access Passport Database (MAP)

A *FileMaker Pro* version of 100+ solutions for individuals with disabilities. Available at: <http://www2.apple.com/disability/map.html>

EASI (Equal Access to Software and Information)

<http://www.isc.rit.edu/~easi>

Products and Services Cited

EASI Adaptive Computing Self Evaluation Kit

<http://www.rit.edu/~easi/law/adakit.html>

Also available from:

EASI Evaluation Kit

EDUCOM

1112 16th Street, NW, #600

Washington, D.C. 20036

EASI

c/o American Association for Higher Education

One Dupont Circle, Suite 360

Washington, D.C. 20036-1110

Outspoken

Berkeley Systems Inc.

2095 Rose St.

Berkeley, CA 94709

Access Packs for Microsoft Windows and

Microsoft Windows NT for Windows 3.0 and 3.1

Microsoft Corporation

One Microsoft Way

Redmond, WA 98052-6399

Also available for download from http://trace.wisc.edu/comp_access/win/access_win.html

Work Cited

Adaptive Computing Self Evaluation Kit for Colleges and Universities. Interuniversity Communications Council, Inc. (EDUCOM). <http://www.rit.edu/~easi/law/adakit.html> (10 May 1996). ■

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