



Equal Access: Universal Design of Computer Labs

DO-IT

by Sheryl Burgstahler, Ph. D

As increasing numbers of people with disabilities pursue educational opportunities that require computer use, accessibility of computing facilities is critical. The vision is simply equal access. Everyone who needs to use your lab should be able to do so comfortably.

To make your lab accessible, employ principles of universal design. Universal design means that rather than design your facility and services for the average user, design it for people with a broad range of abilities, disabilities, ages, reading levels, learning styles, native languages, cultures, and other characteristics. Keep in mind that individuals using your lab may have learning disabilities or visual, speech, hearing, and mobility impairments. Preparing your program to be accessible to them will minimize the need for special accommodations for those who use your services and for future employees as well. Make sure everyone

- feels welcome,
- can get to the facility and maneuver within it,
- is able to access printed materials and electronic resources, and
- can make use of equipment and software.

Train staff to support people with disabilities and have a plan in place to respond to specific accommodation requests in a timely manner.

The following questions can guide you in making your computer lab universally accessible. Your disabled student services office may also be able to assist you in increasing the accessibility of your unit. This content does not provide legal advice. Consult your campus legal counsel or ADA/504 compliance officer regarding relevant legal issues.

Consultation with your regional Office for Civil Rights (OCR) can also help clarify issues.

Planning, Policies, and Evaluation

Consider diversity issues as you plan and evaluate your computer lab.

- Are people with disabilities, racial/ethnic minorities, men and women, young and old students, and other groups represented on your staff, faculty, and student body in numbers proportional to those of the whole campus/community?
- Are people with disabilities, racial/ethnic minorities, men and women, young and old students, and other groups represented in lab planning and review processes and advisory committees in numbers proportional to those of the whole campus/community?
- Do you have policies and procedures that assure access to facilities, printed materials, computers, and electronic resources for people with disabilities?
- Do policies and procedures require that accessibility be considered in the procurement process for software and other information technology? (See, for example, the Section 508 standards of the federal government at <http://www.access-board.gov/sec508/guide/>)
- Do you have a procedure to assure a timely response to requests for disability-related accommodations?
- Are disability-related access issues addressed in your evaluation methods?

Facility and Environment

Assure physical access, comfort, and safety within an environment that is welcoming to visitors with a variety of abilities, racial/ethnic backgrounds, genders, and ages.



- Are there parking areas, pathways, and entrances to the building that are wheelchair-accessible and clearly defined?
- Are all levels of the facility connected via an accessible route of travel?
- Are there ample high-contrast, large-print directional signs to and throughout the lab? Is Braille signage available when appropriate?
- Do elevators have both auditory and visual signals for floors? Are elevator controls accessible from a seated position and available in large print and Braille or raised notation?
- Are wheelchair-accessible and child-friendly restrooms with well-marked signs available in or near the lab?
- Is at least part of a service counter/desk at a height accessible from a seated position?
- Are aisles wide and clear of obstructions for wheelchair users who have mobility and/or visual impairments?
- Is lighting adjustable by the individual?
- Are window blinds available to reduce glare, especially on computer screens?
- Are there quiet work and/or meeting areas where noise and other distractions are minimized and/or facility rules in place (e.g., no cell phone use) to minimize noise?
- Can at least one public telephone be reached from a seated position?
- Are telecommunication devices (TTY/TDD) available?

Consult the *ADA Checklist for Readily Achievable Barrier Removal* at <http://www.usdoj.gov/crt/ada/checkweb.htm> for more suggestions.

Lab Staff

Make sure staff are prepared to work with all students.

- Are staff members familiar with the availability and use of a TTY/TDD, The Telecommunications Relay Service,

assistive technology, and alternate document formats?

- Do staff members know how to respond to requests for disability-related accommodations such as sign language interpreters?
- Are staff members aware of issues related to communicating with students with different characteristics regarding race/ethnicity, age, disability (See “Helpful Communication Hints” at the end of this publication)?
- Do staff members have ready access to a list of on- and/or off-campus resources for students with disabilities?
- Is the webmaster knowledgeable about accessible web design?

Information Resources

Assure that lab publications and websites welcome a diverse group and that information is accessible to everyone.

- Do pictures in your publications and website include people with diverse characteristics with respect to race, gender, age, and disability?
- In key publications, do you include a statement about your commitment to universal access and procedures for requesting disability-related accommodations? For example, you could include the following statement: “Our goal is to make all materials and services accessible. Please inform staff of accessibility barriers you encounter and request accommodations that will make activities and information resources accessible to you.”
- Are all printed software and hardware documentation and other publications available (immediately or in a timely manner) in alternate formats such as Braille, large print, and electronic text?
- Are key documents provided in language(s) other than English?
- Are printed materials within easy reach from a variety of heights and without furniture blocking access?



- Do electronic resources, including web pages, adhere to accessibility guidelines or standards adopted by your institution or your specific project or funding source? *Section 508 Standards for Accessible Electronic and Information Technology* (<http://www.access-board.gov/sec508/guide/>) and *World Wide Web Consortium's Web Content Accessibility Guidelines* (<http://www.w3.org/WAI/>) are most commonly used. For information about making your website accessible to everyone, consult *World Wide Access: Accessible Web Design* video and publication at <http://www.washington.edu/doit/Video/www.html>.
- Do video presentations used by the lab have captions? Audio descriptions?
- Are accessibility issues incorporated into mainstream web design and other technology training for students and staff?

Computers, Software, and Assistive Technology

Make technology accessible to all visitors.

- Is an adjustable-height table available for each type of workstation in the lab? Can the height be adjusted from a seated position?
- Do some keyboards have large-print key labels, Braille labels, or home-row key indicators to help users with visual impairments locate keys?
- Is screen enlargement software available for users with low vision? Is a large monitor available so that a larger amount of screen can be viewed while magnified?
- Is a trackball available for those who have difficulty controlling a mouse?
- Are a wrist rest and forearm rest available for those who require extra support while typing?
- Is equipment marked with large-print and Braille labels?
- Is software available to modify keyboard response, such as sticky keys, repeat rate,



and keystroke delay (perhaps by making accessibility features of operating systems readily available)?

- Is word prediction software available to reduce the number of keystrokes needed for text entry?
- Can controls on computers, printers, scanners, and other information technology be reached from a seated position?
- Are adequate work areas available for both right- and left-handed users?

A useful online interactive tool for learning about IT accessibility and for managing your lab's IT accessibility goals is the *Information Technology in Education Accessibility Checklist* at <http://www.washington.edu/accessit/it-checklist/>. For more information about assistive technology, consult the videos and publications at <http://www.washington.edu/doit/Resources/technology.html>.

First Steps

To get started on making your campus lab accessible to everyone, take the following steps.

1. Include students with disabilities in planning and evaluating lab products and services.
2. Develop policies and procedures that assure access to lab facilities, computers, and electronic resources for people with disabilities. Require that accessibility be considered in the procurement process.



3. Assure that the facility and services are wheelchair-accessible and publications can be reached from a seated position.
4. In key lab documents, include a statement about your commitment to universal access and procedures for requesting disability-related accommodations.
5. Make signs with high contrast and large print.
6. Make key documents available in formats accessible to those who have low vision and those who are blind (e.g., large print, Braille, electronic).
7. Although a lab cannot be expected to have specialized equipment for every type of disability on hand, staff should make equipment available that they anticipate will be most often used and/or that is available at relatively low cost. This might include
 - an adjustable table for each type of workstation in your lab;
 - a wrist rest and forearm rest;
 - a trackball;
 - software to modify keyboard response such as sticky keys, repeat rate, and keystroke delay;
 - software to enlarge screen images, along with a large monitor;
 - large-print keytop labels; and
 - web resources that adhere to accessibility standards or guidelines adopted by the lab.
8. Once a lab is established and serves a large number of users, consider adding
 - text-to-speech software;
 - scanner and optical character recognition (OCR) software;
 - CCTV to enlarge printed documentation;
 - Braille translation software and printer;
 - word prediction software;
 - hearing protectors;
 - keyboard guards to assist those who have limited fine motor skills;
 - alternative keyboards, mini-keyboards, or extended keyboards for users with mobility impairments;
 - speech input software; and
 - one-handed keyboards or “keyboard layout” software.
9. Develop a procedure to assure quick responses to requests for adaptive technology that you do not currently have available or for other disability-related accommodations.
10. Train staff on available accessible products in the lab, on appropriate communication, and on procedures for addressing requests for accommodation. Include accessibility issues in all training offered in the lab.

Checklist Updates

This checklist was field tested at more than twenty postsecondary institutions nationwide (see <http://www.washington.edu/doit/Brochures/Academics/admin.html>). To increase the usefulness of this working document, send suggestions to sherylb@u.washington.edu.



Additional Resources

An electronic copy of the most current version of this publication as well as additional useful brochures can be found at <http://www.washington.edu/doit/Brochures/>. A 10-minute video, *Equal Access: Computer Labs*, demonstrates key points summarized in this publication. It may be freely viewed at



<http://www.washington.edu/doi/Video/equal.html> and purchased in DVD format from DO-IT. Consult <http://www.washington.edu/doi/Video/> for access to this and other videos that may be of interest. Permission is granted to reproduce DO-IT s and publications for educational, noncommercial purposes, provided the source is acknowledged. For more information about applications of universal design consult <http://www.washington.edu/doi/Resources/udesign.html>.

The Student Services Conference Room at <http://www.washington.edu/doi/Conf/> includes a collection of documents and videos to help you make student services accessible to everyone. They include checklists for career services, distance learning, computer labs, recruitment and admissions, registration, housing and residential life, financial aid, libraries, tutoring and learning centers, and student organizations. The Conference Room also includes a searchable Knowledge Base of questions and answers, case studies, and promising practices.

Grants and gifts fund DO-IT publications, videos, and programs to support the academic and career success of people with disabilities. Contribute today by sending a check to DO-IT, Box 355670, University of Washington, Seattle, WA 98195-5670.

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About DO-IT

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Helpful Communication Hints

Treat people with disabilities with the same respect and consideration with which you treat others. There are no strict rules when it comes to relating to people with disabilities. However, here are some helpful hints.

General Guidelines

- Ask a person with a disability if he/she needs help before providing assistance.
- Talk directly to the person with a disability, not through the person's companion or interpreter.
- Refer to a person's disability only if it is relevant to the conversation. If so, refer to the person first and then the disability. "A man who is blind" is better than "a blind man" because it emphasizes the person first.
- Avoid negative descriptions of a person's disability. For example, "a person who uses a wheelchair" is more appropriate than "a person confined to a wheelchair." A wheelchair is not confining—it's liberating!
- Ask for permission before you interact with a person's guide dog or service dog.

Visual Impairments

- Be descriptive for people with visual impairments. Say, "The computer is about three feet to your left," rather than "The computer is over there."
- When guiding people with visual impairments, offer them your arm rather than grabbing or pushing them.

Learning Disabilities

- Offer directions/instruction both orally and in writing. If asked, read instructions to individuals who have specific learning disabilities.

Mobility Impairments

- Sit or otherwise position yourself at the approximate height of people sitting in wheelchairs when you interact.

Speech Impairments

- Listen carefully. Repeat what you think you understand and then ask the person with a speech impairment to clarify and/or repeat the portion that you did not understand.

Deaf or Hard of Hearing

- Face people with hearing impairments so they can see your lips.
- Speak clearly at a normal volume. Speak more loudly only if requested.
- Use paper and pencil if the deaf person does not read lips or if more accurate communication is needed.
- In groups raise hands to be recognized, so the person who is deaf knows who is speaking.
- When using an interpreter, speak directly to the person who is deaf; when an interpreter voices what a deaf person sign, look at the deaf person, not the interpreter.

Psychiatric Impairments

- Provide information in clear, calm, respectful tones.
- Allow opportunities for addressing specific questions.