Equal Access: Universal Design of Computer Labs

A checklist for making computer labs welcoming, accessible, and usable
by Sheryl Burgstahler, Ph.D.

Accessing computing facilities is crucial for the success of all students, including those with disabilities. The vision is simply equal access. Everyone who needs to use your computer lab should be able to do so comfortably.

Universal Design

To make your lab accessible, employ principles of universal design (UD). Universal design means that rather than designing your facilities and services for the average user, it is designed 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 be neurodivergent or have learning, visual, hearing, or mobility disabilities. Preparing your computer lab to be usable by a wide

can get to the facility and maneuver within it,
-]gUV Yhc Wa a u b]WHYY YWtj Ymk]h\ gt ddcfhghU
- is able to access materials and resources, and
- can make use of equipment and software.

HfU]b ghU hc gt ddcfhdYcd`Yk ]h\ X]gUV]`]hYg < Yj YUd`Ub ]b d`UWhc fYgdcbX hc gdYWJÚW accommodation requests in a timely manner.

Guidelines and Examples

The following questions can guide you in making your computer lab universally accessible. To clarify accessibility issues,

Wbgj `hmci f Wa di gX]gUV]`]hmgYfj]Wgc W cf 585 /) $(Wa d`UbWc Wf cf W`noi f fY[ ]cbU C WZcf 7]j]`F][\hg (C7F).

First Steps

To begin the process of making your computer 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 ensure access to lab facilities, computers, and electronic resources for people with X]gUV]`]hYg FYeu ]fYh UhUWWgg]V]`]hmVY considered in the procurement process.
3. Ensure that the facility and services are wheelchair-accessible and resources 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 information available in formats accessible to those who have low vision or are blind (e.g., large print, Braille, electronic).
7. Although a lab cannot be expected to have specialized equipment for every type cZX]gUV]`]hmcb \UbX, ghU g\ci `Xa U_Y equipment available that they anticipate will be used often 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 (that may be available in the operating system);
- software to enlarge screen images (that may be available in the operating system), 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 fYW[b]h]cb (C7F) gcZlk UfY;
   - 77HJ hc Yb`Uf[Y df]bhYX documentation;
   - Braille translation software and printer;
   - word prediction software;
   - earplugs or noise-canceling headphones;
   - keyboard guards to assist those who \Uj Y`]a]hYX UbYa chcf g_]``g;
   - alternative keyboards, mini-keyboards, or extended keyboards;
   - speech input software; and
   - one-handed keyboards, on-screen keyboards, or "keyboard layout" software.

9. Develop a procedure to ensure quick responses to requests for assistive technology that you do not currently have available or for other disability-related accommodations.

10. HfU]b ghU cb Uj U]`UV`Y UWWYgg]V`Y dfcXi Wg in the lab, on appropriate communication, and on procedures for addressing requests for accommodations. Include accessibility ]ggi Yg]b U`hfU]b]b[c YfYX]b h\Y`UV.

11. Include people with disabilities when addressing accessibility in periodic lab evaluations.

Planning, Policies, and Evaluation
7cbg]XYf XYj Yfg]hm]ggi Yg Ugmci d`Ub UbX

- 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 auditory, visual, and tactile signals and are elevator controls accessible from a seated position?
- 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 or desk accessible from a seated position?
- Are aisles wide and clear of obstructions for wheelchair users who have mobility or visual impairments?
- Are there quiet work 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?

Lab Staf

Make sure that lab staff are prepared to work with all students.

- Are staff members familiar with the avail-ability and use of the Telecommunications Relay Service, assistive technology, and alternate document formats?
- Do staff members know how to respond to requests for disability-related accommoda-tions such as sign language interpreters?
- Are staff members well-prepared and sensitive to communicating with students with dif-ferent characteristics regarding race and ethnicity, gender, age, and disability? (See the Communication Hints at the end of this publication.)
- Do staff members have a general understanding of accommodations for students with disabilities?
- Is the webmaster knowledgeable about ac-cessible web design?

Information Resources and Technology
Ensure 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 char-acteristics with respect to race, gender, age, and disability?
- In key publications, do you include a state-ment 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 materi-als and services accessible. Please inform the office staff if you will need our assis-ter and request accommodations that will make activities and information resources accessible to you."
- Are all software and hardware documen-tation and other publications available in accessible formats?
- Do electronic resources, including web pages, adhere to accessibility guidelines or standards adopted by your institu-tion or your specific academic funding source?

Communication Hints

Treat people with disabilities with the same respect and consideration with which you treat others. Here are some helpful hints when it comes to delivering a presentation, hosting an exhibit, and otherwise relating to people with disabilities.

General
- Ask a person with a disability if that person needs help before providing assistance.
- Ask a person with a disability if that person needs help before providing assistance.
- Talk directly to the person with a disability, not through their companion or interpreter.
- FYZyf hc UdYfgcbÑïX]gUV`]hmcb`m]Z]h]gfY`Yj Ubhc h\YWcbj YfgU]cb.
- Avoid derogatory slang or negative descriptions of a person's disability. For example, Î UdYfgcb k \c i gYgUk \YYWUfÏ]ga cfYUddfcdf]UhY h\Ub Î UdYfgcb WcbÚbYX hc U k \YYWUÏf.Ï 5 k \YYWUf]gbchWcbÚb]b[Í]h&ïg`]VYfUh]b[!
- Provide information in alternate means (e.g., written, spoken, diagrams).
- Do not interact with a person's guide dog or service dog unless you have received permission to do so.
- Do not be afraid to use common terms and phrases, like "see you later" or "let's go for a walk" around people with disabilities.
- Do not touch mobility devices or assistive technology without the owner's consent.
- 8c bchUggi a Yd\ng]W` WcbHUVÍ `]_Y\UbXg\U_Yg \][\-Új Yg cf \i [g)]gc_Um
- Understand that not everyone uses eye contact.

Blind or Low Vision
- Be descriptive. Say, "The computer is about three feet to your left," rather than "The computer is over there."
- Speak all of the projected content when presenting and describe the content of charts, graphs, and pictures.
- K \Yb [i]X]b[dYcp`Yk ]h\ j ]g] U`]a dU]fa Ybhg(c Yfh\Ya mci r Ufa fUh\Yfh\Ub [fUVV]b[or pushing them.

Learning Disabilities
- C Yf X]fYWnjcbgcf]bghfi Wjcbg Vcth cfU`mUbX]b k f]h]Jb[. =ZUg_YX, fYUX]bghfi Wjcbghc ]bX]j ]Xi Ugk \c \Uj YgdYWJÚVYUf]b] X]gUV]`]hYg

Mobility-Related Disabilities
- 7cbg]XYf WUffm]b[cb U]cb[Wcbj YfgUjcb k]h\ Ub]bX]j]Xi U k \c \UgUa cV]`]hm impairment from a seated position.

Speech-Related Disabilities
- @]ghYb WUfYZi ``mFYdYUhk \Uhmci h\]b_ mci i bXYfghUbXUbX h\Yb Ug_ h\YdYfgcb hc WUf]Zm or repeat the portion that you did not understand.

Deaf or Hard of Hearing
- Face people who are deaf or hard of hearing and avoid covering your mouth, so they can see your lips. Avoid talking while chewing gum or eating.
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