Breaking Down Barriers

K – 12 and Beyond

An Educator's Guide to Accessible Technology in Schools

AccessIT

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Hannah, who is blind, has a computer equipped with text-to-speech technology at school. She goes to the computer lab to do a Web assignment with her class. Her text-to-speech system reads aloud all of the text presented at the Web site. The Web site's designer, however, neglected to include text descriptions of the content presented within graphic images; therefore, this content is not accessible to her. Even with her impressive computer system, Hannah is stuck. She sits on the sidelines, surrounded by the enthusiastic chatter of her classmates working together.

Written by Sheryl Burgstahler PhD

Too often, Hannah and other students with disabilities cannot access Web content or operate educational software because of its inaccessible design. They do not have full access to the general curriculum and are in danger of failing to meet state learning standards and the goals of No Child Left Behind. Excluded from computer-based activities, these students do not receive the benefits technology delivers to their peers who do not have disabilities.

How can teachers and administrators assure that all students have access to technology-based learning opportunities at school? This publication answers this question. It presents key terms and then puts them all together in a way that makes a simple, compelling case for the purchase, development, and use of accessible technology.

What do educators need to know?
It is helpful to have a basic understanding of a few technical terms in order to effectively promote the use of accessible technology.

Assistive technology (AT), can help a person with a disability operate a computer. AT includes grammar checkers, alternative

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keyboards, hands-free interfaces, and the text-to-speech software Hannah uses.

Information technology (IT) includes computers, software, Web sites, telephones, CDs, videotapes, calculators, and other electronic devices. Many IT products, like the Web site Hannah tried to access, are designed in such a way that they are inaccessible to people with disabilities, even to those who have AT.

Universal design refers to the design of products and environments so that they are usable by everyone, to the greatest extent possible. A teacher is applying universal design when he purchases curriculum with built-in, multiple, and flexible methods of presentation, expression, and engagement. The manager of a computer lab is applying universal design when he purchases adjustable tables in anticipation of students who are small or large in stature or who use wheelchairs.

Accessible information technology is created when producers consider the needs of people with disabilities in the process of designing information technology. More accessible products minimize the need for AT; they are also compatible with existing AT products. If Hannah's teacher assigned the use of an accessible Web site to her students, it would have, among other features, included alternative text for graphics images so that Hannah's text-to-speech system could read the content to her.

AT and accessible information technology work together to allow students with disabilities to participate side-by-side with their classmates as they complete assignments, access information, and engage in collaborations, simulations, and tutorials.

Why is it important that information technology be accessible?

The use of information technology is wide-spread in schools and employment settings. It has the potential to maximize the independence, participation, and productivity of people with disabilities. However, this potential can only be realized if students are provided with the ***assistive technology*** they need AND educators procure, develop, and use ***accessible information technology***.

What should a school's vision be?

Here is an example:

Our school purchases, develops, and uses accessible information technology and applies universal design principles in the creation of its facilities and programs. We also have an efficient system in place to acquire assistive technology for specific students with disabilities.

Promoting universal design is a powerful way to support the goal of No Child Left Behind. Just like ramps installed for people who use wheelchairs also benefit those who are pushing delivery carts or baby strollers, accessible information technology benefits

individuals with and without disabilities. For example, captioning on videos benefits students who are deaf as well as those whose first language is not English or who are learning to read.

What can educators do?

Building accessible information systems in our schools requires the concerted effort of policy makers, information technology support staff, assistive technology specialists, teachers, parents, and students. Creating accessible information systems requires a close collaboration between those who teach students with disabilities and those who make information technology decisions, approve purchases, and provide technical support.

Educators should anticipate the enrollment of students with a wide range of abilities regarding learning, seeing, hearing, moving, and communicating; purchase accessible products; and apply universal design principles as they develop facilities and

activities. A student with a disability should not be treated as an exception. Rather, curriculum should have built-in flexibility and educators should work together to:

• Educate themselves on how technology is used in their school. What software is used? What Web sites are used? What types of assignments are given?

• Identify barriers children with disabilities face or are expected to face in technology-enhanced instructional activities. Are computers, software, Web sites and other technology accessible to them?

• Develop a district-wide policy that clearly states a commitment to the purchase and use of accessible information technology.

• Implement procedures to ensure that accessibility is considered in all stages of technology planning, development, purchase, and support. Examples of taking a proactive approach to accessibility include the purchase of a few adjustable tables for the computer lab, provision of trackballs as well as mice, placement of handouts where they can be reached from a seated position, purchase of flexible curriculum, and use of Web sites that are accessible to people with disabilities.

The technology access barriers Hannah encountered could have been avoided if the school routinely requested that vendors of lab products include accessibility features and that only Web sites whose content is accessible to students using text-to-speech systems be used in classes.


As with all systemic change initiatives, persistence of advocates and cooperation among stakeholders are key. The ultimate reward is a more accessible school and a more accessible world for everyone. These benefits outweigh the effort.

What resources are there?

School administrators, teachers, and computer lab support staff can seek more information about the design, procurement, and use of accessible technology from the following resources:

- **ADA and IT Technical Assistance Centers**
  http://www.adata.org/dbtac.html
  (800) 949-4232 (V/TTY)

- **AccessIT, the National Center on Access to Information Technology in Education**
  http://www.washington.edu/accessit
  (866) 968-2223 (V) (866) 866-0162 (TTY)

- **DO-IT (Disabilities, Opportunities, Internetworking and Technology)**
  http://www.washington.edu/doit/
  (888) 972-3648 (V/TTY)
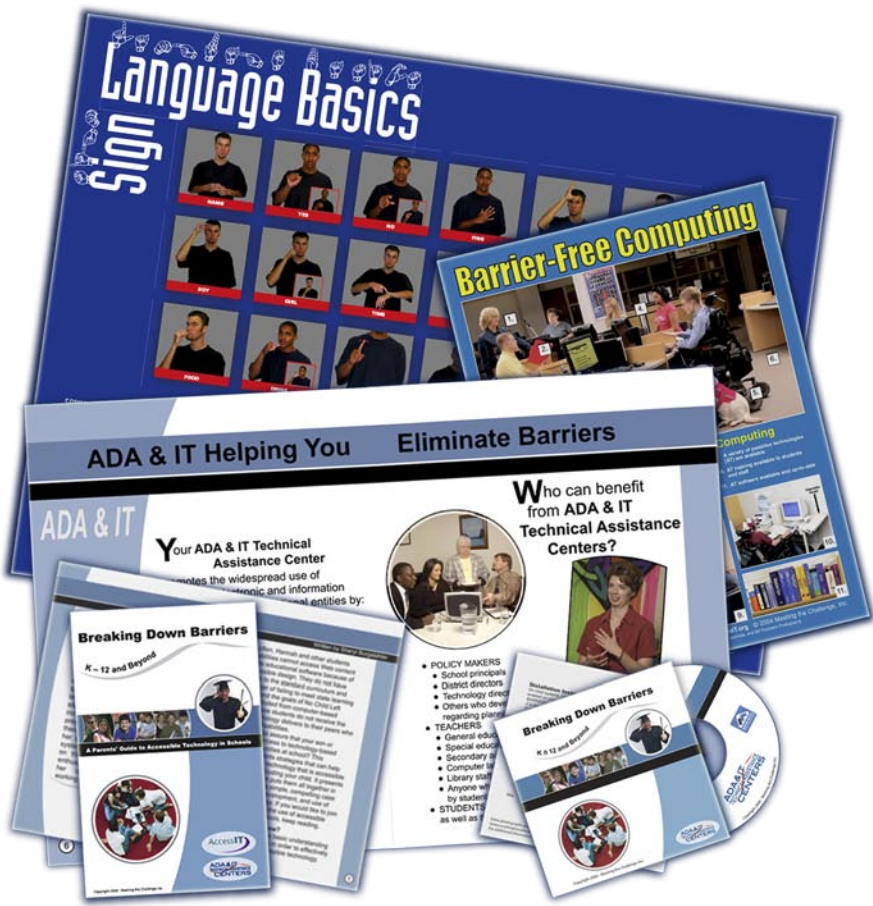
BREAKING DOWN BARRIERS

- Sign Language Poster
- Barrier Free Computing Poster

- Educator Guide Booklet
- Educator Guide Folder

- Parent Guide Booklet
- Educator CD-ROM

You may order items listed above from your ADA and IT Centers.
Call 1-800-949-4232 or go to www.accessibleIT.org to order.