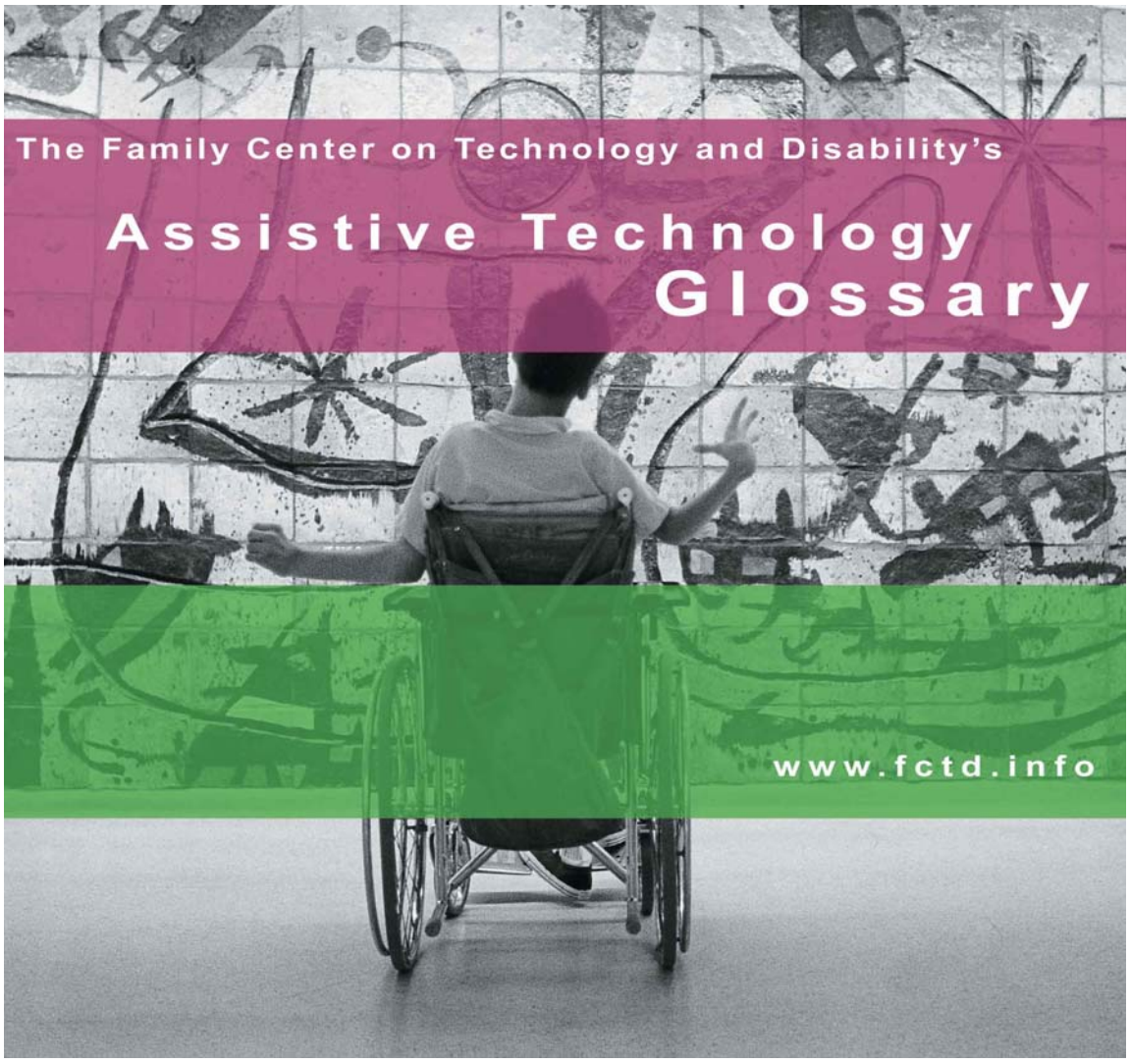

The Family Center on Technology and Disability's
Assistive Technology Glossary
www.fctd.info

Assistive Technology Glossary

A

Access Utilities:

Access utilities are software programs that modify various aspects of the standard keyboard to simplify operation of the keyboard, replace the mouse, substitute visual cues for sound signals, or add sound cues to keystroke.

Example: In the case of a young person with a mobility impairment an access utility is important because it can alter the way keys on a keyboard respond to touch. Say, for example, Jimmy, a young boy with muscular dystrophy has difficultly pressing keys quickly and lingers a bit longer on each key than necessary or inadvertently presses multiple keys on the way to the intended key. Altering relay time on these keys can enable Jimmy to more effectively process information via a keyboard. Many basic modifications can be made through software that already exists on your computer. Altering font size, color contrast, and adding or modifying audio alerts all can be done without purchasing additional software. “Sticky keys” are another very useful modification that can be made through pre-existing software. Sticky keys allow one to type a key at a time, sequentially, and experience the same results as holding down multiple keys simultaneously. So instead of holding down CTRL-ALT-DELETE, one can select each key, one at a time.

Photo Courtesy of Freedom Scientific

Additional Resources:
http://www.ataccess.org/resources/atabook/s02/s02-03b.html

Activities of Daily Living:

Activities of Daily Living (ADL): Frequently used in national surveys as a way to measure self-care abilities in daily life, the ADLs include basic tasks such as eating, bathing, dressing, toileting, getting in and out of a chair or bed, and getting around in the home. National surveys also measure another level of self-care functioning, Instrumental Activities of Daily Living (IADLs), which include activities such as doing everyday household chores, preparing meals, doing necessary business, using the telephone, shopping, and getting around outside the home.

Photo courtesy of Bob Vila

Adaptive Technologies

Adaptive Technologies include customized systems that help individual students move about, communicate in, and control their environments.

They are designed specifically for persons with disabilities; devices which would seldom be used by non-disabled persons. Examples include augmentative communication devices, powered wheel chairs and environmental control systems. These assistive technologies are not used exclusively for education purposes, but are used in all of the child's environments.

Aids for Daily Living:

Self-help aids for activities such as eating, bathing, cooking, dressing, toileting, and home maintenance.

Example: A wide range of devices fall under the phrase Aids for Daily Living (ADLs). A low tech example would be a finger nail brush with two suction cups attached to the bottom that could stick onto a flat surface in the bathroom. Such an ADL would allow a child with limited mobility to clean her nails without having to grip the brush. There are also “higher tech” ADLs. For more information on these devices, see **Environmental Control Units (ECUs)**.

Photo courtesy of Dynamic Living

Photo courtesy of Washington Assistive Technology Alliance

Photo courtesy of Grip Advantage

Alternative Access/Input Device:

A tool that allows individuals to control their computers through means other than a standard keyboard or pointing device. Examples include alternative keyboards, electronic pointing device, sip-and-puff systems, wants and sticks, joysticks, and trackballs.

Example: A “modified mouse” such as a joystick or trackball can make a world of difference to a child with limited mobility. Whereas using an ordinary mouse would be difficult for someone like, Leo, a child with limited refined motor skills, the design of a joystick would allow him to have more full control of his web surfing experience.

Photo courtesy of Don Johnston

Alternative Keyboard:

Alternative keyboards may be different from standard keyboards in size, shape, layout, or function. They offer individuals with special needs greater efficiency, control, and comfort.

Photo courtesy of Big Keys

Example: Alejandro is a child with cognitive disabilities. The traditional QWERTY keyboard is confusing, so his mom replaces it with a keyboard that lists letters A-Z in big, bold letters and doesn't contain a lot of “extra” keys. This makes focusing on spelling and typing words a lot easier for him.

Ambulation Aids:

Devices that help people walk upright, including canes, crutches, and walkers.

Americans with Disabilities Act:

The American with Disabilities Act of 1990 (PL101-336) prohibits employers from discriminating against people with disabilities and makes such discrimination a civil rights violation. Providers of public services, schools, public building and public transportation services also must provide accessibility to people with disabilities.

AND

A federal civil rights law prohibiting discrimination on the basis of disability in (1) employment, (2) programs, services and activities of state and local

government agencies and (3) goods, services, facilities, advantages, privileges and accommodation of places of public accommodation.

Architectural Adaptations

Architectural adaptations are structural fabrications or remodeling in the home, work site, or other area (including ramps, lifts, lighting, kitchen remodeling, bathroom adaptations, etc.) that remove or reduce physical barriers for an individual with a disability.

Assistive Technology Service:

A service related to an assistive technology device that may include evaluating, selecting, procuring, designing, fitting, customizing, applying, maintaining, repairing, replacing, coordinating, and training of individual, family, and others.

Assistive Technology Device:

Any item, piece of equipment, or product system that is used to increase, maintain, or improve functioning of individuals with disabilities.

Example: An AT device is almost everything set forth in this glossary! From low tech - a pen or pencil grip, to high tech - a computer that responds to touch and allows a child to communicate more effectively, all of these fall within the realm of AT devices.

LOW TECH

Photo courtesy of Theraproducts

HIGH TECH

Photo courtesy of TASH, Inc.

Augmentative Communication System:

Any system that increases or improves communication of individuals with receptive or expressive communication impairments. The system can include speech, gestures, sign language, symbols, synthesized speech, dedicated communication devices, microcomputers, and other communication systems.

Auxiliary Aids and Services

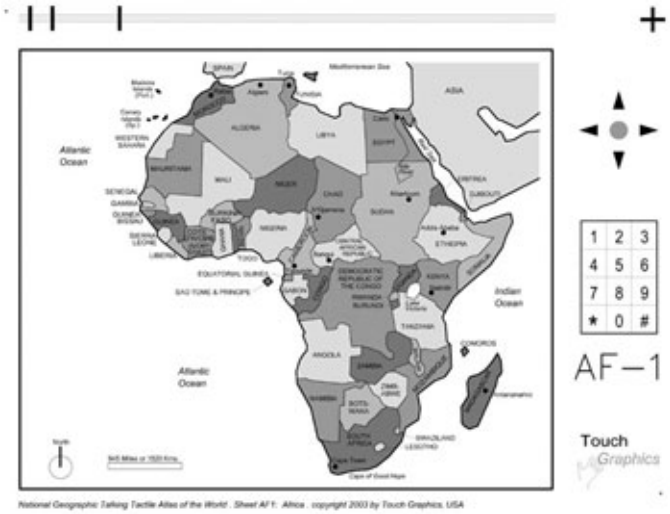
Under the **Americans With Disabilities Act** (see above), a wide range of devices and services that may be used by an entity to ensure that it communicates as effectively with people with disabilities as it does with others. Auxiliary aids may include taped texts, interpreters or other effective methods of making orally delivered materials available to students with hearing impairments, readers in libraries for students with visual impairments, classroom equipment adapted for use by students with manual impairments, and other similar services and actions.

B

Braille:

A raised dot printed language that is used by persons with visual impairments. Each raised dot configuration represents a letter or word combination.

Braille Embossers and Translators:



A Braille embosser transfers computer-generated text into embossed Braille output. Translation programs convert text scanned in or generated via standard word processing programs into Braille that can be printed on the embosser.

Photo of the Talking Tactile Atlas courtesy of Touch Graphics

Braille Display:

A Braille display is a tactile device consisting of a row of special 'soft' cells. A soft cell has 6 or 8 pins made of metal or nylon; pins are controlled electronically to move up and down to display characters as they appear on the display of the source system - usually a computer or Braille note taker...They can also be used for advanced math work and for computer coding. A number of cells are placed next to each other to form a soft or refreshable Braille line. As the little pins of each cell pop up and down they form a line of Braille text that can be read by touch.

Photo courtesy of Deaf Blind -- A-Z to Deaf Blindness

C

Captioning:

A text transcript of the audio portion of multimedia products, such as video and television, that is synchronized to the visual events taking place on screen.

Example: For a child with a severe hearing impairment like Justine, captioning of tv, video and multimedia makes an enormous difference in the quality of her experience with a certain product. A CD-Rom that uses audio narration to tell a story, if captioned, will allow Justine to engage with the material to the same extent a child without a hearing impairment would.

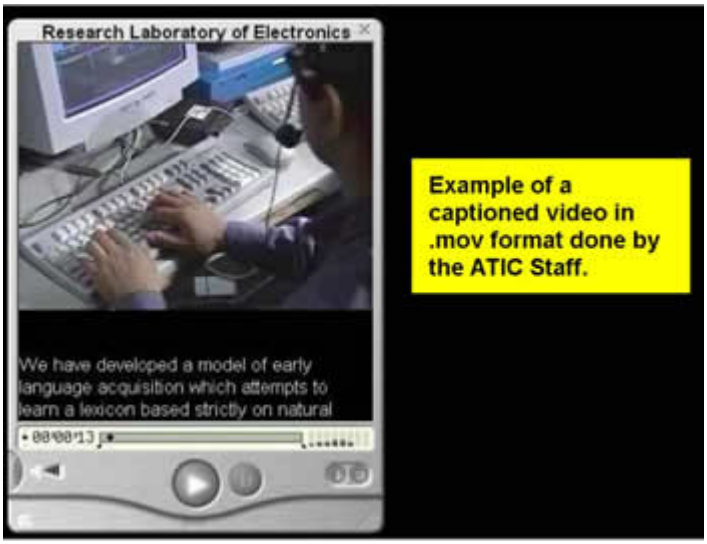


Photo courtesy of Adaptive Technology for Information and Computing at MIT

D

Digitized Speech:

Human speech that is recorded onto an integrated circuit chip and which has the ability to be played back.

E

Electronic Pointing Devices:

Electronic pointing devices allow the user to control the cursor on the screen using ultrasound, an infrared beam, eye movements, nerve signals, or brains waves. When used with an on-screen keyboard, electronic pointing devices also allow the user to enter text or data.

Photo courtesy of Don Johnston

Environmental Control Unit (ECU):

A system that enables individuals to control various electronic devices in their environment through a variety of alternative access methods, such as switch or voice access. Target devices include lights, televisions, telephones, music players, door openers, security systems, and kitchen appliances. Also referred to as Electronic Aid to Daily Living (EADL).

Example: Electronic pointing devices might look a bit space age but the technology is life changing for people with little or no mobility. Take the case of Vanya, a teenager with a traumatic brain injury. Vanya's ocular movement was tracked and registered and she is now able to use a device that lets her interact with her computer, and thereby control her environment, solely with eye movement.

Photo courtesy of EyeGaze

I

Individuals with Disabilities Education Act (IDEA)

The Individuals with Disabilities Education Act (IDEA) requires public schools to make available to all eligible children with disabilities a free appropriate public education (FAPE) in the least restrictive environment appropriate to their individual needs.

The law requires that public schools develop appropriate Individualized Education Programs (IEPs) for each child. The specific special education

and related services, including assistive technology, that are outlined in each IEP should reflect the individualized needs of the student.

IDEA also requires that particular procedures be followed in the development of the IEP. Each student's IEP must be developed by a team of knowledgeable persons and must be reviewed at least once a year. The team usually includes the child's teacher, the parents, the child, if appropriate, a school system representative who is qualified to provide or supervise the provision of special education, and other individuals at the parents' or school's request.

If parents disagree with the proposed IEP, they can request a due process hearing and a review from the state educational agency if applicable in that state. They also can appeal the state agency's decision to state or federal court.

For more information about IDEA, you can visit the following website:

http://www.ed.gov/offices/OSERS/Policy/IDEA/index.html

Individual Education Program (IEP):

A legal document developed by a team, the members of which include the student and his/her parents, that contains the student's present levels of educational performance, goals and objectives, special education and related services and placement for each school year. Discussion of assistive technology as it pertains to the student's ability to "receive a free and appropriate public education" is an important component of the IEP.

See also, **Individuals with Disabilities Education Act (Amendments of 1997)**

Additional Resources:
http://www.katsnet.org/fact4.html

Information Technology:

Information technology includes any product used to acquire, store, manipulate, or transmit information, such as computers, multimedia, telecommunications, copy machines, and the Internet.

J

Joysticks:

A joystick may be used as an alternate input device. Joysticks that can be plugged into the computer's mouse port can control the cursor on the screen. Other

joysticks plug into game ports and depend on software that is designed to accept joystick control.

See also: **Alternative Access/Input Device**

Photo courtesy of Aroga

K

Keyboards Additions:

A variety of accessories have been designed to make keyboards more accessible. *Keyguards* are hard plastic covers with holes for each key. Using a keyguard, someone with an unsteady finger or with a pointing device can avoid striking unwanted keys.

Moisture guards are thin sheets of plastic that protect keyboards from spills and drooling.

Photo courtesy of AbilityNet

Alternative labels add visual clarity or tactile information to the keys.

Example: When John, a young man with muscular dystrophy, doesn't use the keyguard, he often clicks letters that he doesn't want. The clearly defined spaces between keys provided by the keyguards helps him more easily select the keys he wants.

M

Mobility and Transportation Aids

Products that help mobility impaired persons move within their environment and give them independence in personal transportation. Includes standing/walking aids, transfer aids, stair lifts, walkers, scooters, wheelchairs and three-wheeled chairs, adapted bikes and Trikes, car seats/bed, stretchers, patient chairs, ramps, recliners, strollers, travel chairs, wheelchair trays, driving controls, seat belts, vehicle conversions, patient and wheelchair lifts,

Photo of all-terrain wheelchair courtesy of Infintec

wheelchair loaders/carriers, wheelchair restraint systems, etc.

O

Onscreen Keyboard:

On-screen keyboards are software images of a standard or modified keyboard placed on the computer screen by software. The keys are selected by a mouse, touch screen, trackball, joystick, switch, or electronic pointing device.

Photo courtesy of Zygo, USA

Example: Brad, a young boy with limited mobility and severe verbal impairments uses onscreen keyboards to communicate with those around him. Through accessing these keyboards (both pre-formatted keyboards and those designed by his parents to meet his specific needs) and selecting options on the screen he is able to relay concepts, needs and thoughts more easily.

Optical Character Recognition and Scanners:

Optical character recognition (OCR) software works with a scanner to convert images from a printed page into a standard computer file. A scanner is a device that converts an image from a printed page to a computer file. With optical character recognition software, the resulting computer file can be edited. Pictures and photographs do not require OCR software to be manipulated.

Example: Pierre is a high school student who was diagnosed with Stargardt disease (inherited juvenile macular degeneration) at age 10. He has been legally blind since age 12. Much of his schoolwork is available electronically and he uses his screen reader to scan the text. Often, however, documents are only available in hard copy. These documents are scanned into his computer using a basic scanner with OCR software. The “graphic” image from the printed page then becomes electronic text.

P

Pointing and Typing Aids:

A pointing or typing aid is typically a wand or stick used to strike keys on the keyboard. They are most commonly worn on the head, held in the mouth, strapped to the chin, or held in the hand.

Example: For Kwame, a young man with severe spinal cord injury and no mobility from his head down, pointing and typing aids allows him to interface with his computer. His aid, a small patch, worn on his forehead allows him to navigate around his computer. When he moves his head this device substitutes as a mouse and allows him to perform standard activities such as playing games or taking tests and even more advanced activities like drawing.

Photo courtesy of Madentec

Additional Resources:
Alliance for Technology Access @
http://www.ataccess.org/resources/atabook/s02/s02-03i.html

Prosthetic and Orthotics:

Replacement, substitution or augmentation of missing or malfunctioning body parts with artificial limbs or other orthotic aids. Includes splints, braces, foot orthosis, helmets, restraints, supports, etc.

S

Screen Enlargement Programs:

Screen enlargement programs magnify a portion of the screen, increasing the visibility for some users with limited vision. Most have variable magnification levels. Some screen enlargement programs offer text-to-speech.

Screen Reader:

A screen reader is a software program that uses synthesized speech to "speak" graphics and text out loud. This type of program is used by people with limited vision or blindness.

Example: Teri has been blind from birth. A screen reader allows her to access visual information on a computer screen. A piece of software installed in her computer goes "behind the scenes" and reads to her the text that exists behind, for example, the graphic webpages that sighted people read.

Seating and Positioning Aids:

Modifications to wheelchairs or other seating systems that provide greater body stability, upright posture or reduction of pressure on the skin surface. Equipment includes wheelchair cushions, trunk/head supports, modular seating, and seating lifts.

Switches and Switch Software:

Switches offer ways to provide input to a computer when a more direct access method, such as a standard keyboard or mouse, is not possible. Switches come in various sizes, shapes, colors, methods of activation, and placement options. An interface device and software are usually required to connect the switch to the computer and interpret the operation of the switch.

Some software programs have been developed specifically for use with a switch and can employ on-screen scanning. With on-screen scanning, the computer highlights (either by sound, visual cue, or both) options available to a user about what action he or she wants the computer to take. Using these specialized products, when a visual or auditory prompt indicates a desired keyboard or mouse function, the user activates the switch and the desired function occurs.

Other programs have built-in options to allow switch use. Many standard software programs can be accessed through a switch with the use of additional software and devices.

Photo courtesy of Academic Software, Inc.

T

Talking Word Processors:

Talking word processors (TWP) are writing software programs that provide speech feedback as the student writes, echoing each letter as it is typed and each word as the spacebar is pressed. Many of these inexpensive programs, typically used to assist with writing, also incorporate powerful tools for reading. Students with learning disabilities find that having written material read aloud assists them to better edit, comprehend and organize. Once any file (story from a book, assignment, article, typed information, etc.) is imported into a talking word processor, the text can be read aloud to the student. These TWP programs offer other adjustments such as enlarging the size of the text and changing the color of the foreground, background and highlighting box to assist students in following along as the text is read.

Touch Screens:

A touch screen is a device placed on the computer monitor (or built into it) that allows direct selection or activation of the computer by a touch of the screen.

TTD or TTY :

A Telecommunication Device for the Deaf (TTY or TDD) is a device with a keyboard that sends and receives typed messages over a telephone line.

Photo courtesy of Ameriphone

U

Universal Design:

Universal design is the design of products and environments to be usable by a wide range of people. Examples of universally designed environments include buildings with ramps, curb cuts, and automatic doors.

V

Voice Recognition:

Different types of voice recognition systems (also called speech recognition) are available. Voice recognition allows the user to speak to the computer instead of using a keyboard or mouse to input data or control computer functions. Voice recognition systems can be used to create text documents such as letters or email, to browse the Internet, and to navigate among applications and menus by voice.

W

Web Accessibility

Universal accessibility to the Web means that all people, regardless of their physical or developmental abilities or impairments, have access to Web-based information and services. Making Web pages accessible is accomplished by designing Web pages that allow the effective use of adaptive technologies to access their content.

See also, **Screen Reader**

Word Prediction Programs:

Word prediction programs enable the user to select a desired word from an on-screen list located in the prediction window. This list, generated by the computer, predicts words from the first one or two letters typed by the user. The word may then be selected from the list and inserted into the text by typing a number, clicking the mouse, or scanning with a switch.

Example: Word prediction programs speed up the time it takes, Johanna, a young woman with quadriplegia, to communicate her needs to her personal assistant (PA). Instead of typing out full words, a drop down list of common words beginning with the initial letters entered appears and an entire word can be simply clicked in lieu of typed out in full. Word prediction programs also help Chad, a 6th grader with learning disabilities, in writing papers for school. Often he can only recall parts of a word or can spell a word phonetically but can not correctly spell the word. Word prediction programs allow him to type in a few letters or type in a word's phonetic spelling and then present him with correctly spelled alternatives.

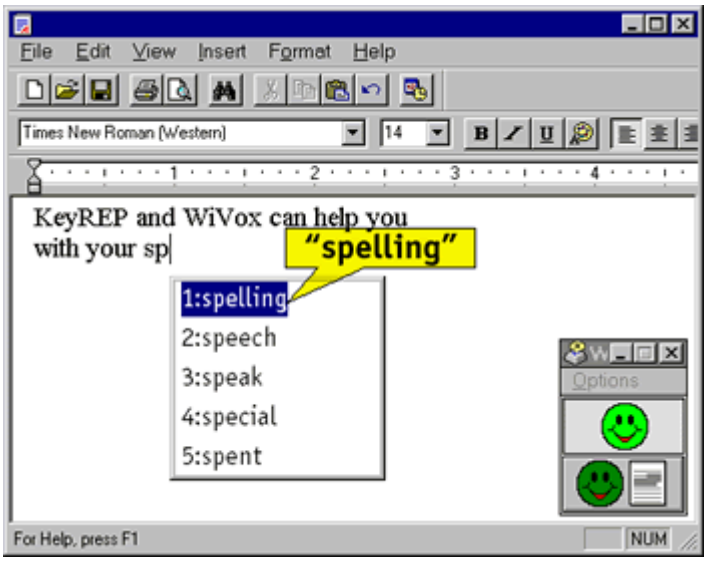


Photo courtesy of NanoPac

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AT Network Resources Glossary (http://www.atnet.org/resources/glossary.htm)

Assistive Technology Training Online Project
(http://atto.buffalo.edu/registered/ATBasics/Foundation/intro/introbasic.php)

Directory of Funding Resources for Assistive Technology, STAR Program

Iowa COMPASS (InfoTech) (http://www.uiowa.edu/infotech/EquipKey.htm)

Just Your Type, PACER Simon Technology Center (www.pacer.org)

Minnesota Assistive Technology Manual 2003 Edition
(http://education.state.mn.us/content/005769.pdf)

National Information Center for Children with Disabilities
(http://www.nichcy.org/pubs/newsdig/nd26txt.htm)

RehabTool.org (http://www.rehabtool.com/at.html#Ambulation%20Aids)

U.S. Department of Education
(http://www.ed.gov/about/offices/list/ocr/docs/auxaids.html)

Web Accessibility Learning Modules
(http://www.csufresno.edu/webaccess/learningmodules/what_is_accessibility/index.htm)

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