ASSISTIVE TECHNOLOGY

Legal Definitions:

Assistive Technology Device: any item, piece of equipment, or product system, whether acquired commercially off the self, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities. (PL 100-407, PL 101-476) (may include: low vision aids, bold line paper, braille writers, screen readers, braille printers, communication devices)

Assistive Technology Service: any service that directly assists an individual with a disability in the selection acquisition, or use of an assistive technology device. Such services include:

1. the evaluation of the needs of an individual with a disability, including a functional evaluation of the individual in the individual's customary environment;
2. purchasing, leasing, or otherwise providing for the acquisition of assistive technology devices by individuals with disabilities;
3. selection, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing of assistive technology devices;
4. coordinating and using other therapies, interventions, or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs;
5. training or technical assistance for an individual with disabilities, or, where appropriate, the family of an individual with disabilities; and
6. training or technical assistance for professionals (including individuals providing education and rehabilitation services), employers, or other individuals who provide services to, employ, or are otherwise substantially involved in the major life functions of individuals with disabilities.

34 CFR §300.346(a)(2)(v) "IEP team also shall…consider whether a child requires assistive technology and services."

34 CFR §300.308 if IEP team determined that child needs assistive technology to receive FAPE the child may take assistive technology home

General Principles

1. Assistive technology can only enhance basic skills, it cannot replace them. (Assistive technology should be used as part of the educational process, and can be used to teach basic skills.)
2. Assistive technology for students with visual impairments is more than an educational tool, it is a **fundamental work tool** – it is equivalent to pencil and paper for non-disabled students.

3. Students use assistive technology to access and use standard tools, complete educational tasks, and participate on an equal basis with non-disabled peers in the regular electronic educational environment.
4. Use of Assistive technology does not automatically make educational and commercial software/tools accessible or usable.
5. Appropriate technology at the appropriate time. ("We will use no technology before its time" (when it is appropriate for the student))

Assistive Technology Evaluation Principles

1. An assistive technology evaluation conducted by a professional, knowledgeable in regular and assistive technology, is needed to determine whether a child requires assistive technology devices and services and should be delineated in the IEP.
2. Assistive technology evaluation is an extension of the Learning Media Assessment. You need basic (print and/or braille) reading and writing functioning found in the LMA, FVE, LVE, etc. to determine and evaluate appropriate assistive technology requirements.
3. Assistive technology evaluation must address the alternative and augmentative communication needs (ability to communicate needs and change the environment) for students with multiple impairments.
4. To be effective, an assistive technology evaluation should be ongoing and looking 3 years in the future.

Student Guidelines

1. Every student's assistive technology needs are unique. Student needs should be matched with necessary technology rather than matching available equipment to student needs.
2. Functional use of assistive technology may require a combination of large print, speech, or braille. A student may require redundant sensory feedback in addition to their primary learning media (e.g. low vision student using speech output or a totally blind students using speech and braille in combination).
3. The goal is to maximize the functional print and/or braille reading, writing, and/or communication rate.
4. Reading paper materials (print or braille) may be different from reading electronically (using a computer monitor, CCTV, speech output, audio tape, or refreshable braille).
5. Ergonomics is important for all students at all grades with all equipment and materials. This includes keyboard location, monitor placement, feet flat on floor, book placement, assistive technology location, etc.
6. Learning and using assistive technology is a developmental process. If a student's communicative or sensory functioning, i.e. hearing, vision, and/or tactual skills, change, a new technology evaluation is needed. Time and instruction is needed for learning new sensory, learning media, and assistive technology/communication skills.
7. Every student needs a personal communication (reading and writing) system to communicate with themselves and others.
8. Recreation, leisure, entertainment and other socialization activities are valid uses of assistive technology.

Teacher Guidelines

1. Teach needed technology skills before they are required. Thus, the student can then focus on regular classroom instruction rather than simultaneously learning the curriculum and the new assistive technology skills.
2. Technology training for teachers make students better users and maximizes the impact of monies expended. Keep teacher skills up to date. Training includes allowing teachers to spend scheduled time with a manual and equipment to develop skills and lessons.
3. Teachers need access to a phone (long distance) near the assistive technology for tech support calls.
4. Collaboration between vision/assistive technology teacher, computer teacher, and computer maintenance professionals helps ensure a functional/seamless assistive/regular technology environment.

Equipment

1. Ensure assistive technology is compatible with existing equipment or newly installed/upgraded application software. Purchase software maintenance agreement for assistive technology software when available.
2. Technology changes as a student moves to different schools at different grades. Planning is essential to fit assistive technology into the next technological environment (hardware, software, operating system, network, etc.).
3. Keep assistive technology (software and hardware) current.

Assistive Technology Definitions

Screen reader - software program that works in conjunction with a speech synthesizer to provide verbalization of everything on the screen including menus, text, and punctuation.

Screen magnification - software that focuses on a single portion (1/4, 1/9, 1/16, etc.) of the screen and enlarges it to fill the screen.

Refreshable braille display - provide tactile output of information presented on the computer screen. Unlike conventional braille, which is permanently embossed onto paper, refreshable braille displays are mechanical in nature and lift small, rounded plastic pins as need to form braille characters. The displays contain 20, 40, or 80 braille cells, after the line is read, the user can "refresh" the display to read the next line.

Braille translation software - translate text and formatting into appropriate braille characters and formatting.

Braille writing equipment - used for creation of paper braille materials. Can be manual or electronic devices.

Video Magnifier - magnify a printed page through the used of a special television camera with a zoom lens and displays the image on a monitor.

Portable notetaker – small portable units that employ either a braille or standard keyboard to allow the user to enter information. Text is stored in files that cam be read and edited using the built-in speech synthesizer or braille display. File may be sent to a printer or braille embosser, or transferred to a computer.

Braille embosser - a braille printer that embosses computer-generated text as braille on paper.

Scanners - a device that converts an image from a printed page to a computer file. Optical-character-recognition (OCR) software makes the resulting computer file capable of being edited.

Adaptive keyboard - offer a variety of ways to provide input into a computer through various options in size, layout (i.e. alphabetical order), and complexity.

Augmentative communication device - provide speech for people who are not able to communicate verbally. Device may talk, user indicates communication through the use of tactile symbols, auditory scanning, large print symbols, etc.

Resources

- Texas School for the Blind and Visually Impaired - www.tsbvi.edu
- IDEA partnerships - www.ideapolicy.org
- Special Education Technology, British Columbia - www.setbc.org
- American Foundation for the Blind - www.afb.org
- American Printing House for the Blind - www.aph.org
- National Association of State Directors of Special Education Blind Initiative Guidelines

Other Important information

- Touch typing is an important life-long skill for all students who are able. (suggested typing speeds by 8th grade 30 wpm. And 50 wpm. by high school graduation)
- Teach keyboard commands for applications. (Be proud to be mouse free!)
- Limit use of keyboard enhancements (large print or braille keycaps) to ensure generalization of keyboarding skills.
- Academically able students need a portable note-taking option (not restricted to a lap-top).

Developed by Jim Allan, Statewide Technical Support Specialist Texas School for the Blind and Visually Impaired and Jay Stiteley, Field Representative The Seeing Eye, Inc