

Intonations + Assistive Technology = Success

By Christopher Michael Lee

Mine is a story too commonly experienced by parents and teachers around the world. I was diagnosed with a cognitive deficit disorder in the second grade, placed in special education and speech classes, scored 650 on my first SAT, and had to work my way through developmental studies before I was mainstreamed at the University of Georgia. I was doomed to failure from the start.

However, I was one of the fortunate ones and beat the system. Channeling my energies into a hobby and developing a strong support network became my salvation. Through my support network, an academic action plan involving tutors, mentors, creative strategies, and accommodations, I survived.

I understand firsthand that assistive technology is an important piece of the support system individuals with learning disabilities require to achieve success. And I have discovered that achieving success with assistive technology is aided greatly by developing an action plan that is "task" driven.

A task plan simply means that you evaluate each task – writing a paper, reading a menu, or passing the GED test – and break it down into specific sub-tasks, reading the menu or studying vocabulary- and then incorporate strategies, accommodations, assistive technology and the right support system to successfully complete the task.

Exactly what is Assistive Technology?

AT is any item, piece of equipment, or product that is used to increase, maintain or improve the abilities of individuals with disabilities: tools to promote independence across all areas of daily living - in the classroom, at work, in the home, or in other social settings. However, assistive technology is not the answer to *all* problems faced by people with learning disabilities or their service providers. Those seeking technological assistance should focus not on the device, but on what the device can do for the individual in need. The fit must be right, and the biggest or most expensive may not always be the best fit. The key to selecting the most appropriate tool involves many elements: seeking a thorough team evaluation, finding the resources to obtain the technology, customizing the technology to make the best fit, and providing the time as well as the patience for training.

Assistive technology tools range from low-tech, low-cost items to high-tech more expensive devices. Low-tech devices require little or no training; high-tech devices may require extensive training.

General Facts about Assistive Technology

Assistive technology can be used to accommodate and/or modify specific tasks, or be incorporated into performing tasks. Assistive technology providers (i.e. rehabilitation engineers, certified assistive technology professionals, see www.resna.org) evaluate formally and in some cases informally the function limitation of the disability to match the appropriate assistive technology.

With this in mind, the re-authorized Assistive Technology Act (The Tech Act) of 1998 defines an assistive technology device as any item, piece of equipment, product or system,

whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities. (Authority: 29 U.S.C. 3002). In addition, the Individuals with Disabilities Education Act (IDEA) incorporates assistive technology into its definition. For more information, see www.ideapractices.org/law/index.php.

Facts About Assistive Technology and the Individual Education Plan (IEP)

- Assistive technology needs must be considered along with the child's other educational needs.
- Needs for technology must be identified on an individual basis.
- Identification of technology needs must involve family members and a multidisciplinary team.
- Parents or IEP members can ask for additional evaluation or an independent evaluation to determine assistive technology needs.
- When an evaluation is being conducted, consider fine-motor skills, communication, and alternatives to traditional learning approaches.
- Lack of availability of equipment or cost alone cannot be used as an excuse for denying an assistive technology service.
- If included in the IEP, assistive technology services and devices must be provided at no cost to the family and, if so indicated, devices must be allowed to go home with the student.
- Parents always have the right to appeal if assistive technology services are denied.

The need for assistive technology must be considered like other needs, on a case-by-case basis. Assessments can also be requested through the IEP process. IEPs that include assistive technology should be written so that students have access to these accommodations not only for in-class work, but also for projects and all types of tests, including high-stakes assessment.

According to IDEA '97 regulations, on a case-by-case basis, the use of school-purchased assistive technology devices in a child's home or in other settings is required if the child's IEP team determines that the child needs access to those devices in order to receive a free, appropriate, public education. To support the need for assistive technology, parents and professionals should document precisely how the student benefits educationally.

Inexpensive Low Tech Solutions

The simplicity and ready availability of low-tech devices should not be overlooked. Inexpensive **color highlighters**, for example, can help individuals with reading difficulties distinguish words that appear the same- like proud, pound, and pond. Providers help the student highlight troublesome words in different colors and make them visually aware of the differences between these words. Such training leads the student to a higher level of awareness of his/her disability.

Valuable High Tech Assistive Technology Devices

What are some useful technology solutions that can increase task performance and accommodate the students with whom you are working in your classroom? And what are some

resources that you can evaluate before purchasing? What follows is a brief description of some of the most popular and valuable assistive technology today.

Computer Screen Readers and Talking Word Processors

For reading comprehension and written expressive capabilities, screen readers and talking word processors are the most helpful assistive technology solutions on the market. The most effective devices utilize software that takes a multi-sensory approach, combining auditory, visual, and tactile sensory inputs and outputs. Many of these assistive technology devices were originally developed for individuals with visual and mobility impairments, but for the last couple of years have been successfully applied to the learning disability arena.

There are several software packages that give students the ability to hear the text they see on their computer screens as well as hear the text they are typing into the computer. Most of these programs have additional reading and writing components built into the software, including:

Spelling - WordSmith incorporates the latest advanced spell checker specially designed to solve the most complex phonetic errors. The spell checker can be customized to suit individual needs. Errors are logged into the database to monitor user progress and help the development of literacy skills.

Homophone Support - Identifies and provides audible definitions for various like-sounding words.

Word Predictions - Aid in sentence construction by suggesting and predicting words. Word predictor will learn as correct text is typed, dramatically aiding the development of literacy and increasing accuracy. It is grammar/phonetic based.

Thesaurus – Increases literacy and creative writing skills by allowing alternative word lookup and definition.

Pronunciation Tutor – Breaks words into syllables, allowing easy recognition and pronunciation so aiding accurate speech.

Calculator – An on-screen speaking calculator with all the main functions of a basic or scientific calculator.

Scanning - Scans any text document into Microsoft Word or other word processors for enabling on-screen editing and text reading.

Optical Character Recognition (OCR) scanning programs – “Read” any material from hard copy (books, magazines, etc.). A scanner and computer with multi-media capabilities are required in addition to the software. Students can scan the material into the computer, which will read text aloud via a speech synthesizer. Options such as voice, rate of speech, and screen display may be individualized. For a user who is scanning text with graphics, the best bet would be to buy an OCR software package developed for individuals with disabilities.

Speech Maker - Converts selected text into speech, which can be saved as a WAV,MP3, or WMA file.

Speech Recognition: Operates in conjunction with specially equipped personal computers. Such programs enable the user to dictate to the computer, converting oral language to written text. Speech recognition comes as a feature in many screen reading and talking word processors, however, the most effective speech recognition programs are stand alone products such as **IBM ViaVoice** (<http://www.ibm.com/software/speech/>) or **Dragon Naturally Speaking** (<http://www.dragontalk.com/NATURAL.htm>).

Check out several screen reading/talking word processor programs and explore some of the above features by visiting: **Read & Write** (<http://www.texthelp.com>), and **WYNN** (<http://www.freedomscientific.com>), and **WordQ** (<http://www.wordq.com>).

Another great program is **Reach Interface Author** (<http://www.ahf-net.com/>), offering a screen reader, talking word processor, automatic windows management features, word scanning, and **Smartkey** word prediction. This software provides students with the opportunity to remediate their spelling skills while accommodating them.

Screen Magnification Software

Screen Magnification Software uses magnification and speech together or independently to increase word recognition and relieve stress, which can improve the individual's reading skills. Two good screen magnification software products are **MAGic** (<http://www.freedomScientific.com>) and **Zoomtext** (<http://www.enablemart.com>).

Books on Tape/CD-ROM and or E-Text

Utilizing books on Tape, CD-ROM and/or E-Text can be help in accommodation and remediation of students. There are two primary services that record books. They include:

Recording for the Blind and Dyslexic (RFB&D): is a non-profit service organization providing educational books (academic text books) on audio- cassette and CD-ROMs. Visit the RFB&D web site at <http://www.rfbd.org/>.

The National Library Service for the Blind and Physically Handicapped (NLS), a free service of the Library of Congress, often referred to as Talking Books, offers leisure materials and magazines on audi-cassette and CD-ROM's. Visit the Talking Books web site at <http://www.loc.gov/nls/>.

Outlining/Brainstorming Software

Many individuals with a learning disability have difficulty organizing topics, categories and sequences. An appropriate method for many adults students with a learning disability is to allow them to "dump" any ideas on paper without regard to organization. Outlining programs allow the student to dump information, which can subsequently be placed in appropriate categories and ordered more easily. **Inspiration** is one type of outlining software that can be

useful for your students. A free evaluation copy of **Inspiration** can be downloaded at (<http://www.inspiration.com>).

Microsoft Assessable Features

All service providers should be aware of features in current Microsoft operating systems. Take some time to check out the **Accessibility Folder** under the control panel. Microsoft has gone to extra lengths to provide assessable feature in their operating system (i.e. text font, background screen colors, and enlarged computer icons, such as desktop icons and mouse).

It is also important that you are aware of helpful features in Microsoft Word. Under **TOOLS** there are two features that are similar to word prediction - **Autocorrect** and **Autotext**. Another good feature is the **Autosummarize** feature under **TOOLS**. This feature takes the text and summarizes it in highlighted format. Key topic areas are then pasted into a summarized document.

Freeware /Shareware

Bookshare: <http://www.bookshare.org/web/Welcome.html>
ReadPlease: <http://www.readplease.com/>
Talk To Me: <http://www.talk-to-me.net/>
Text Edit (Mac): <http://www.tex-edit.com/>

In this article, I have offered just some of the solutions to help increase task performance utilizing assistive technology. Take some time to find out more about the resources in your area. Most states have an assistive technology project (<http://www.resna.org/taproject/index.html>) that offers a wide selection of assistive technology services, including, in some states, equipment lending libraries. Also, most assistive technology software vendors offer demonstration disks or free downloads. Two good sites to visit regarding buying assistive technology are <http://www.synapseadaptive.com/> and <http://www.atdepot.com/>.

The world of assistive technology opens doors for individuals with disabilities. It offers valuable help to make us more independent in school, at work or in a social environment. Not all technology works for everyone, but when you do find the right match, gaps in learning start to close and success usually follows.

Assistive Technology Resources

AbleData (<http://www.abledata.com/>)

Federally funded project that provides information on assistive technology and rehabilitation equipment.

Alliance for Technology Access (<http://www.ataccess.org/>)

A network of community-based Resource Centers, Developers and Vendors, Affiliates, and Associates dedicated to providing information and support services to children and adults with disabilities, and increasing their use of standard, assistive, and information technologies.

Center for Accessible Technology (<http://www.cforat.org/>)

A cooperative effort by parents, professionals and people with disabilities to harness the emerging power of computer technology to aid children with disabilities.

Center for Applied Special Technology (CAST) (<http://wings.buffalo.edu/hot/cat/index.htm>)

An educational, not-for-profit organization that uses technology to expand opportunities for all people, including those with disabilities.

Rehabilitation Engineering and Assistive Technology Society of North America (RESNA)

(<http://www.resna.org/>)

An interdisciplinary association of people with a common interest in technology and disability, and a common goal of improving the potential of people with disabilities to achieve their goals through the use of technology.

State Tech Act Programs (<http://www.ataporg.org/links.htm>)

Provides information about increasing the availability and utilization of assistive technology devices and services for all individuals with disabilities in the United States and territories.

Trace Research and Development Center (<http://trace.wisc.edu/>)

Provides information about preventing the barriers and capitalizing on the opportunities presented by current and emerging information and telecommunication technologies, in order to create a world in which those technologies are accessible to all.