



# NetNews

an online newsletter devoted to adult literacy

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## Assistive Technology

Most of us are surrounded by technology, whether we like it or not! We own and use computers, cell phones, electronic organizers, and portable music players. We communicate via email, send and receive text or voice messages, access the latest news from the Internet, download music, and shop at the biggest mall ever online.

**Assistive technology is intended to maximize a person's abilities while minimizing the challenges of having a disability.**

Technology has changed our world. Unfortunately, for many adults with learning disabilities (LD), the literacy demands of technology are beyond their reach. Since most adults with LD struggle in the area of reading, they are frequently not able to understand higher levels of written language or remember multi-sequence procedures often necessary for accessing and using technology.

However, a variety of **assistive technology** is available for persons with disabilities that is intended to maximize their abilities while minimizing the challenges of their disabilities. The purpose of this issue is to share a selection of assistive technology devices appropriate for adults with language-based learning disabilities or related learning difficulties.

The Assistive Technology Act of 1998 (ATA) provided the following definitions:

**Assistive technology devices** are any items, pieces of equipment, or product systems, whether acquired commercially, off-the-shelf, modified, or customized, that are used to increase, maintain, or improve functional capabilities of individuals with disabilities.

**Assistive technology services** are any services that directly assist an individual in the selection, acquisition, or use of assistive technology.

Examples of "low-tech" assistive technology devices include:

- Eyeglasses
- Pencil grips
- Tape recorders
- Calculators
- Big button or amplified phones

Examples of "high-tech" assistive technology devices include:

- Voice activated computers
- Specialized educational software
- Speech-to-text or text-to-speech software
- Speaking dictionaries
- Talking calculators



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The following reviews of assistive technology devices for reading and writing difficulties are excerpted from *LD ACCESS/AECOM MANUAL, A Practical Guide to Using Technology with Learning Disabled Adults in Adult Literacy Programs* (2006). This resource was a joint venture of the LD ACCESS Foundation of the Fisher Landau Center for the Treatment of Learning Disabilities at Albert Einstein College of Medicine. Another source of information was *Ten Facts Concerning Assistive Technology and Internet Resources* (2002) by Jeni Mundl, Courage Center.

## Assistive Technology for Reading Difficulties

### Hardware adjustments

Sometimes a simple hardware adjustment can assist with the use of a computer. For PCs, one can customize the speed or response through a Windows program called Accessibility. From the task bar, click on Start, then Accessories, then Accessibility to access the options for the screen, keyboard, and mouse. It may take some experimenting to find the best settings for individual users.

### Electronic Speaking Dictionaries

Electronic speaking dictionaries are small, lightweight, and can fit in a purse or bag. They provide pronunciation of unknown words with a "say" button, automatic phonetic spelling correction, multiple dictionary meanings, and antonyms and synonyms in the thesaurus version. Franklin Electronic Publishers at [www.franklin.com](http://www.franklin.com) sells the **Merriam-Webster Speaking Dictionary and Thesaurus** (MWS-1840) for about \$70-80. Although the speaking voice is rather mechanical, native English speakers will most often recognize the word after several repetitions.

### Electronic Reading Pens

The **Quicktionary Reading Pen** is a handheld device that scans printed text, reads or spells the word(s) aloud, and provides dictionary definitions. These pens are available in several languages from [www.wizcomtech.com](http://www.wizcomtech.com) and cost \$100-200. Some users may find these pens difficult to hear or manipulate over small or close text.

## Software programs

Certain specialized educational software programs offer instructors wonderful opportunities to **support and supplement instruction**. However, it is critical that placing learners on computers does not substitute for direct instruction. The following educational software *mostly* follows the basic principles of appropriate instruction for persons with LD:

1. Provide direct, systematic, and sequential instruction
2. Prevent overloading
3. Teach to mastery
4. Prevent forgetting through practice
5. Provide immediate and corrective feedback

### The Alphabet

by Protea Textware Pty. Ltd

[www.proteatextware.com.au](http://www.proteatextware.com.au)

Price: \$35 (home) up to \$300 (20 user)

This program was designed for adults and teaches letter names, letter/sound associations, upper and lower alphabet letters, and sight word spelling. It requires the use of the mouse and very basic keyboarding skills. No reading is required and ample repeated practice and feedback are provided. It does not provide instruction in segmenting or blending so the spelling component should be used for sight word practice only.

### Ultimate Phonics

by Spencer Learning, Inc.

[www.spencerlearning.com](http://www.spencerlearning.com)

Price: \$69.95

This program includes 262 lessons for letter names, letter sounds, and sight words. The sounds are taught sequentially in isolation followed by controlled word lists and sentences. Users only need to click with the mouse to hear repeated pronunciations of the sounds, words, and sentences. It is not interactive and instructors are advised to listen to users read the words and sentences to assure mastery. It does not provide any spelling practice.

## **Reading SOS (Strategies for Older Students)**

by Lexia Learning Systems, Inc.

[www.lexialearning.com](http://www.lexialearning.com)

Price: \$159 (home)

This program provides instruction and application of decoding or word attack skills progressing from sounds to words to text. Learners may be placed in five different levels including sounds, syllable types, prefixes, and suffixes. It requires the use of a mouse and basic keyboarding skills. It provides many opportunities for practice and repetition, prevents overloading, and offers immediate feedback. Some of the timed activities may be frustrating for some older adults, but the time components can be adjusted.

## **Omti-Rogers Multi-Sensory Reading, Spelling and Penmanship Program**

by The Rogers Center for Learning

[www.rogerscenter.com](http://www.rogerscenter.com)

Price: \$200 (single)

This program was designed for learners experiencing difficulty with literacy skills due to LD or ADHD. It provides instruction in reading that progresses from sounds to text up to the sixth grade level. It is based on the Orton-Gillingham method of multi-sensory instruction and is ideal for adults with reading disabilities. Users are able to repeat sequential activities until they reach mastery and are provided with response feedback. It may require some extra instruction in computer use.

### **NOTE:**

The *LD ACCESS/AECOMMANUAL* evaluated other software programs that focused on vocabulary development, silent reading comprehension, or GED preparation. Many did not provide sufficient practice or repetition, included too much text at one time, or required reading levels that were too high for independent use. Therefore, contextual software should be used carefully and cautiously as it tends to quickly overload adults with reading difficulties.

## **Text Reading Software**

Text reading software converts scanned text from the Internet, word processing files, books, papers, letters, and even tests into speech. It give adults with reading difficulties the opportunity to access written information through listening that would otherwise be unavailable to them.

### **CAST eReader or AspireREADER 4.0**

by Center for Applied Special Technology

[www.CAST.org](http://www.CAST.org)

Price: \$230 and up

The eReader or enhanced Aspire READER 4.0 allows users to select from several types of male or female voices. Visual highlighting allows the user to follow along and repeat the computer-read text. The text can be read word-by-word, sentence-by-sentence, or as a whole. It can also be used to read only unfamiliar words or as a way of proofreading written work for spelling and grammatical errors. A toolbar at the top of the screen provides easily recognizable commands such as stop, play, rewind, fast forward, etc.

### **Kurzweil 3000**

by Kurzweil Educational Systems

[www.kurzweiledu.com](http://www.kurzweiledu.com)

Price: \$395 (single)

This software allows users to scan text into the computer and listen as the text is read back. It can also be used to listen to text from the Internet. A dictionary provides pronunciation and meaning for unfamiliar words. It offers study skill tools such as highlighting key text, adding voice notes, audible spell check, and test-taking features that read exam questions and student responses.

### **WYNN (What You Need Now)**

by Freedom Scientific Company

[www.freedomscientific.com](http://www.freedomscientific.com)

Price: \$375 (single)

This software converts scanned text into a digital form that can be read aloud. It has built-in email, word prediction, outlining mode, text highlighting, bookmarking, and a dictionary. It can also block graphics from web pages so that the text is easier to read.

# Assistive Technology for Writing Difficulties

## Word Processing

Word processing programs are typically installed on most personal computers at the time of purchase. Standard word processing features that may benefit users with writing difficulties include selecting a simple document view, choosing a font style that is easy to read, enlarging the font size, using spelling/grammar check, and symbolic task buttons for procedures.

## Electronic Dictionaries

As described on page 2, electronic dictionaries - even without the speak or say feature - provide automatic phonetic spelling correction. The user types in how they hear the word to the best of their ability, and the electronic dictionary searches its internal list for possible spelling matches. Most native English speakers are able to recognize the correct spelling even if they cannot spell it on their own.

## Keyboarding

**Keyboarding Skills** by Educators Publishing Service

[www.eps.com](http://www.eps.com)

Price: \$20

This software incorporates spelling practice into touch-typing instruction and was designed specifically for LD persons. Users learn an alphabetic sequence to the keyboard that progresses from individual letters to combinations such as “cde, hijkl, mnop” and then to two, three, and four letter words. Practice continues to typing phrases, sentences, and multi-syllable words.

## Writing

**Draft:Builder, Write:OutLoud, and Co-Writer 3000/4000** by Don Johnston, Inc.

[www.donjohnston.com](http://www.donjohnston.com)

Price: \$300-400 (single and bundles)

These programs are designed to support the writing process of planning, organizing, writing, editing, and review. They allow the user to have their writing read back to them by the computer and offer suggestions for spelling and word usage with a linguistic word prediction feature.

## Voice Recognition Software

**Dragon Naturally Speaking (DNS)** by Scansoft

[www.scansoft.com](http://www.scansoft.com)

Price: \$100-300 (depends on version)

Voice recognition software such as Dragon Naturally Speaking converts dictated speech to text using email programs or word processing programs such as Microsoft Word or WordPerfect. It requires creating a voice profile using a training script, microphone, and headphone (included in the package). Following the voice training, the software is able to convert the user’s dictated speech into text that can be corrected using the word processor features. *It was the opinion of the LD ACCESS Team that this type of software is not designed for persons with reading or writing difficulties.* Training and use of this software was often frustrating for users and required considerable teacher guidance and support.

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