

# Using Speech

## Speech Technology May Be the Key

By Robin Springer

According to the Centers for Disease Control, more than 2.6 million children ages six to 11 years old in the U.S. had learning disabilities (LD) or attention or hyperactivity disorders (AD/HD) in 1997-1998, and the numbers continue to increase. Individuals with learning disabilities may have difficulty with memory, writing, or comprehension. They may lose their place or forget what they are reading or they may lack organizational skills. Those with attention or hyperactivity disorders may exhibit behaviors that interfere with learning, being inattentive or impulsive.

Assistive technology with integrated speech technology has been used with great success to address the symptoms of LD and AD/HD. While critics consider use of this technology inadvisable, believing it prevents users from overcoming their disabilities, research indicates otherwise. In fact, these technologies may actually help people improve the skills with which they have difficulty. Students who routinely received failing grades before using the technology often excelled academically upon implementing the products.

"With this technology, kids are able to show what they know, not what their disability is," says Cindy Johnson, vice president of marketing at Kurzweil Educational Systems.

Speech recognition assists people with LD and AD/HD in products including:

### Literacy Software

Literacy software encompasses reading software, scanning software, and learning software, and includes Kurzweil 3000 by Kurzweil Educational Systems and Read and Write by TextHelp Systems Inc. These programs are beneficial for individuals who easily understand spoken words, but have difficulty reading and decoding information.

For example, a student wants to read an assignment. He could scan the text into the computer or open an existing document. The software reads the text aloud, highlighting the words as they are read. This multi-sensory approach helps people with LD or AD/HD process information more effectively and has been shown to improve reading speed and increase vocabulary. And, because the print is highlighted as the words are read, the program helps users keep their eyes on the correct line when they are reading.

Kurzweil 3000 ships with ScanSoft's RealSpeak and IBM's text-to-speech voices and is compatible with any SAPI 3 to SAPI 5 speech engine. NeoSpeech's VoiceText is currently available as an option and will be included in the product's next version. TextHelp Systems Inc.'s Read and Write incorporates ScanSoft's text-to-speech and uses Microsoft's speech engine for voice input.

### Desktop Dictation Software

Desktop dictation software, when used by people with disabilities, is most commonly associated with upper extremity limitations. But talking into the computer instead of typing offers many benefits for those with learning and attention disabilities.

For many people with learning disabilities, typing becomes so daunting that it interferes with the thought process. And, as most people can dictate significantly faster than they can type, speech recognition makes it easier to get one's thoughts on paper. Speech recognition software like ScanSoft's Dragon NaturallySpeaking®, IBM's ViaVoice®, and Commodo's QPointer enable users with learning disabilities to bypass the input devices that create the difficulty, allowing them to concentrate on what

they want to write, not on the mechanics of writing or spelling.

### Talking Dictionaries and Spell Checkers

These products help people whose difficulty spelling or reading interferes with their ability to look up words in a dictionary. The Readingpen® by WizCom Technologies is a portable device that enables individuals to scan words or lines of text and hear the pronunciation or definition. Many literacy programs incorporate speech recognition into their dictionaries and spell check programs to assist people while they are typing.

### Talking Calculators

Talking calculators speak the numbers that are pressed on the keypad. This tool works well for individuals who tend to punch in the wrong numbers, transpose numbers, or have difficulty interpreting the calculation total.

Speech technology is not a perfect match for everyone with LD or AD/HD. Often, people with auditory processing difficulties are not comfortable with synthesized speech; and those who have difficulty composing text may get bogged down when using desktop dictation. But for individuals who are able to take advantage of features that incorporate speech technology, the benefits can include increased motivation and creativity, decreased stress and fatigue, increased ability to concentrate, and improved reading and writing abilities.

Lisa Smolen of Smolen & Associates works with schools to implement assistive technology for LD and AD/HD students. She says, "If we can make that brain connection, we can unlock a world of possibilities."

Speech technology appears to be one of the keys.



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