

Software opens doors

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New programs designed for special-needs students

By Eric Goldscheider
GLOBE CORRESPONDENT

The best news since spell-checkers for people with learning disabilities is a raft of new software designed to help compensate for some weaknesses and provide strength training to overcome others. Some of that software is designed specifically to help organize thinking or to help keep users on task. The rest are adaptations of programs developed for the physically challenged. Text-to-speech programs have been adapted to help with reading and voice recognition to help with writing.

Several brands are on the market containing variations on each of the four broad categories of software useful to those with learning disabilities. Some companies bundle several kinds of programs into one package and consultants have appeared on the scene who specialize in identifying and custom fitting the right programs and other tools to individual needs.

Most if not all the software developers have Web sites and a number of organizations and dealers list links to many of them. Once you get into one Web site of the far-flung LD (that's shorthand for learning disability) community, you can follow links to any number of organizations and service providers. As good a place as any to start is a Minnesota group called Closing the Gap (www.closingthegap.com).

One consultant who sells equipment and software besides advising people on what is right for them is Martin Tibor. His company, based in San Rafael, Calif., is called Synapse Adaptive. He refers to himself as a "solution provider" and he says he has a database of 20,000 individual clients. Among them are people such as an editor for a major San Francisco newspaper and others who,

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based on their jobs, one might not expect to have learning disabilities, said Tibor.

There is a longstanding debate among educators about how best to deal with learning disabilities. Those who believe in remedial solutions argue that technology often provides little more than a crutch that hinders people in the long run. The so-called "compensatory" camp says there is no reason why people who can be helped by technology should not make full use of it.

Tibor takes the position that a lot of the available hardware and software does both. It compensates for weaknesses and helps teach good habits. He argues that, at its best, assistive technology facilitates learning.

Because there are so many products to choose from and because diagnosing learning disabilities is as much an art as it is a science, much of Tibor's work involves assessing the particular strengths of available tools and designing packages to suit individual needs.

Voice recognition is about as good as it is going to get, said Tibor. "It's a pretty mature technology," he said.

Dragon Systems Inc. in Newton produces one such program called Dragon Naturally Speaking. With some practice, one can achieve 98 to 99 percent accuracy while talking at a rate of 160 words a minute, accord-

ing to Tibor, bypassing the need to be able to type in order to write on a computer. Among others, people with a variety of attention disorders might be helped by this technology because it gives a more rapid and less cumbersome connection to the written word.

Optical character recognition technology - which is the basis for text-to-speech applications - has found its way into a variety of programs that help people read. But unless printed material is already in a digital form, using this type of software requires a scanner for converting words on a page into something the computer can manipulate.

There are several brands of this software, one being Kurzweil 3000 made by Lernout & Hauspie in Burlington. This program offers users a number of strategies for improving reading. It will not only convert text to speech but it will display the text on the screen and highlight it in a number of different ways while it is reading it aloud. Users can opt for silent reading. One can speed it up, slow it down, have the word being read magnified with a different colored background. You can also magnify the whole screen to your preference. Another feature is a built-in dictionary that defines words you click on.

Programs like these often come with collections of literature already on compact discs to make them accessible to people who have a hard time reading. Activists are pressing publishers to make more books



GLOBE PHOTO / NANCY PALMERI

Globe correspondent Eric Goldscheider (a.k.a. "cold cider") dictated this story to a computer using voice-recognition software.

When does a writer not write? When, as I'm doing now, he speaks to his computer. I spent approximately two hours with this machine and Aiken Chiles said Mondays.

Well, "Aiken Chiles said Mondays" is not exactly what I had intended to write. What I want say, I mean write, is "I can truly say that I'm amazed."

UC there is a learning curve. Not only do you have to get used to using the computer, but the computer has to get used to you. You see there is a mistake at the beginning of this paragraph. After I noticed that mistake, I put the program into training mode, I typed in exactly what I would like the computer to display when I say "you see" in the intonation I tend to use. You like that fancy word, "intonation"? Well, it took a while to get the computer to recognize that. I went through "into nation," "in donation" and a few other combinations before I came up with the right

Oh, say, cæ

word. Now I can say "intonation" and, presto, it understands.

I can also accomplish this training without doing any typing. I can get the job done with voice commands.

As I'm talking this story, rather than writing it, I have to be careful about telling the commands. As long as I embed them in sentence, the voice-recognition program will relate them to you as the words I want you to read. If I pause before and after the command, then the voice-recognition program will recognize it as a command and, hopefully, do what I want to do. When I make a mistake in speaking or the computer makes a mistake in understanding, as the case may be, all I say is "scratch that" and the last phrase I said disappears from the screen. I can also tell the computer, and I mean TELL, to select a certain word and then tell it to "correct that." Miraculously, it will give me a list of choices to which I

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John Znaud of Gateway Regional School in Huntington, checking a computer geared for those with learning disabilities.

available on disc.

Kurzweil 3000 has a word-prediction program built in that is similar to other brands such as Co-Writer made by Don Johnston Inc. in Volo, Ill. This is a program designed to help people whose minds wander easily to stay on track while they are writing. It is also a useful organizational tool for people who find it hard to string words together

into sentences. The way it works is that as one types, the program posts a list of up to 10 words that might follow logically into the sentence. As one starts writing a word, the program will modify that list to fit the first letters chosen. It lets the writer cut directly to one of the words on the list to speed typing.

Programs like these are useful for staying focused on a writing task. They also help direct people to the proper forms of the words they want to use.

Another program on the market designed to help writers organize thoughts is called Inspiration and is made by a company of that name in Portland, Ore. This software can be used by individuals or by a teacher with an entire class. It takes ideas gathered in a "brainstorming" session and then displays them in ways useful for producing a finished written product. Once a series of ideas is entered into the program they can be manipulated into a variety of kinds of outlines, some more linear and others more web-like.

Tibor, of Synapse Adaptive (www.synapseadaptive.com), said that as he becomes more and more attuned to learning disabilities he spots them in many people who may not have been aware that they have them. Computer and other information technology is providing a constantly expanding menu of tools and approaches for managing and overcoming differences in the way people process

information, he said.

Interestingly, computers also have played a role in bringing certain disabilities to light, according to Tibor. What he calls the "man-machine link" puts humans, who are infinitely varied in the way they think, in contact with machines, which operate along highly predictable rules. When you are communicating with another human that person will make unconscious allowances for your style that a computer won't. "How people function is magnified by this machine," said Tibor.

Learning and communication styles come in a long and complex continuum of strengths and weaknesses. So it makes sense that a small industry is emerging around computer hardware - and especially software - that tries to dissect and in some ways re-create the writer's art by mechanizing aspects of the thought process. The Writers Store in Los Angeles, Calif., (www.writers-computer.com) offers dozens of programs that promise to abet would-be scribes in the production of masterpieces in any number of genres.

One of the few certainties about how electronics will affect the way we receive and impart information in the future is that those of us who were amazed by spell-checkers a mere decade ago will be in for a few more surprises before we are through.

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can correct it. If I don't like any of the choices, I can spell in something that I do like. In this process not only am I correcting the document I'm working on, but I'm also training the computer to be more sensitive to my video sink or season the future. Let's try that again: . . . To be more sensitive to my idiosyncracies in the future. Get the picture?

Let me tell you little bit about the training. When I first fired up this program, Dragon Naturally Speaking, my instructions were to read aloud to the computer. I logged in as a new user and created a voice file with my name. Then I was ready to start training this machine to be friendly to this particular user. The first chapters of the novel "3001: The Final Odyssey" by Arthur C. Clarke were posted on the screen, one snippet at a time, and I was prompted to aloud into the microphone. You'll recall that the prequel to this book featured HAL,

the lip-reading computer, who tries to do away with his masters. Hmmm. The next selection the computer had me read was from "Dogbert's Top Secret Management Handbook." Parts, especially the part about dressing for leadership, using the pope of an exemplar, had me laughing so hard it's a wonder the computer understood anything. But enough about my sense of humor.

The next step in the training process is to load some of your own writing into the program so the software can get acquainted with your style. It sifts through the document finding all the words it doesn't have stored yet and asks you to read them aloud one at a time. You can go back and do more of this training in the future but within an hour or so you are ready to start dictating. The thing is that, unlike most humans, you only have to correct it once and the next time it gets it right. As time goes on, the computer becomes more and more in tune

with your voice.

At this point I am about three days into the training, having worked two or three hours with the computer yesterday and the day before, and the speed is definitely picking up. One thing I had to learn is that the computer prefers that I speak more quickly and in complete phrases - because it figures things out from context - than if I talk like I'm trying to give directions to a French tourist.

I have the luxury of going back to edit this piece using the keyboard but I can also use my voice to move the cursor around. There is a more powerful version of this program that is a bit slower to learn (both for the human and the machine) but when mastered can be operated with zero manual input.

I cheated tiny bit here and there on this document but more than 95 percent of what you just read went straight from my voice to the screen. Of course, I'm sending it to my editor now and there's no telling what she'll do to, I mean with, it.