

# Assistive Technology for Special Kids

Assistive technology. . .there's hardly any more exciting or talked about area of promise for kids with special needs. Cutting edge technologies burst upon the scene almost daily, and with each new device or service, the needs of so many kids can be met in exciting ways. But assistive technology is not an answer all by itself; it's a tool, or more accurately, a set of tools that help our kids interact with and function more independently and successfully in the world around them.

## ***Definitions***

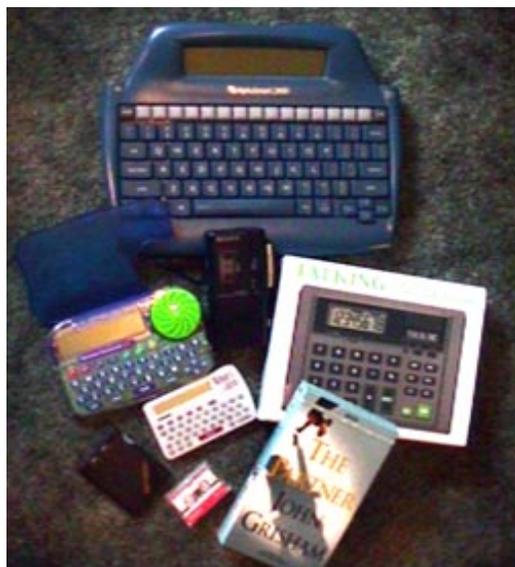
Federal legislators have been very careful not to limit the field of assistive technology to preconceived notions revolving around high tech computers and powered wheelchairs. Officially, assistive technology is defined as any device, whether it's purchased off the shelf, home-made, or modified, that helps people with special needs maintain or increase their functional capabilities. That's a wonderfully inclusive definition! It means that the poster board with three photos that we use to allow our kids to make a choice is just as much "assistive technology" as is a \$7,000 voice activated computer, a powered wheelchair, a specialized van, lowered counters in the kitchen, or a jointed feeding spoon.

Assistive technology definitions and federal regulations don't stop with broadly defined devices. They also include a full range of assistive technology related services, services that are just as important (and legally required) when technology is being considered for your child. Assistive technology related services include: evaluation, referral, procurement, maintenance, repair, updating, and training for the child, the parents, and the service providers. Especially in the area of assistive technology, the only way to ensure successful implementation is to provide for both the needed device and the services in the IEP, IFSP, or ITP.

## ***All About Devices***

To make matters a little simpler to understand, we often divide assistive technology devices into four broad, but overlapping groups. Different groups of devices tend to be used in different environments and/or by kids with different needs. Devices in different groups also tend to be the area of expertise of people in different fields related to special needs.

**Cognitive Devices** include computers and switch operated toys. An ever-increasing part of special education services in today's schools, computers and specialized software offer students with a variety of disabilities ways to do their school work more successfully independently. For very young children, switch operated toys which help teach and reinforce cause and effect and choice making are often a first step toward computer use in school. Computer use in school primarily impacts academics, so quite often professionals setting up an academic program on the computer for a child with special needs look to a special educator with assistive technology background.



**Augmentative Communication Devices** range from communication boards to dedicated computers. These devices help kids without speech find ways to communicate with others. In some cases, the child points to a choice. In other cases, she might scan different choices and hit a switch. Still other devices offer vocal output. Augmentative communication devices are usually the realm of speech language pathologists with expertise in this area, but it is not uncommon to find a child using a computer for both academic (cognitive) and communication tasks within a school setting.

**Mobility Devices** help people with special needs move in their environments. Specially outfitted vans, wheelchairs, walkers, and prosthetic skis are all forms of motor devices in assistive technology. Typically, devices in this group are recommended and customized by occupational and physical therapists or rehabilitation engineers. An important part of the purchase and customization of devices in this area involves positioning and making constant allowances for student growth.

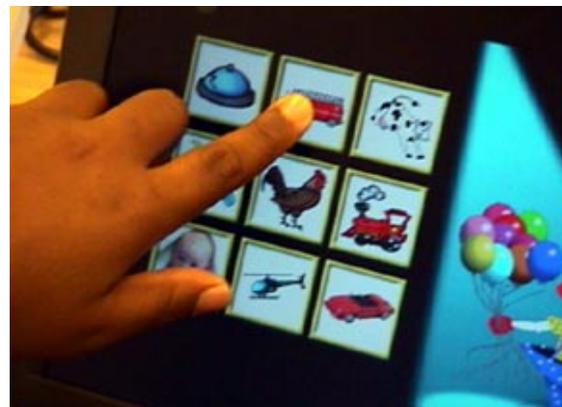
**Environmental Control Devices** include the broadest category of assistive technology. They consist of any device which helps people live in or control the environment around them. Single switch environmental controls allow a person with even the most severe physical disabilities run electrical appliances, use a computer, answer the phone, turn the TV and VCR on and off — and the list grows daily with exciting innovations. Environmental control devices, though, are often very low tech, including feeding aids, bath aids, talking clocks, flashing doorbells, and velcro fasteners on clothes. Architectural modifications, such as ramps, lowered counters, and widened doorways are also

part of the environmental control device group. Environmental control technology is usually developed and modified by rehabilitation engineers, but it is not uncommon to find truly innovative devices designed by the consumers or their families.

### ***Computer Assistive Technology - What It Means Today***

My primary interest and expertise in assistive technology lies in the area of computer technology, especially as it relates to school aged children with special needs. The use of assistive computer technology in the academic program of a child with special needs can provide him or her with some exciting tools.

1. If a child has trouble accessing a standard keyboard, there are a number of options, including larger touch sensitive keyboards with interchangeable easily created overlays, onscreen keyboards, single switches with scanning, and even voice input.
2. Kids who always depend on para-professionals or parents to read to them or to handwrite what they dictate, are ideal candidates for computer use. A wide variety of talking productivity software allows them to finish assignments more independently without having to wait or ask for assistance.
3. Children with visual or print disabilities have a full array of hardware and software that can help them use the computer independently. Talking word processors, text and screen readers, and graphic menus are some of the most exciting new software tools in today's special need's programs.
4. If a child has control of even one muscle, he can use a switch; and a switch attached to a computer can run virtually any software through a process called scanning.
5. For kids with persistent spelling problems and/or slow entry speed, interactive spell checking (both auditory and visual) and word prediction software offer exciting possibilities for writing assistance.
6. Even tasks that have been hard to put on the computer are being computerized. Programs and keyboards that help kids do math problems, create writing webs, and finish work sheets on the computer are increasingly being used in schools.
7. Language based software programs are increasing, but more importantly, the quality of speech in computer programs has made a dramatic leap. Computer



- speech today is far from robotic, and some computers allow students to record, play back, and compare their pronunciations to pre-recorded pronunciations.
8. Children who need overteaching or reteaching and who benefit from multi-modality presentations benefit from the use of computer technology, especially the new curriculum enhancing CD programs that teach with infinite patience and consistent use of pictures, animations, sounds, words, and reinforcement.
  9. More and more companies are producing age appropriate software in functional, daily living areas or as vocational preparation. In addition, with the growing ease of including actual digitized photographs in computerized lessons, students can work with totally individualized images and experiences from their own schools, homes, and communities.
  10. On-line resources and CD references offer information at everyone's fingertips. Text and screen readers help kids who can't read or turn pages access information they need to complete work or just learn more about the world around them. In addition, the Internet is an ideal source for thousands of e-texts, entire books that can be viewed on and read by the computer.

### ***Resources***

Ideally, the best resource to assistive technology should be found in the local school. Just a few years ago, the number of professionals who even knew about assistive technology was far too small. Today, more and more school districts contain at least one teacher or therapist who is working with and/or who is studying in one or more of the different areas of assistive technology. Each state also has a federally sponsored Tech Act project, designed to provide access to assistive technologies to people (and their families) with disabilities.

### ***Promise and Perils***

Assistive technology is unbelievably exciting. There are highlight moments — when kids using computers complete a task for the first time all by themselves, when they finally make a choice on their own, when they say a word and see it printed on the screen, when they finish a writing assignment faster than other kids in the class for the first time, when they don't lose points for a misspelling — these are the victories that keep us all going. But the road is not a down hill run. People need to work to make assistive technology work for kids. They need to know what's available. They need to be trained. They need time to develop lessons and keep learning. They need the devices...and the services. They need to remember that assistive technology is just a tool, not a cure. There's a lot to do, but the results offer such promise. It's a promise we need to keep for our kids.