

What is Assistive Technology (AT)?

Take a quick look around your community and you will most likely notice someone using assistive technology. If you see an individual using enlarged print, a talking watch or a cane, you have identified someone using assistive technology. Assistive Technology (AT) is everywhere. Historically, we've all thought of assistive technology as something computerized and very expensive. However, assistive technology devices range from very inexpensive, low-tech items to more expensive, high technology devices.

Assistive technology is any tool allowing individuals with disabilities to use their own unique abilities to reach their goals. These tools are typically used by people who need to access education, employment, recreation, communication, and activities of daily living as independently as possible.



Assistive technology devices range from simple, *low technology* devices like this Time Timer (above) to sophisticated *high technology* devices like this electronic Augmentative Alternative Communication (AAC) system (to the right).



What are common assistive technology devices?

According to the AbleData database of assistive technology, there is close to 40,000 commercially available assistive technology devices on the market. So, how do we keep it all straight? For this discussion, we have divided assistive technology devices into a series of categories listed below:

- **Positioning** - It is often necessary to design positioning systems for a variety of settings within a school so that a student can participate in all activities. Bolsters, wedges and adapted seating are examples of items that are used for positioning. Proper positioning may increase motor movements and can help provide a student access to the curriculum.

- **Access** - Some students require special devices that provide access to curriculum, computers and/or other equipment. Eye blinks, head or neck movements, hand or foot movements may be used to operate switches which provide access to the computer. In addition to switches, alternative keyboards, adapted mice, trackballs, joysticks, touch screens or voice recognition software can be used for access. These methods may also apply to other systems including power mobility, voice output communication aids, and electronic aids for daily living (EADL's).



- **Environmental Control** - Independent use of equipment and control of objects in the classroom can be achieved for students with all types of disabilities through various environmental controls, including remote controls, switches and special adaptations of on/off switches to make them accessible (e.g. Velcro attachments, pointer sticks, etc...).

Electronic Aids for Daily Living (EADL's) that can turn lights on and off, open doors, and operate appliances are also examples.

- **Augmentative/Alternative Communication** - Students who are nonverbal or whose speech is unintelligible may benefit from using communication devices such as picture cards, communication boards, low-tech devices with a few recorded messages and/or voice output communication aids with digitized or synthesized speech.



- **Hearing** - Assistive listening devices help to alleviate hearing and auditory processing problems. They include hearing aids, personal FM units, sound field amplification systems and closed caption TV. Telecommunication devices for the deaf include teletypewriters and other devices for telephones in which speaking and/or hearing is not required for communication.

- **Vision** - Visual aids include increasing contrast, enlarging stimuli and using tactile and auditory models. Devices that assist with vision include screen readers, screen enlargers, magnifiers, large-print books, taped books, Braille, light boxes, thermoform graphics, speech synthesizers and scanners. Navigation and orientation systems give people with vision impairments information about their location and possible obstacles to safe travel. Students with hearing and/or vision impairment may be eligible for AT supports through the Colorado School for the Deaf and Blind (CSDB) equipment loan library.
- **Mobility** - Individuals whose physical impairments limit their mobility may need devices to help them move within the school building and participate in activities. Mobility devices include such items as walkers, manual or power wheelchairs and scooters.
- **Cognition/Learning** – Technology for cognition and learning can allow for increased participation in activities related to the curriculum. Software can reflect the general curriculum, and offer an alternative way of responding to learning activities. Software can provide tools for written expression, spelling, calculation, reading, basic reasoning and higher level thinking skills. The computer can also be used to access many resources via the Internet where access is available. Modifications for individual student access may be required.



There are also a variety of low-tech assistive technology options to support cognition and learning. Providing picture support in the classroom can help to increase comprehension of curricular content for some students. The use of a Time Timer or the Time Tracker Visual Timer can provide students with a visual cue when participating in a timed activity. A digital voice recorder or smartpen can be used to record content shared in the classroom. Other types of assistive technology can read electronic books out loud to a student such as, the VictorReader WAVE or the Classmate Reader. Depending on the goals of the student and the need to access the curriculum, there are multiple types of technology that can help support students in the classroom.

- **Social Interaction and Recreation** - Students with disabilities typically want to interact socially with their peers. Access to communication and assistive technology can help them to participate in recreational activities with friends. Some activities

include drawing software, computer games, painting with head or mouth sticks, interactive books, sports and adapted puzzles or games.

- **Self Care** - In order to benefit from education, some students require assistance with self-care activities like feeding, dressing, and toileting. Assistive devices, which may facilitate self-care, include such things as adapted utensils, specially designed toilet seats, and aids for tooth brushing, washing, dressing and grooming.