



Assistive Technology Computer Access

Computers have become part of our daily lives and we seldom think of what it takes to access a computer...until we can't or we have a student who can't. When we think about computers, we realize it really isn't such an easy process. The keyboards are not arranged alphabetically, the mouse is different from simply touching the screen and sometimes the colors on the computer make it hard for those with visual impairments to see. So breaking it down:

We use our vision to:

- Locate and read keys on a keyboard
- Observe the reactions on the computer
- Locate disk drives and other peripherals such as printers

We use our motor skills to:

- Touch individual keys
- Point to and click areas of screen using the mouse
- Turn on/off switches
- Insert or remove disks
- Press multiple keys concurrently (shift + b)

We use our thinking and reasoning skills (cognitive) to:

- Read keyboard symbols and words
- Read screen prompts or instructions
- Understand the computer reactions to the input
- Remember series of sequential instructions (e.g. to load a program into memory)
- Remembering where you are when multiple documents or windows are open.

In education, computers provide access to activities and opportunities people without disabilities take for granted. In education they can provide access to the general education curriculum and key educational experiences such as reading, writing and assessment activities that take place every day in the classroom.. However, it must be noted that after 20 years of exploring new assistive technology products and teaching others how to use it, one thing has become very clear: Technology alone is not enough. **A computer alone will not increase a student's success in the classroom.** Buying software or the latest and greatest computer/laptop will not make a student successful unless that software and computer is integrated into the daily classroom life and expectations. For that to happen, training must occur.

So, given all that, what are some assistive technologies that can help students with disabilities access the computer?

For those who need Monitor adaptations:

Screen readers for those who have difficulty seeing the computer

Screen readers will read to the person the items on the computer display. Some screen readers will convert keystrokes to auditory outputs so the person typing can identify mistyped words immediately.

Enhancing Existing Images through **Screen magnifiers**

Screen magnifiers make the image on the monitor larger or brighter or duller so those who have vision difficulties can read the items on the monitor easier.

For those who need **Keyboard alternatives:**

Keyboards can be modified

Larger letter keyboards

High contrast color keyboards

Braille keyboards

Blank keyboards

Selecting and Pointing Devices

Handheld

Mouthsticks

Chinsticks

Headsticks

Keyguards

Acrylic

Metal

Moisture guards

Transparent for long term use

Transparent and disposable

Printed with key labels

For those who need Mouse Modifications:

Trackballs

Mini-trackballs

Standard trackballs

Large trackballs

Adapted trackballs

Joysticks

Software that converts game joystick input to mouse control

Adapted joysticks

Touch screens

Integrated touch screens

Add on touch screens

Head pointing systems

Headset and reflective dot

Eye gaze Systems

Cameras on monitor and eyeglasses or goggles

There are also printer and storage modifications that can be made if needed. In our schools, this is usually not so much of a problem as there are generally those around who can retrieve paper from the printer or help to plug in external storage devices or show those who need assistance how to store directly onto the computer. However, if these are also needs, please contact the AT office so we may offer some other possible solutions to these issues.

Many of the websites I have found relating to computer access are stores that want to sell items. Our district contains several of these items. If you have any students that are not accessing the computer as well as they should because of a disability, please call the AT office at 480.575.2296. We will come and work with you and then help to solve the problem with either a solution we currently have or by coming up with a viable alternative.

