

## **Assistive Technology**

### **Definition**

Assistive or Adaptive Technology commonly refers to "...products, devices or equipment, whether acquired commercially, modified or customized, that are used to maintain, increase or improve the functional capabilities of individuals with disabilities...", definition proposed in the Assistive Technology Act of 1998.

Assistive Technology is used for:

- Assistance with daily living activities
- Communication
- Recreation
- Education
- Employment

Diversity in learning styles is common for all learners and is not just for students with disabilities. Assistive technology is used to enhance functional abilities and help students use their strengths to succeed in their educational pursuits.

### **Categories of Assistive Technology as it relates to education:**

- Text-to-speech software
- Magnification software and hardware
- Speech Recognition software
- Note taking devices
- Portable devices
- Alternate access to the computer

### **Text-to-Speech software (TTS)**

- Reads e-text using various voices
- Adjust rate, volume, pitch
- Highlight words, sentences, phrases as it is read back
- Spells text (word/sentence/paragraph) out loud
- Reads within the Internet
- Ability to scan and convert to readable text
- Audible dictionary
- Word prediction
- Study tools

As students struggle with reading, comprehending, word retrieval and visual spatial issues, text to speech has with the multimodal input that provides them the ability see, read and comprehend text with less difficulty.

Some commonly used text-to-speech programs are:

Read & Write Gold: [www.texthelp.com](http://www.texthelp.com)

Kurzweil 3000: [www.kurzweiledu.com](http://www.kurzweiledu.com)

WordQ: [www.goqsoftware.com](http://www.goqsoftware.com)

Premier: [www.readingmadeez.com](http://www.readingmadeez.com)

Solo Literacy Suite: [www.donjohnston.com](http://www.donjohnston.com)

### **Screen Readers**

Screen readers are more extensive and provide more audio feedback. They are able to read and help navigation of the various Windows screens and allows a visually impaired to manipulate and work with many applications.

- Provides speech feedback for navigation in Windows
- Speaks menus, dialog boxes, screen pop-ups
- Read all text in various applications
  - Office products
  - Internet and Email
- Adjust rate, volume, pitch
- Spells words out loud phonetically
- Provides feedback on cursor location

Some commonly used Screen Readers are:

JAWS – [www.freedomscientific.com](http://www.freedomscientific.com)

WindowEyes – [www.gwmicro.com](http://www.gwmicro.com)

SuperNova – [www.yourdolphin.com](http://www.yourdolphin.com)

NVDA – [www.nvaccess.org](http://www.nvaccess.org) (free)

VoiceOver – included in Apple products

Narrator – built-in screen reader in Windows operating systems

## Magnification Software:

Magnification software run on a computer and provides a magnified view of all applications running on the computer. Most commonly used magnification software also provide the option for speech output.

Some commonly used magnification software are:

ZoomText Fusion and ZoomText screen reader/magnifier – [www.aisquared.com](http://www.aisquared.com)

MAGic – [www.freedomscientific.com](http://www.freedomscientific.com)

SuperNova – [www.yourdolphins.com](http://www.yourdolphins.com)

Zoom – magnification for Apple products

Magnifier – included in the Windows Operating system software

## Magnification Hardware – CCTV:

CCTVs are print magnifiers. They can be categorized as standalone and portable devices.

CCTVs may operate independently of a computer but some models allow for access to the magnified text through the computer monitor. There are many models and makes of CCTVs available. The list below are just some examples of the products. Use and purchase of any assistive technology should be an informed decision. An evaluation or a product demonstration will provide a better understanding of what best fits the need.

### Standalone CCTVs

#### Enhanced Vision:

- Acrobat
- DaVinci
- Merlin



#### Freedom Scientific:

- ONYX
- Topaz

#### Magnisight

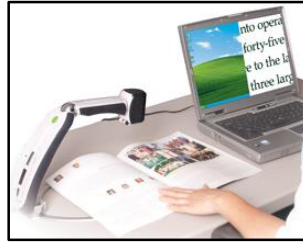
- Explorer HD
- Explorer Classic



### Portable and Handheld CCTVs

### Enhanced Vision

- Transformer
- Acrobat Mini HD
- Amigo
- Pebble



### Freedom Scientific

- Ruby
- Sapphire

### Magnisight

- Looky +



## Speech Recognition Software

Speech recognition is a text input method used frequently when experiencing difficulty with producing written documents. This method of accessing the computer can range from extensive use of the computer, as in hands free operation, to simple use for dictating words that may be difficult to spell just within a word processing software.

Some of the features of speech recognition software are:

- Converts speech to text
- Allows hands-free options to navigate in the Windows/Mac environment
- Tool for individuals who spell words phonetically
- Works within Microsoft Office products
- Able to navigate the Internet and email

## Products

- Dragon Naturally Speaking – [www.nuance.com](http://www.nuance.com)
- Component of Windows Operating System – Ease of Access
- Component of Macintosh Operating System

## Note Taking Devices

Note taking is a process that involves the ability to listen to instruction and write down information that is important and relevant to the subject. This process also requires the learner's ability to identify what is important from other information presented in the classroom. Often students tend to interpret note taking as a process of transcribing a lecture verbatim. Some students with certain disabilities may also have difficulty staying on task and not be distracted. Physical and cognitive disabilities may often create barriers for taking notes in class.

If note taking is identified as a potential barrier to learning, a disability service provider may often provide this as an accommodation. Some devices mentioned here may record lectures and will need approval of the disability service provider for use in the classroom.

## Products

- Livescribe Pen – [www.livescribe.com](http://www.livescribe.com)
- iPhone/iPad/iPod with apps:
  - Evernote
  - Microsoft OneNote
  - Notability
  - Note Shelf
- Braille/Qwerty Note taking devices
  - BrailleNote – [www.humanware.com](http://www.humanware.com)
  - PacMate – [www.freedomscientific.com](http://www.freedomscientific.com)
  - BrailleSense – [www.hims-inc.com](http://www.hims-inc.com)



**Notability App**



**BrailleNote Apex**

