Make Text Bigger

By Andrew Leibs

When a person with low vision opens a large-print calendar, puzzle book, or magnified website on a computer monitor, onlookers with 20/20 vision are often curious, if not covetous.

For details that matter, e.g., diagrams in a medical text, contacts on a smart phone screen, details in photographs, or instructions with minuscule print you need to set your new watch, bigger is better. When we suddenly can see all, we read thoroughly, remain attentive and engaged, and can derive more satisfaction from what we read, view, or fill out by reducing stress, eyestrain, and errors.

There are many ways students with visual impairments or learning disabilities can enlarge content, whether it's online, in a textbook, in a journal in the library stacks, or written on a whiteboard across a crowded classroom.

Here are the six types of magnification solutions with a few words on how they work and how to access them.

1. Operating Systems

You may have high-tech magnification and not even know it. Most operating systems have built-in accessibility features, including ways to enlarge text and images on your computer with just a few keystrokes. Zoom, for example, is available on all Apple devices (both OS X and iOS) and provides instant magnification of what's displayed onscreen. On Mac

machines, you type Option - Command - "+" to enlarge content up to 20x. On an iOS device, double tap the screen to make images up to 5 times larger.

PC users can enlarge a portion of the screen using Magnifier, which opens a separate window that acts like a magnifying glass. To do this, click "Start" > "All Programs" > "Accessories" > "Accessibility" > "Magnifier." Type a number from 1 - 9 or select from the drop down menu in the Settings dialog box to adjust magnification.

Google Chrome users can download ChromeVis, a free extension that enables you to select and magnify text that it encloses within a lens at the top of the page or floating atop the section you're currently reading. The lenses keep the original page layout intact and enable users to move text around without a mouse.

Built-in OS magnification has made software such as Ai Squared's ZoomText Mac less essential for low-vision students. Some of the program's features, including font smoothing (maintaining image clarity at all magnification levels), tracking, and visual enhancements for the cursor and mouse pointer can make the computer and web easier to navigate.

2. Desktop Video Magnifiers

Desktop video magnifiers, once known as closed-circuit TVs (CCTVs) remain a popular solution for low-vision students. These devices use a camera to magnify captured images on a monitor. Users place material under the camera and twist a knob to zoom in and out. Other controls are for adjusting contrast or changing text and background color combinations for greater clarity and reading comfort. Newer models include reading functions such as OCR scanning, text-to-speech, and the ability to save text and image files.

A recent example is the Optelec Clearview+ Speech. This model has a high-definition camera, 24-inch touchscreen monitor, continuous magnification up to 95x, and a "point and read" feature, i.e., to hear any part of a document read aloud, touch its section onscreen.

But as CCTV prices still start around $2,000 (the ClearView+ Speech is $3,895), desktop models are losing ground to portables. A low-cost alternative is the Eazy Reader Deluxe ($399), a juice-glass-sized digital

camera that connects to your TV through a cable or USB adapter and displays enlarged images onscreen. The device is handy for spot reading (e.g., TV or phonebook listings), but not sustained reading.

3. Portable Video Magnifiers

CCTVs used to combine camera and monitor in one unit. But as computers become more indispensable, solutions are evolving that leverage a machine's processor and monitor, such as an HD camera connecting through a USB port with software providing OCR and text-to-speech.

One camera-only system is the Flick, which connects to a laptop or tablet PC or Mac and enables users to adjust magnification, focus, and camera position using the mouse, keyboard, or a touchscreen. Magnified images appear on the monitor. The Flicks's motorized lens system eliminates manual adjustments usually required to switch from close-up to distance viewing, making it easier to take in all that's going on in class.

Distance viewing is the portable magnifier's "killer app." Most CCTV cameras point straight down on a tray where users place materials to enlarge. Portables such as the Flick and Enhanced Vision's Transformer (which requires a PC laptop) let you point the camera where the action is, e.g., the front of a classroom, a concert or theater stage, or signs in an airport.

There are also all-in-one portables, such as VisioBook from BAUM Retec AG. This eight-pound unit with a laptop-sized footprint can be propped up to provide magnification for reading as well as distance and personal viewing, i.e., a super-magnified mirror for putting on makeup. Like desktop magnifiers, portables are pricey: VisioBook is $3,000.

4. Handheld Video Magnifiers

Portable or handheld video magnifiers are convenient and relatively cost effective solutions that fit easily in one's pocket. They look like large, square magnifying glasses, although like all other CCTVs, employ a camera and light. They provide less magnification than desktop models, but can be used in far more places, such as the library, stores, restaurants, and during one's commute.

Most handhelds have a "freeze frame" for temporary image capture – an extremely useful feature for bringing a book reference from the dim stacks for transcription in better light. A second click clears the screen.

The Optelec Compact 5 HD ($895) has a five-inch, high-definition screen and a lighting system that maintains an even image across different reading surfaces, including newsprint, glossy magazines, price tags, product packaging, and text on monitors and LCD displays. It magnifies images from 1.5 to 18 times original size, making it one of the most powerful handheld CCTVs. The device is also one of the lightest, weighing 10.4 ounces and measuring 5.4 by 3.5 by 0.9 inches.

Less expensive options include the Pebble ($595) and Pebble Mini ($295) from Enhanced Vision. Both provide magnification up to 10x; the Mini has a smaller screen.

5. Magnification Apps

While portable and handheld magnifiers supplant desktop CCTVs, they face similar encroachment from mobile apps. Smart phones and tablets with built-in lights, video cameras, and high-resolution screens are a few lines of code away from providing a convenient magnification option for just a few dollars.

For example, VisionAssist, an iOS app from Slinkyware, costs just $5.99. While its optical quality and resolution are inferior to handheld CCTVs, its price tag and convenient presence on your iPhone make it a compelling option. VisionAssist on an iPad can make newspapers and road maps easier to read. And you can also use Apple TV to wirelessly project images onto a big screen TV.

EyeSight ($29.99) from SightTech was developed specifically to leverage the iPad's high-resolution Retina display. Simple gestures enable users to magnify text or images up to 12 times and toggle through six color and contrast settings to optimize their reading environment. Set on a stand, an iPad running EyeSight can replace desktop magnifiers costing thousands. An iOS device connected to a High Definition Media Interface (HDMI) TV can expand magnification to 100x.

6. Old-School Magnifiers

Many students with low-vision supplement reading glasses with a traditional magnifying glass – the sort you see Sherlock Holmes peering through. It's tech at its lowest, but still convenient and effective. There are many types of magnifying glasses including bar (placed on a line of text), domed, and illuminated. There are also loupes – a little scope your dentist might wear over glasses. For distance viewing, there are tiny telescopes called monoculars that are extremely useful in the classroom, on the sidewalk, or at the airport. Two great sources offering a wide selection of different types of magnifiers – both high and low tech – are MaxiAids and Independent Living Aids.

Resources

Zoom: Apple's Built-In Screen Magnifier
http://assistivetechnology.about.com/od/ATCAT10/p/Zoom-Apples-Built-In-Screen-Magnifier.htm

Magnify Website Text with Free Chrome Extension
http://assistivetechnology.about.com/od/BVISC2/qt/Free-Chrome-Plugins-Make-Web-Content-Accessible-To-Print-Disabled-Readers.htm

ZoomText Mac Screen Magnification Software
http://assistivetechnology.about.com/od/BVISC2/a/Zoomtext-For-Mac-Screen-Magnification-Software.htm

Find Desktop Video Magnifiers
http://assistivetechnology.about.com/od/ClosedCircuitTVs/tp/Find-Desktop-Video-Magnifiers.htm

Optelec ClearView+ Speech CCTV
http://assistivetechnology.about.com/od/ClosedCircuitTVs/a/Optelec-Clearview-Speech-Cctv.htm

Eazy Reader Displays Magnified Text on Your TV
http://assistivetechnology.about.com/od/PortableVideoMagnifiers/fr/Eazy-Reader-Displays-Magnified-Text-On-Your-Tv.htm

Flick Turns Tablet into Video Magnifier for Reading and Distance Viewing
http://assistivetechnology.about.com/od/PortableVideoMagnifiers/p/Flick-Turns-Tablet-Into-Video-Magnifier-For-Reading-and-Distance-Viewing.htm

Transformer Portable Electronic Video Magnifier for the Visually Impaired
http://assistivetechnology.about.com/od/PortableVideoMagnifiers/p/Transformer-Portable-Electronic-Video-Magnifier-For-The-Visually-Impaired.htm

Access HD Video Magnification Anywhere with VisioBook
http://assistivetechnology.about.com/od/PortableVideoMagnifiers/p/Visiobook-Portable-Video-Magnifier.htm

Optelec Compact 5 HD Electronic Magnifier
http://assistivetechnology.about.com/od/PortableVideoMagnifiers/p/Optelec-Compact-5-Hd-Magnifier.htm

Pebble Portable Electronic Magnifier
http://assistivetechnology.about.com/od/PortableVideoMagnifiers/fr/Pebble-Portable-Electronic-Magnifier.htm

VisionAssist Turns iPhone into Video Magnifier
http://assistivetechnology.about.com/od/AccessibilityintheiPodtouch/fr/Visionassist-Ios-App-Provides-5x-Text-Magnification.htm

Turn iPad 3 into CCTV with EyeSight App
http://assistivetechnology.about.com/od/PortableVideoMagnifiers/fr/Turn-Ipad-3-Into-Cctv-With-Eyesight-App.htm

Independent Living Aids
http://www.independentliving.com/?gclid=CI2b66S24rcCFcuh4AodwTgAUA

MaxiAids
http://www.maxiaids.com/store/default.asp

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