



Teaching students with vision impairment in a digital world

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Goals

- Learn what *vision impairment* means
- Challenges for students with vision impairment in accessing visual and digital information
- How common and specialist technology can help
- How you can help students with vision impairment to use technology
- Where you can find more information
- Some time for questions at the end





Vision impairment in children

- Partially sighted (low vision) = $\leq 6/18$ &/or $\leq 20^\circ$
- Blindness: $\leq 6/60$ &/or $\leq 10^\circ$
- Total blindness = cannot see any light
- Very rare ($\sim 0.005\%$ of children); total blindness is even rarer
- Usually happens with other disabilities/ conditions
- Can happen before or after birth
- May stay the same, get better, or get worse as they get older
- Vision conditions, like albinism, can present very differently (mild \rightarrow severe)





Seeing the world through technology

What are the challenges for students with vision impairment in:

Accessing information?

Accessing learning?

Participating in the world?

How can technology help them to access:

Information?

Learning?

Participation?





Thinking about the student first

- Tasks
- Skills
- Preferences and needs
- Social and emotional impact of vision impairment and technology use:
 - Is the technology ‘cool’?
 - Does it make the student even more different?
 - Is the student happy to be different?





Accessing and writing print and e-text

What is print? What is e-text?

Considerations:

- Learning media (braille, audio, large print, a combination)
- Short-term vs. long-term needs
- Learning to read vs. reading to learn
- What kind of text is it?
- Can the student keep up with classmates?



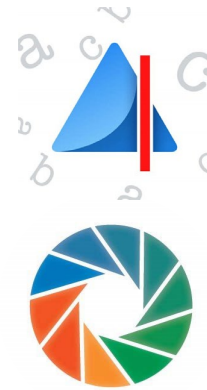


Accessing print and e-text



Convert to e-text and access (braille, audio, large print):

- PEARL scanning camera with Optical Character Recognition (OCR) software
- Some electronic magnifiers with OCR
- Prizmo Go app (OCR)
- KNFB Reader app (OCR)



Access:

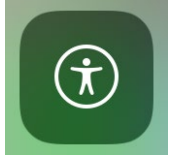
- Electronic braille device with visual display
- Apps (iBooks, VoiceDream, Dolphin Easy Reader)
- DAISY players and software
- Electronic magnifiers





Using computers

Macs and Window PCs have in-built accessibility:



Ease of Access

Narrator, magnifier, high contrast



Other software to magnify and/or change text into speech, and to use a computer without a mouse includes:



Glassbrick screen magnification software



NVDA text-to-speech software



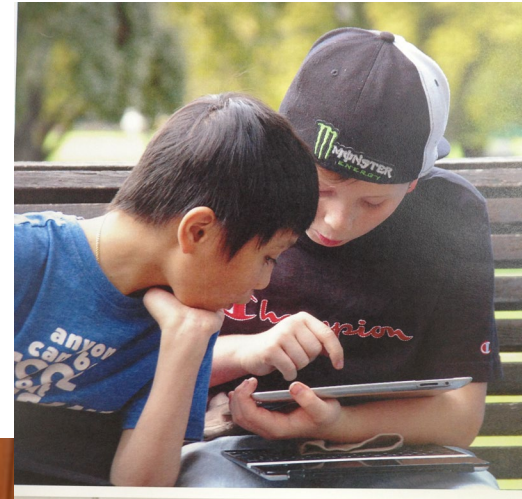
Connect to technology like braille displays or cameras:





Using tablets

- Common, 'cool' technology that can be very accessible (iPads are best)
- Access some of the same apps and social networks as classmates (Google Classroom, WhatsApp)
- Specific apps for:
 - Accessing print and e-text
 - Location and navigation
 - Accessible games
 - Vision impairment services
- Connect to technology like braille displays and cameras
- Use with a Bluetooth keyboard





Supporting students with vision impairment to use technology

- Learn the basics
- Model problem-solving
- Make it normal, make it fun
- Involve the whole class: accessibility and inclusion is everyone's business
- Sit. On. Your. Hands. (Use your words!)
- Let the student be the star

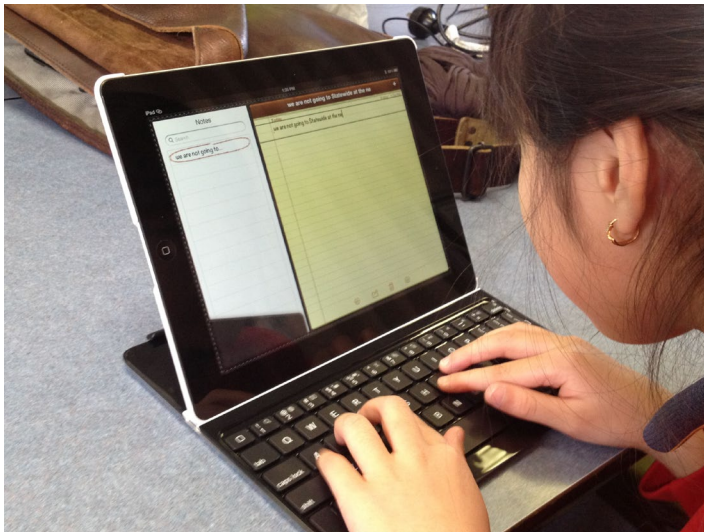




Touch typing is very important

- Essential to be able to learn and communicate using a computer, tablet, or smartphone
- Critical job skill
- Equally important for students with low vision and students who are blind
- Free and paid software to teach touch typing for students with vision impairment





Digital competence: A human right for students with disability



Resources and information for further learning



Royal Institute for Deaf and Blind Children (RIDBC)

Continuing Professional Education:

- Webinar: Assistive Tech and many more

Statewide Vision Resource Centre (SVRC):

- Cheat sheets, tutorials and quick guides
- SVRCAus YouTube Channel
- Professional learning (free and paid, online)



Texas School for Blind and Visually Impaired (TSBVI)

Online Learning:

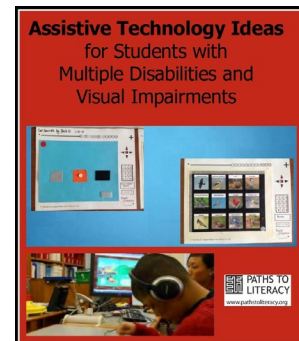
- Videos & webinars (e.g., Assistive Technology Assessment)

Perkins School: Support for Educators

- Paths to Literacy series

Some companies/vision impaired technology user groups:

- Humanware
- HIMS
- AppleVis.com



Empowering blind and low-vision users of Apple products and related applications



Questions? Answers?





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V i e l e n D a n k !



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