

## Mentoring Program Checklist Series

### Understanding Braille and Screen Readers

As outlined in our Understanding Vision Impairment Information, we shared that people are affected in different ways by their vision impairment and use different methods when undertaking their workplace and day-to-day tasks. Alongside magnifying software and large monitors many people are highly skilled in Braille and Screen Reading Technologies.

#### Contents

Contents .....	1
Introduction.....	2
Braille Technologies .....	2
Low Tech.....	2
Writing frames and stylus.....	2
Mechanical notetaker .....	2
Mechanical Brailers .....	2
High Tech .....	3
Embossers or braille printers .....	3
Screen Reader Software .....	3
JAWS (Job Access With Speech) and ZoomText .....	3
NVDA (Non-Visual Desktop Access).....	3
Other technology available:.....	4
Challenges with Screen Reader Technology.....	4
Document Access .....	4
Hardware and Software Capacity.....	4

Funding for the Canberra Blind Society Mentoring Program is provided by Department of Social Services as part of the Information, Linkages and Capacity Building (ILC) Program.

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## **Introduction**

Screen reading software and Braille assists people who are totally blind or where there is very little functional vision. Work can be performed with JAWS (Job Access With Speech) and NVDA (Non Visual Desktop Access) screen reading software. JAWS needs to be purchased. NVDA provides free access to their screen reading software. There are also a range of low tech and high-tech Braille based technologies. Following are more details about Braille technologies and screen reading software.

## **Braille Technologies**

There are low- and high-tech Braille technologies and there are many experienced users of these devices. The following provides a summary of details and how the different technologies are used.

### **Low Tech**

#### **Writing frames and stylus**

The simplest way to make braille is to use a pointed stylus to push dots into paper. With standard slates or writing frames, the dots are created on the reverse of the paper, meaning the braille has to be written back to front. An upward writing frame makes the dots on the front of the piece of paper you are embossing. This lets you produce braille as you would read the code, from left to right, making it easier to take quick notes.

#### **Mechanical notetaker**

Notetakers are a lightweight and portable device, similar to a typewriter. It has six keys (one for each dot in the braille cell), which punch the braille paper. Spaces are created by pinching the two halves of the machine together. The machine does not require special braille paper. It can be used to create quick notes on the move that do not need to be kept for long periods of time.

#### **Mechanical Brailers**

These are sturdy desktop machines, much like typewriters but with just six keys to produce the characters (one for each dot in the braille cell). There is also a space bar and backspace key. These machines can be used with a range of materials including special braille paper, Brailon and labelling materials. They are ideal for producing quick throwaway documents as well as material that needs to be stored for a long time and referred back to.

## High Tech

### Embossers or braille printers

Embossers print braille output from a computer by punching dots onto paper. They connect to the computer in the same ways as text printers and can also be connected to notetakers and other devices.

### Screen Reader Software

#### JAWS (Job Access With Speech) and ZoomText

JAWS (Job Access With Speech) and its visual equivalent ZoomText, are the most commonly used screen reader program in the workplace. JAWS is the screen reader and ZoomText magnifies text with a basic speech component.

JAWS has 2 versions JAWS Basic Home and JAWS Professional. The Professional version is the one most commonly used in the workplace. However, some people may use JAWS Basic Home especially if they need to provide their own software as JAWS professional is much more expensive. Zoom Text also Basic Home and Professional versions.

JAWS makes information on a computer accessible by using a high-quality synthetic voice to read out what is on the screen so a blind or vision impaired person can hear the information. ZoomText Magnifier is an advanced screen magnification program that enlarges and enhances everything on the computer screen, making your computer easier to see and use.

There are several variables which will affect the accessibility of information for users of JAWS and zoom text. This is especially so for JAWS. These are:

- The skills of the user and the training opportunities they are given to develop these skills.
- The versions of JAWS and ZoomText they are using.
- JAWS and Zoom Text require regular updates and a user to purchase a new software maintenance agreement every 2 years. This is a considerable expense if a user has to pay for JAWS themselves.
- The way a document or a program is initiated and constructed will also affect its accessibility for a JAWS user.

#### NVDA (Non-Visual Desktop Access)

There is a public domain program called NVDA which is a speech-based screen reading program like JAWS. NVDA provides good basic access to information on a computer but may not provide sufficient access for your workplace.

## **Other technology available:**

### **Fusion**

JAWS comes with its own magnification program called Fusion so some people who are gradually losing vision may be using Fusion but also may eventually start learning JAWS as their vision decreases.

### **Narrator**

Narrator is built into all Windows PCs and has improved over the years but not as practical as JAWS and NVDA. It is however useful to have if there is limited access or something happens to JAWS.

### **Smartphones**

There are accessibility features of Apple iPhones which millions of people are carrying around every day. Features include voiceover, ability to change the font size and contrast features. There is also a setting where Braille can be written on the screen as an alternative to text. Android phones have a built-in speech facility called Talkback.

## **Challenges with Screen Reader Technology**

Screen Reader technology is continually improving and there is growing access to the different technologies available. Both PC and Apple platforms plus software like Microsoft are improving their accessibility functions and provide screen reader features too. While not as comprehensive as JAWS and NVDA they do provide accessibility assistance. Continuous improvement is happening however there are still challenges which include:

### **Document Access**

JAWS is a text-based program and can make text accessible. However, JAWS, especially its earlier versions, may not be able to read a document which is a graphic such as some PDF documents or other documents with lots of diagrams, images and photos. When including images or diagrams in documents there needs to be an awareness to find different ways of providing accessibility including text description or rethinking is a very detailed diagram helpful to all stakeholders. Document access issues for JAWS users are also a challenge for NVDA users. JAWS may also struggle with documents with high levels of encryption.

### **Hardware and Software Capacity**

JAWS and Zoom Text are large software programs which take up large volumes of space on a computer's RAM capacity. There are circumstances, due to need to complete tasks using several work-related programs, that an employee with vision impairment may need to regularly reboot their computer to get their work completed. Therefore, an organization will need to ensure that the computers (desktop, laptop etc) issued to staff who are blind or vision impaired have sufficient capacity to run these programs.

## Useful Links:

- JAWS (Job Access With Speech) information - <https://www.freedomscientific.com/products/software/jaws/>
- Quantum Australia JAWS supplier - <https://www.quantumrlv.com.au/collections/blindness-software-solutions/products/jaws-screen-reading-software-professional>
- ZoomText - <https://www.freedomscientific.com/products/software/zoomtext/>
- Quantum Australia ZoomText supplier - <https://www.quantumrlv.com.au/products/zoomtext-magnifier>
- NVDA (Non Visual Desktop Access) - <https://www.nvaccess.org/download/>
- Vision Australia - <https://www.visionaustralia.org/technology-products/resources/beginner-guides/introduction-to-screen-readers>
- Royal National Institute of Blind People (RNIB) - <https://www.rnib.org.uk/braille-and-moon-%E2%80%93-tactile-codes-writing-and-producing-braille/equipment-writing-braille>

