

UNIVERSITY OF THE
WITWATERSRAND,
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Disability Rights Unit



**ASSISTIVE TECHNOLOGY
FOR ONLINE LEARNING**



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Assistive Technology

The Wits Disability Rights Unit utilizes assistive technology to help students with disabilities learn more effectively, and ranges in sophistication from “low” technologies such as a graphic organizer worksheet, to “high” technologies including cutting-edge hardware, software and smartphone apps. In this guide you will find some recommendations for computer software or mobile apps compatible with Windows PC, Mac, iOS devices, and Android devices. These recommendations are aimed primarily towards technology that is available for free.

1. Built-In Accessibility



1.1. Microsoft Windows PC

Personalize your Windows computer with any of the built-in accessibility features to support persons with visual, hearing, and physical impairments.

Features available are: Screen Reader/Text-to-Speech (Narrator); Magnification (Magnifier); Keys Commands (Mouse Keys); Speech-to-Text and Voice Control (Speech Recognition); Visual Notification to replace sounds; Keyboard on Screen; Toggle Keys; Adjustable Mouse Settings; High Contrast Schemes; and the ability to personalize the appearance of the computer environment including text.

For more information, visit the following links:

<http://www.microsoft.com/enable/products/chartwindows.aspx>

<http://www.microsoft.com/enable/default.aspx>



1.2. Apple Macintosh PC

Personalize your Macintosh computer with any of the built-in accessibility features to support persons with visual, hearing, and physical impairments.

Features available are: Screen Reader/Text-to-Speech (VoiceOver); Magnification (Zoom); High Contrast; Sticky Keys; Speech-to-Text and Speech Recognition (Voice Control), Word Completion (Word Prediction); and many more.

For more information, please visit the following link:

<http://www.apple.com/accessibility/osx/>

2. Screen Readers



2.1. Non Visual Desktop Access (NVDA)

NVDA is a screen reader that allows blind and visually impaired people to access their computers by providing feedback via synthetic speech and Braille. NVDA supports web browsers, email clients, internet chat programs and office suites. The built-in speech synthesizer supports over 20 languages. NVDA has no additional hardware requirements beyond those of the operating system and requires less than 50 Mb of disk space. Textual formatting can be announced such as font name and size, style and spelling errors including automatic announcement of text under the cursor and optional audible indication of the cursor position.

Platform: Windows

Price: Free

For more information, please visit the following link:

<https://www.nvaccess.org/>



2.2. Windows Narrator

Narrator is a built-in screen reader available on Microsoft Windows which offers text-to-speech for visually impaired people. Use Narrator to read and write an email, browse the internet, work with documents, or complete common tasks by hearing what you interact with on the PC, like text and buttons.

Platform: Windows

Price: Free

For more information, please visit the following link:

<https://support.microsoft.com/en-us/help/22798/windows-10-narrator-get-started>



2.3. Apple VoiceOver

For Macs, VoiceOver gives you auditory descriptions of each onscreen element and provides helpful hints along the way — whether you prefer using gestures, a keyboard, or a braille display. And it supports more than 35 languages, including multiple voice options.

For iPhones and iPads, VoiceOver allows you to hear a description of everything happening on your screen, from battery level to who's calling to which app your finger is on. You can also adjust the speaking rate and pitch to suit you.

Platform: Apple macOS and iOS devices

Price: Free

For more information, please visit the following links:

Macs: <https://www.apple.com/accessibility/mac/vision/>

iPhone/iPad: <https://www.apple.com/accessibility/iphone/vision/>



2.4. Google Talkback

TalkBack is the screen reader included on Android devices which helps blind and visually impaired people interact with their devices more easily. This screen reader software adds spoken, audible and vibration feedback to your device and provides spoken feedback as you navigate around the screen, by describing your actions and informing you of any notifications.

Platform: Android

Price: Free

For more information, please visit the following link:

https://support.google.com/accessibility/android/topic/3529932?hl=en&ref_topic=9078845

3. Screen Magnifiers



3.1. Windows Magnifier

Magnifier is a feature built into Microsoft Windows which makes part or all of your screen bigger so that you can see words and images better. Choose from three different views: "Full-Screen" zooms the entire screen, "Lens" creates a virtual lens effect that follows the cursor around the screen, and "Docked" puts the magnified version of the display at the top of the screen.

Platform: Windows

Price: Free

For more information, please visit the following link:

<https://support.microsoft.com/en-us/help/11542/windows-use-magnifier-to-make-things-easier-to-see>



3.2. Virtual Magnifying Glass

Virtual Magnifying Glass is a free screen magnifier designed for anyone who needs to magnify a part of the screen. It is simple, customizable and easy to use.

Platform: Windows, macOS, Linux

Price: Free

For more information, please visit the following link:

<http://magnifier.sourceforge.net/>

4. Screen Enhancers

4.1. Screen Tinter

ScreenTinter is a free utility which allows the screen foreground and background colours to be changed at the click of a button.

Platform: Windows

Price: Free

For more information, please visit the following link:

<http://www.bltt.org/software/screentinterlite/>

4.2. VuBar

VuBar provides an on-screen slotted ruler to highlight and limit the field of view to an area as small as a single line. Useful for individuals who find it difficult to read large amounts of text by separating it into one or more lines at a time.

Platform: Windows

Price: Free

For more information, please visit the following link:

<http://libguides.ioe.ac.uk/c.php?g=482313&p=3299119>

5. Text-to-Speech / Literacy / Writing Support Software



5.1. Read&Write

Read&Write integrates reading, writing, studying, and research support tools with common applications. Featuring an easy-to-use toolbar that makes documents, files and web pages more accessible. It offers a variety of features, like reading out loud, built-in dictionaries, summary highlighters, and turning text to audio.

Platform: Windows, macOS, iOS, Android, Google Chrome

Price: Free for all Wits students and staff. Download and install the trial version for your device and then log in with a Microsoft account using your Wits credentials, Username: Wits email address and Password: Wits ICT password.

For more information, please visit the following link:

<https://www.texthelp.com/products/read-and-write-education/>



5.2. Voice Dream Reader

Read just about anything that contains text using Voice Dream Reader. Designed for people with dyslexia, visually impaired, and other learning styles. With advanced text-to-speech and customizable reading layout, it can be tailored to suit every reading style from completely auditory to completely visual, plus a synchronized combination of both.

Platform: iOS, Android

Price: Purchase required

For more information, please visit the following link:

<https://www.voicedream.com/reader/>



5.3. MindMeister

MindMeister is a digital graphic organizer which lets you organize ideas with visual mind maps, diagrams and pictures. It also helps with taking notes, outlining the main ideas in a book, or getting started writing an essay.

Platform: Online

Price: Free version lets you work on three projects at a time.

For more information, please visit the following link:

<https://www.mindmeister.com/>

5.4. MyStudyBar

MyStudyBar is designed to support the complete study cycle from planning and structuring thoughts and ideas to support with reading and writing. MyStudyBar can help learners to: organise and plan their thoughts and ideas; use colour overlays to aid concentration and overcome visual stress; listen to digital content read aloud using text-to-speech; and improve typing skills.

Platform: Windows

Price: Free

For more information, please visit the following link:

<https://www.callscotland.org.uk/mystudybar/>



5.5. Grammarly

Grammarly is a free app and web browser extension that automatically checks your grammar, spelling, punctuation, word choice, and style on many applications including Facebook and Microsoft Office.

Platform: Windows, macOS, iOS, Android

Price: Free with limited features, premium service is available for a monthly or annual payment.

For more information, please visit the following link:

<http://www.grammarly.com/>

6. Speech-to-Text / Dictation



6.1. Windows Speech Recognition

Speech Recognition is a feature built into Windows PCs that converts speech to text and allows you to control your computer with your voice. Dictation is available in supported Microsoft apps (e.g. Notepad and Word) and improves the more you use it.

Platform: Windows

Price: Free

For more information, please visit the following links:

Windows Speech Recognition: <https://support.microsoft.com/en-us/help/17208>

Dictating in Word: <https://support.office.com/en-us/article/dictate-your-documents-in-word-3876e05f-3fcc-418f-b8ab-db7ce0d11d3c>



6.2. Apple Voice Control

Voice Control is a speech recognition feature which converts speech to text and allows you to control your Apple device with your voice. On iOS devices, you use it by pressing the microphone icon on the stock keyboard. On desktop, you turn it on by going to System Preferences > Keyboard > Dictation and then use a keyboard shortcut to activate it in your app.

Platform: macOS and iOS

Price: Free

For more information, please visit the following link:

<https://support.apple.com/en-us/HT202584>



6.3. Google Voice Typing

Google Docs contains a built-in tool for dictation and voice-driven editing. Called Voice Typing, this tool is only available in Docs when running Google Chrome. Turn it on from the Tools menu, and a microphone appears on your document. Click the mic to start and stop dictation mode.

Platform: Only available online in Google Docs when using the Google Chrome browser (all platforms)

Price: Free

For more information, please visit the following link:

<https://support.google.com/docs/answer/4492226?hl=en>



6.4. Otter.ai

Otter is an AI-powered assistant which generates captions, transcriptions and rich notes for meetings, interviews, lectures, and other important voice conversations. Also works well with Zoom and Microsoft Teams to generate live captions.

Platform: Windows, macOS, iOS, Android

Price: Free with limited features, professional license is available for a monthly or annual payment.

For more information, please visit the following link:

<http://otter.ai/>

6.5. Dictation.io

Dictation.io is a free website that lets you turn your speech to text. You will need an internet connection to use it as your speech is processed through Google's servers in real time. Everything runs in the web browser, so once you have finished dictating, you can copy and paste your work, export to a .txt file, tweet it, email it, or print it from the app. It supports 67 languages, including Afrikaans and Zulu.

Platform: Only available online in Google Docs when using the Google Chrome browser (all platforms)

Price: Free

For more information, please visit the following link:

https://dictation.io/?utm_source=zapier.com&utm_medium=referral&utm_campaign=zapier



6.6. Google Live Transcribe

Live Transcribe is a new accessibility service built by Google for the deaf and hard of hearing. Using Google's state-of-the-art automatic speech recognition technology, Live Transcribe performs real-time transcription of speech to text on your screen, so you can participate in conversations going on in the world around you.

Platform: Android

Price: Free

For more information, please visit the following link:

<https://www.android.com/accessibility/live-transcribe/>

6.7. ListNote Speech-to-Text Notes

ListNote Speech-to-Text Notes is a popular speech recognition app for Android. It combines the classic notepad functionality with voice dictation, using your phone's built-in Google Voice Search to turn voice to text while recording the audio at the same time. The app saves each recording as a searchable note that you can categorize and color code. You can share these notes via email, text, and to any other supported app you have installed, as well as play the recorded audio while reading the transcribed text to check it.

Platform: Android

Price: Free

For more information, please visit the following link:

https://play.google.com/store/apps/details?id=com.khymaera.android.listnotefree&hl=en&utm_source=zapier.com&utm_medium=referral&utm_campaign=zapier



6.8. Gboard

Gboard, available for both Android and iOS, is a powerful mobile keyboard app that includes a dictation tool. Press and hold the spacebar, and you can dictate at length. Gboard transcribes everything you say in real time and without a time limit, although you need an internet connection to use it.

Platform: Android

Price: Free

For more information, please visit the following link:

https://play.google.com/store/apps/details?id=com.google.android.inputmethod.latin&hl=en_ZA



6.9. Microsoft Teams (Live Captions)

With Live Captions, Microsoft Teams can detect what's said in a meeting and present real-time captions for anyone who wants them. This feature is currently only available in English (US) and on the desktop app.

Platform: Windows, macOS

Price: Free

For more information, please visit the following link:

<https://support.office.com/en-us/article/use-live-captions-in-a-teams-meeting-4be2d304-f675-4b57-8347-cbd000a21260>



6.10. Zoom (Closed Captions)

If closed captioning is in use during a Zoom meeting or webinar, you can view closed captions as a participant.

Platform: Windows, macOS, iOS, Android

Price: Free

For more information, please visit the following link:

<https://support.zoom.us/hc/en-us/articles/115003498783>

7. Accessible Documents

7.1. RoboBraille

RoboBraille is a free email and web-based service capable of converting inaccessible documents such as scanned images and PDF files into accessible formats including Braille, mp3 and Daisy.

Platform: Online

Price: Free

For more information, please visit the following link:

<http://robobraille.org/>

8. Disability Rights Unit: Support with Assistive Technology

Should you need any support or assistance with assistive technology, please contact Andrew Sam, DRU Adaptive Technologist, at: andrew.sam@wits.ac.za.