

# Inclusive Technologies in the age of Blended Learning

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**ADCET Webinar – September 2017**

# Welcome

Acknowledgement of country.

## Brief Introductions

- Darren Britten has been involved in e-learning and accessible resource development for the past two decades. He has been active in designing and developing learning objects for online delivery and is passionate about the 'internet of things' being accessible to everyone. He has been instrumental in developing the Inclusive Resources Development (IRD) team at La Trobe University that provides accessible resources support for students with print and hearing impairments. The IRD team has won several awards for student support including: 'Making a Difference' award from Vision Australia, an 'Excellence in Transition Award' from Pathways 9 and a La Trobe University Citation for Outstanding Contribution to Student Learning.
- Martin Kelly is an Inclusive Technology Consultant with over 20 years' experience within the disability and education sector. He has worked as an Inclusive Technology Advisor at RMIT Disability Liaison Unit as well as a primary school teacher, integration coordinator and TAFE teacher in disability support work. He has degrees in education, psychology and software development. His fascination for technology is combined with a person centered approach where understanding the individual needs of each student, their goals and the context of their learning environment becomes the basis for assistive technology support

# ADCET Webinar – September 12, 2017

“The times they are a changing....”

As the post-secondary education sector continues to transform into the online and offline spaces of students’ lives, the tools and skills required by students to access and participate in education are changing too. In this webinar we will look at the changing teaching and learning landscape for students with a disability and explore some of the readily available tools and technologies that can assist them in actively engaging with their studies.

## **Today's Webinar will look at**

- Changing Educational Landscape
- Changing Role of the Student
- Changing Technologies

# Introducing Jo

Jo will represent our fictional student that will help us navigate these changing landscapes.

Jo is our go to student for the examples in this webinar

Jo is flexible and has no restrictions on environment or ability

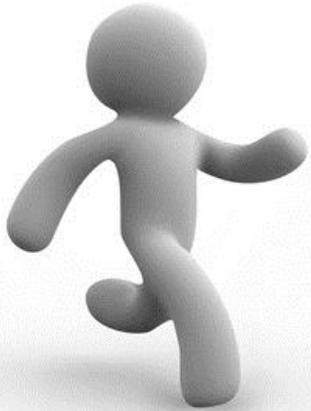
Jo has many abilities and skills.

Jo has one special skill that no other student has...



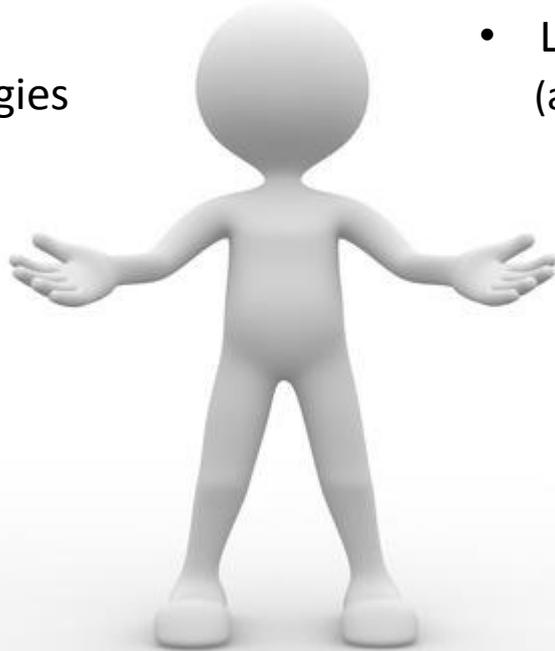
88 MPH

.... time travel.

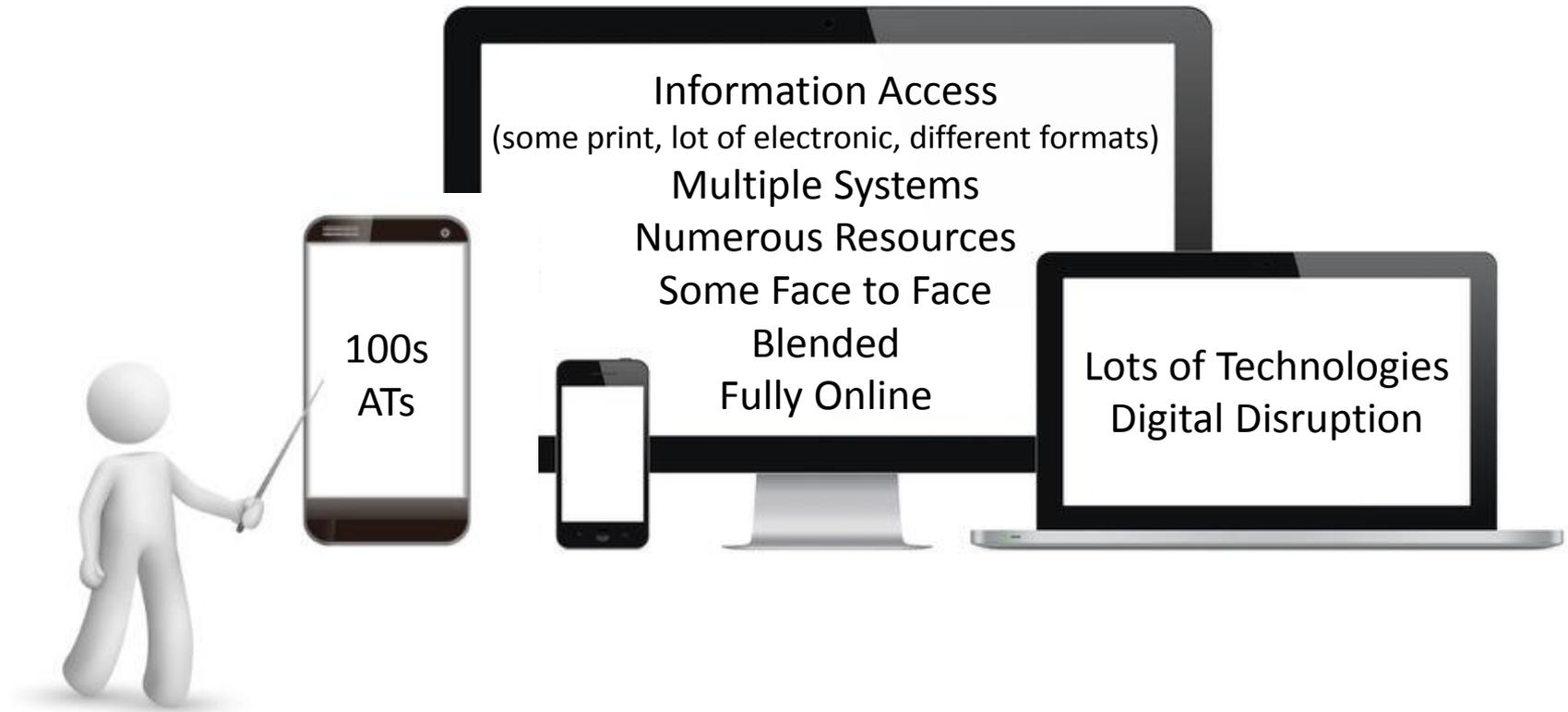


## First Stop - 2004

- Information Access  
(Mainly Hardcopy & Some Electronic)
- ~ 20 Main resources per subject
- Largely linear processes
- Few Assistive Technologies
- Face to Face teaching
- Few T&L Technologies
- On campus learning
- Library full of books  
(and photocopiers)



# Present Day

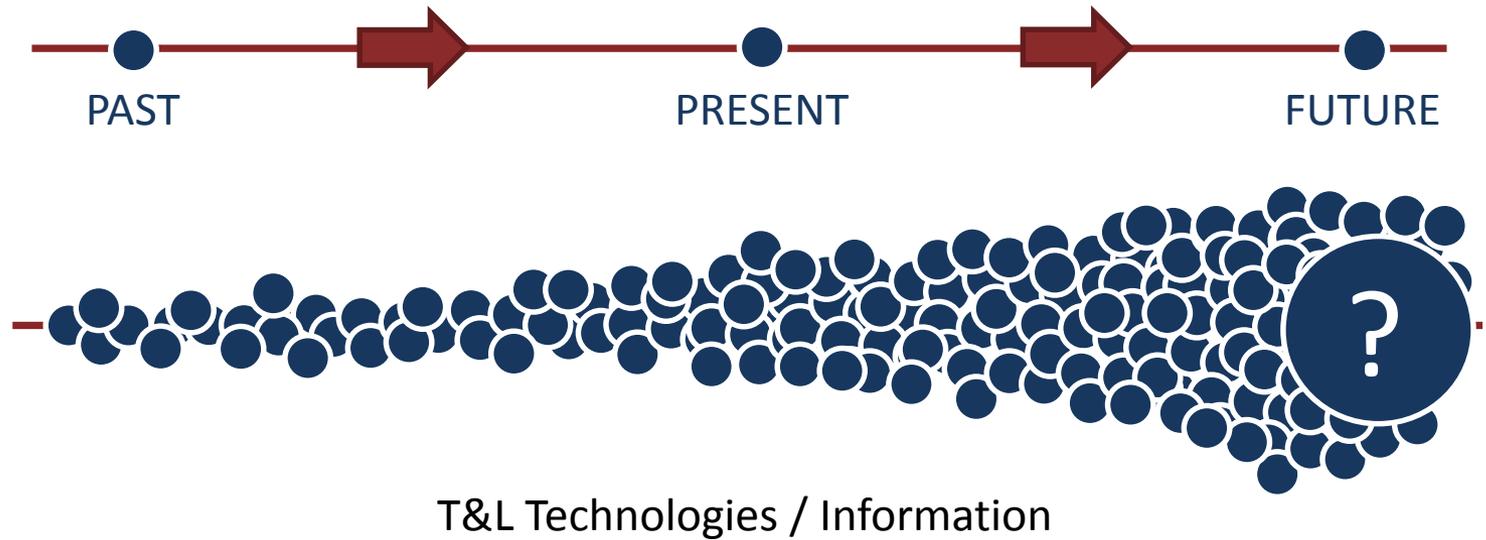


## So what has changed ?

- Increasing Student numbers
- Needs and demands
- Staff & Student skills levels
- Teaching Modes
- Technologies used to access and participate
- One size does not fit all
- Timeframes and lifecycle of resources have reduced
- Increase in learning resources required by students
- Students require more agency, individual skills
- Numerous single/dual and multiple purpose apps and tools



# The Future



# My Seven C's Checklist

- Communication (clear information and expectations)
- Consistency (in presentation, locations and style)
- Context (the why)
- Choice (flexibility, multiple formats or options)
- Control (user customisation, downloadable)
- Channels (for contribution, feedback and engagement)
- Compliance (standards based, technology agnostic)



# ADCET Inclusive Technology Resources

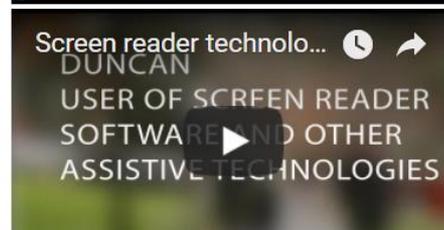
[ADCET Inclusive Technology section of website](#) has information:

- about Assistive Technologies grouped by disability type.
- video resources featuring students talking about their experiences of using assistive technology.
- where to purchase assistive technologies



- ⤴ ADCET Home
- › Disability Practitioners
- › Inclusive Teaching
- › Students With Disability
- › Opening All Options
- › For NDCOs
- › Pathways Conference
- ▼ **Inclusive Technology**
  - › Acquired Brain Injury
  - › ADHD
  - › Autism Spectrum Condition
  - › Blind and Vision Impaired
  - › Deaf and Hard of Hearing
  - › Health Conditions
  - › Intellectual Disability
  - › Learning Disability
  - › Mental Health Condition
  - › Physical Disability
  - Videos

## Inclusive Technology



# How have assistive technologies evolved in the context of the changing environment?

Some technologies have responded by:

- **Subscription model of providing software:**
  - E.g. [TextHelp Read & Write for Google Chrome](#) and [Sonocent Audio Notetaker](#)
  - Advantage: ongoing technical support and updates
- **Device agnostic:**
  - Windows, Mac or tablet. Smartphone apps sometimes also available.
- **Flexible licencing:**
  - [Sonocent Audio Notetaker licence manager](#) and [TextHelp Google Chrome sign in on any device](#).

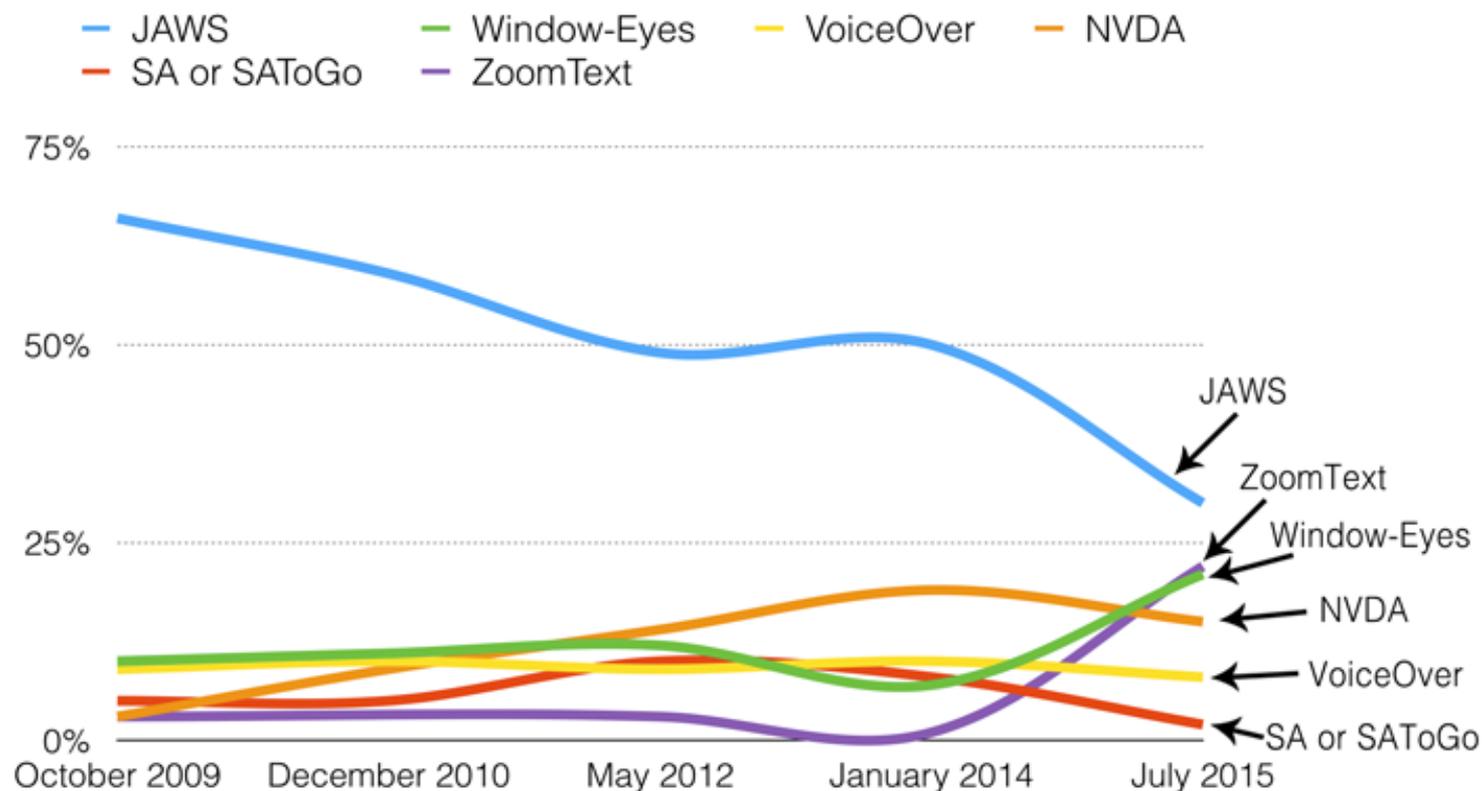
# How have assistive technologies evolved in the context of the changing environment?

Some technologies have responded by:

- **Partnering of multinational companies** with other technologies
  - E.g. [NVDA](#) (Non Visual Desktop Access) and Microsoft
  - Google and TextHelp and [BrailleNote](#) and Google
- **Native accessibility** within web browsers and operating systems has improved:
  - [Google Voice Type](#)
  - [Microsoft speech recognition](#) and [Mac VoiceOver screen reader](#) and [Mac Dictation](#)
- **Single purpose apps** e.g. text-to-speech
  - More reliable

# WebAIM Screen Reader User Survey

Visit the [WebAIM website](#) for a full description of the survey:



## Screen Readers: NVDA & JAWS comparison

NVDA	JAWS
Initial release 2006	Initial release 1995
Free. Funded by companies e.g. Microsoft	Pay for licence
Windows compatible only	Windows compatible only
NVDA uses accessibility APIs (application programming interfaces)	JAWS uses video intercept (works with applications that do and don't use accessibility APIs)

Is there are a difference in the functionality between the two when using Microsoft applications and web browsers and other major applications? Anecdotal user commentary on various web forums suggests differences are minor.

Interesting article: [Switching from JAWS To NVDA](#)

# ZoomText Fusion 11

The makers of ZoomText (Ai Squared) and the makers of JAWS (Freedom Scientific) have released [ZoomText Fusion 11](#)

The rationale is to provide a product that meets the needs of the user whose vision is changing over time.

[Video and audio about ZoomText Fusion 11.](#)



## Maths related technology



- TextHelp product which is a Google Chrome extension
- Creates maths expressions that use equations and formulas
- Handwriting recognition (touch screen or touch pad), speech recognition and ability to type equations
- Text-to-speech of math expressions

### More information about EquatIO

- [Video demonstration of EquatIO](#)
- [Difference between the free and paid version for EquatIO.](#)

# Voice Recognition

Two reviews of voice recognition technologies in 2017

- [TechRadar review of 2017 voice recognition technologies](#)
- [Top 10 reviews: 2017 voice recognition software reviews](#)

Features of Dragon products are:

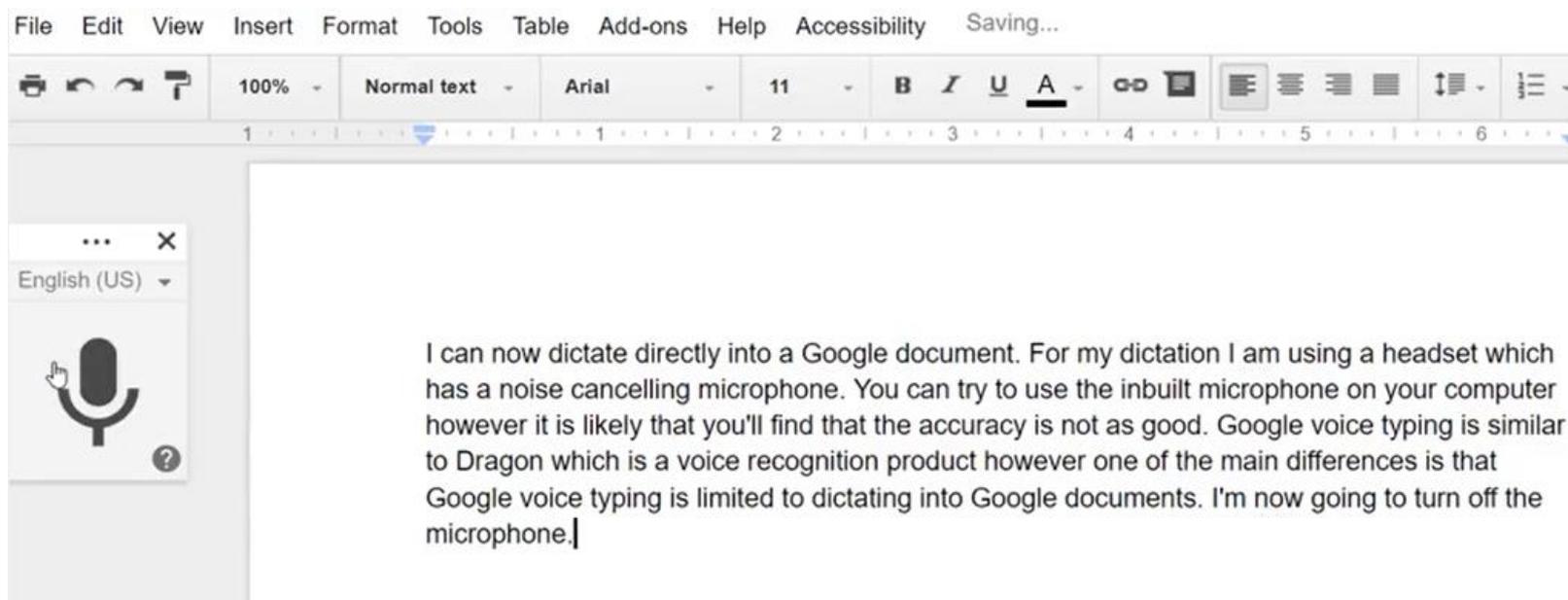
- Accurate voice recognition for dictation
- Ability to customise vocabulary e.g. add specialist terms
- Ability to navigate operating systems with voice commands
- Ability to customise commands and use macros
- Medical version and Legal version of the product

Other voice dictation technology:

- [Google Voice Type](#)
- [Mac dictation](#)
- [Windows 10 speech recognition](#)

# Voice Recognition

[Video introduction to Google Voice Typing.](#)



# Text to Speech



- Many devices now have some form of converting text information to
- audio on PC, Apple and Android devices.

Some relatively inexpensive software that have natural sounding voices.

[Text Aloud](#) (PC)

[Ghost Reader](#) (Mac)

Many of the eBook readers now have text to speech functionality built in.

[Moon Reader](#) (Google Play Store)

[eReader Prestigio: Book Reader](#) (Google Play Store)

<https://www.tomsguide.com/us/pictures-story/583-best-ereader-apps.html>

# Sonocent Audio Notetaker



## [Video introduction to Sonocent Audio Notetaker](#)

The screenshot displays the Sonocent Audio Notetaker interface. At the top, there is a control bar with various icons: a blue square labeled "STOP", a camera icon labeled "CAPTURE", a play button, a volume slider set to 1.0, a "PAUSE MODE" button, and a "VOICE SHIFT" button. To the right of these are icons for "SECTION", "IMPORT", "EXPORT", "EXTRACT", "SPEAK", "SCRIBE", and "TOOLS". Below the control bar, the interface is divided into three main sections. On the left is a "VIEWS" panel showing a slide from a presentation. The slide content includes the "ckan" logo, the name "Irina Bolychevsky @shevski", and a paragraph: "We are a global network using advocacy, technology &amp; training to unlock information and data and empower citizens and organizations to drive positive change". Below this is the "OPEN KNOWLEDGE okfn.org" logo. The middle section is labeled "TEXT" and contains the text "Open source" and "World wide take up". The right section is labeled "AUDIO" and shows a timeline of audio recording segments. A large red arrow points from the text "Audio now being recorded beside 2nd slide" to the audio recording bar in the "AUDIO" section.

Lecture slides from [Open Data Institute](#). "Friday lunchtime lecture: When governments open up, who manages their data?" by Irina Bolychevsky. Copyright: [Attribution ShareAlike \(BY-SA\) licence](#)

# Technology for Deaf and Hard of Hearing

- [Phonak devices](#) that work with hearing aids and cochlear implants.
- [Cardionics Stethoscopes](#) that have headphones that work with or without hearing aids and cochlear implants.
- [Bellman FM receivers and transmitters](#).

Also see the [ADCET website](#) for further technologies for deaf and hard of hearing

## In research and development phase

- [iCommunicator](#) a is relatively new technology for people who are deaf.
  - convert speech or text to video American sign-language.
  - The product makers do state it is not intended as a replacement for sign-language interpreters, but as an alternative when an interpreter is not available
- Interesting [article on technology being developed to convert American Sign Language to text](#).

# Productivity and time management apps

The following apps are fun and free:

- [Forest](#): A smartphone app for staying focused for 30 minute periods
- [SelfControl](#): Mac OS app for blocking access to distracting websites for set time periods
- [StayFocusd](#): Google Chrome extension, similar to SelfControl -- blocking access to distracting websites for set time periods
- [Tomato Timer](#): Web based timer that uses the [Pomodoro method](#) of time management i.e. dedicated period of focused study (usually 25 minutes) followed by break (usually 5 minutes)

## Grammar app

[Grammarly](#): One of many grammar apps. It's a free Google Chrome extension

# The SETT Framework

[The SETT Framework](#) collaborative approach

SETT stands for:

- Student:
  - learnings strengths, impact of disability/health condition on learning, their goals and interests
- Environments
  - educational institution, home, workplace etc?
  - what learning supports does the student have?
- Tasks
  - what tasks does the student need to do?
- Tools
  - Based on the above information:
    - what technology best meets the students needs.
    - what other resources such as training and technical support will the student require?



# Thank You



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