# Assistive Technology (AT)

## From mainstream to specialist solutions

## Intro to AT

This document has been prepared by Jisc subject specialist Rohan Slaughter to assist those new to supporting students with assistive technology. Note that the Natspec **TechAbility** team has also supported the creation of this document. This document has been produced quickly, it is not aiming to be complete, and will be iterated.

## Why use AT?

» Assistive technology provision allows students to:

  › Access the curriculum at all (e.g. a communication aid user)

  › Access the curriculum at a higher level (e.g. those needing literacy support software)

» Allows students improved:

  › Independence

  › Access to communication

  › Access to the environment

  › Access to leisure opportunities, enjoyment and fun!

## Defining AT

» What is **Assistive Technology?**

  › *"Assistive technology (AT) is any item, piece of equipment, software program, or product system that is used to increase, maintain, or improve the functional capabilities of persons with disabilities.* (**ATIA definition**)

» In College contexts we can include:

» **Computer access devices**

  › Alternative pointing devices, keyboards, other input devices like eye-gaze or switches

  › Low or no vision / hearing support e.g. screen readers, amplifiers etc.

» **Communication aids,** also known as AAC – Alternative Augmentative Communication, VOCA – Voice Output Communication Aid

» **Impairment based support,** e.g. technology to support visual impairment or hearing impairment etc.

» **Literacy and numeracy support tools** (Read and Write, Dragon, mind mapping tools etc.)

› 'Baked into the operating system' **accessibility options** (e.g. Windows, MacOS, iOS iPhone, iPads etc.)

» **Environmental Control Systems (ECS)** for home automation (e.g. media control, lights, heat, windows, doors, blinds etc.)

# Assessment for AT

For people with even mild to moderate needs assistive technology assessment should be undertaken by an appropriately qualified and experienced individual. For students with complex needs, it is unlikely to be possible to undertake a realistic or useful AT assessment without access to appropriately qualified staff. The SETT framework as originated by **Joy Zabala** may be useful when developing your approach to AT assessment. For those who are more familiar with AT selection, the **Technology Acceptance Model** (TAM) may also be useful.

However, we are living in challenging times, and we have been asked to provide some guidance on an assessment process:

1. **LISTEN**. Most users of AT will be able to tell you what works for them, start by listening to the user and go from there!

2. **READ**. Some users of AT will have an 'AT passport' or 'communication passport' (the latter in the case of an AAC user) that has been prepared by the student's school or college. In other cases, (e.g. students with specific learning difficulties or sensory impairments) alternative documentation may be supplied.

3. **TRIAL.** Try out an access method with the student, ask them if what you are trying makes things easier, if it doesn't try something else! This may need to be tried over days/weeks and in context.

4. **REVIEW.** Something might work initially or for a while. If you don't check this you won't know whether what you have put in place is still working. Ultimately, if it isn't working, change it!"

# A continuum of support

We see assistive technology as offering a continuum of support from mainstream technology that has 'baked in' accessibility features at one end, to specialist assistive technology such as high-tech AAC (alternative augmentative communication) / AT at the other end of the spectrum.

This document is intended as a starting point for anyone who might benefit from assistive technology support. It does not focus only on mainstream tech, whilst that would address the needs of a larger number of students it would leave out those students who attend specialist colleges and special schools and in some cases these students can derive most benefit from the use of AT. We have seen examples of high-tech AT / ACC used in mainstream schools by high achieving students, who are physically disabled, and these students are doing very well as a result. In some cases, physically disabled students who are cognitively able are not given the optimum 'working medium' that would enable them to excel. This group of students cannot access the curriculum at a sufficiently high level without having a functional 'working medium'. That can only be achieved via high quality AT assessment, provisioning and ongoing review / support.

# AT tools

## 'Baked in' or mainstream AT

» 'Baked in' accessibility, most operating systems now have built in or 'baked in' accessibility options.

» E.g. Windows 10, Mac OS X, iOS and Android have built in accessibility options:

  › Windows **Ease of access centre**

  › Mac – **Accessibility options**

  › iOS **Accessibility options**

  › Android and ChromeOS (**link to Google Accessibility home**)

» Useful to:

  › Change things visually

  › Change access (mouse and keyboard settings)

  › Audio output – e.g. narrator text to speech

» Getting help with mainstream technology accessibility:

  › A good place to start **is the TechAbility resources webpage**

  › The ETF provide the **Make Tech Work For You** YouTube video resources

  › See also the **My Computer My Way** resources from AbilityNet

  › **Call Scotland** also maintain useful guidance on how to **customise accessibility options.**

» Note that in order for networked Windows machines to retain such changes to user settings a technology such as *roaming profiles or User Experience Virtualisation (UE-V) is required*

» Note also that mobile device app-based tools can be very useful, the **Call Scotland app wheels** provide a useful overview

  › An example of an AT app is Microsoft's **Seeing AI**, this can make a huge difference to people with specific impairments, in this case to those with a visual impairment

» If you have access to Office 365, the **learning tools** that are now included may be useful

# Specialist AT hardware

» AT Hardware

 › Mainly about accessing the computer, consider:

 › Alternative pointing devices (see a **selection on the inclusive technology website**)

 › Alternative keyboards (see a **selection on the inclusive technology website**)

Note: changes to the mouse and keyboard settings in the Accessibility Options may also be required e.g. mouse pointer speed

 › Alternative input such as switch scanning (see **inclusive technology switch progression road map**) and eye-gaze (your gaze is your mouse pointer, see **Tobii Dynavox Eye Gaze Pathway**)

» Devices such as **scanning pens** can be a very useful literacy support as they can be used to 'read aloud' printed text

» AAC devices (voice output communication) aids, see **Communication Matters** website for more information

# AT Software

Just a handful of examples:

» Eduapps (free), is still available via: **http://eduapps.org/** as curated by Craig Mill at Call Scotland, includes:

 › My Study Bar – reading and writing

 › My Vis Bar – addresses visual difficulties

 › Access Apps – 60 open source / freeware Windows Apps

» **The Grid 3**, Highly flexible, (communication aid, mediated operating system and supports all methods of access)

» **Clicker**, a literacy support tool, some free resources are available on the **Learning Grids** website

» The **ClaroRead** and **Read and Write** software packages are both well featured literacy support tools

# Mounting and positioning equipment

Don't forget that for users with a manual dexterity impairment (and for some others with other impairments) that where any input equipment or the device to be controlled are located will be critical to success. Consider the following:

» Mounting equipment on a desk or wheelchair (see **mounts and more**)

» Location of the input devices (see **mounting equipment at inclusive technology**)

» Location of the screen in relation to the user (see **PC and monitor mounting systems at Amazon**)

# Additional support needs

Rather than re-invent the wheel we are linking to the excellent reference from CALL Scotland who provide the following useful guides on additional support needs on technology to support people with:

» **autism spectrum conditions**

» **communication support needs**

» **dyslexia**

» **physical support needs**

» **severe and complex support needs**

» **visual impairment**

# AT resources and support

## Jisc support

Jisc member Colleges, inclusive of specialist colleges and mainstream general further education colleges can access the subject specialist team for support in various areas:

» Support on accessibility and assistive technology: **Rohan Slaughter** and **Kellie Mote**
  › **Accessibility landing page** and the **Accessibility regulations - what you need to know**
  › List of **accessibility and assistive technology** related guides
  › **Accessibility drop-in clinic webinars**

» Wider support with strategic use of technology, infrastructure and assistive technology: **Rohan Slaughter**, and the infrastructure team

» Integrated digital technology strategy: **Mark Ayton** and **Allen Crawford-Thomas**

» Support for teaching, learning, assessment and the 'digital student experience': **Chris Thompson** and the digital practice team

# Natspec TechAbility service support

» **Natspec Colleges** and **Karten Centres** can access a range of support from **TechAbility** (a Natspec service supported by the Karten Trust), others can access the service for a fee

» The **TechAbility Standards** may be used in the following ways:

› As a starting point to improve technology use

› As an audit tool or inspiration in an understandable format

› Understanding how TechAbility can improve educational outcomes by encouraging targeted and needs-led interventions

› To support quality assurance or inspection and to measure excellence with technology focused on learner outcomes

» **Direct support from TechAbility**

› Assistive Technologists Neil Beck and Fil McIntyre now undertaking support visits

» Local support from **TechAbility centres of excellence**

› TechAbility is an assistive technology and information technology (AT/IT) service to improve outcomes for SEND learners in mainstream and specialist further education

› Services include training, direct support, inclusive of assistance with complex AT assessments

# Other third sector support

» **AbilityNet**

› AbilityNet offer a range of training, primarily on **digital accessibility in higher and further education**

› The **My Computer My Way** resource provides help on making your device easier to use.

» **Ace Centre**

› Ace Centre provide **entry level training** and **academic qualifications** that related to AAC (alternative augmentative communication) that a delivered in partnership with MMU (Manchester Metropolitan University).

 **CALL Scotland**

› CALL Scotland at the University of Edinburgh provides a range of training courses that are delivered both online and in person.

› **Training courses**

› **On-site training**

› **Webinars**

› **Inclusive digital technology**

› **Seminars and events**

› **Online workshops**