

Android tablets to support students with special educational needs and disabilities and inclusive education.

This article explores some of the benefits of using tablets in school for pupils with special educational needs to support inclusive practice. It is informed by findings from emerging research and case studies of practice, and suggests a number of free and paid for apps that you might like to try.

The majority of young people see tablet devices as an essential part of their lives, providing access to entertainment, information and modern education. Tablets are widely used in the home and increasingly in schools to support learning. Research highlights some of the immediate benefits for schools and the potential to change approaches to teaching and learning, including:

- Personal ownership is leading to increased motivation, interest and engagement, promoting autonomy and encouraging students to take more responsibility for their own learning
- Tablets are enabling students to express their creativity
- Tablets support students of all abilities - and make that learning more transparent
- Tablets support communication and interaction with:
 - Content
 - Peers (both off and on-line) – with collaboration and peer coaching
 - Teachers and with parents

All of these benefits are significant to young people with special educational needs and disabilities (SEND).

Benefits for pupils with special educational needs

It is widely accepted that technology makes a real difference for students with SEND; for some it is essential making a profound difference to their education and lives. Portable personal tablets can provide a person with a 'voice', enable blind learners to access texts, provide speech or symbol support to reading and writing where text is a barrier, and help students to access learning and communication independently.

Making use of the built in accessibility features in the tablet operating system can support all learners particularly those with special educational needs. Talkback provides spoken feedback when an app is opened, or if there is a new email, and can be set up for vibration feedback, and sounds can be assigned to different actions. Explore by Touch works alongside Talkback, so when a learners touches the screen they can hear what is under their finger. The benefits are obvious to students who are blind or have visual impairments but can support others as well. The accessibility setting can also be used to change the text size, assigning different functions to buttons and more.

The portability, built in camera, internet connectivity and location services there are a huge range of free and paid for app offering real alternatives to existing software and provide new learning opportunities.

Interaction and communication

Tablets are already proving invaluable for pupils at the early stages of communication, for example learners on the autistic spectrum, or with little language. Almost instantly 'on', rather than having to wait for the device to load software, they are invaluable for pupil-led learning, accessing games or multimedia stories or cause and effect activities. The use of the camera can provide instant and relevant content and feedback, encouraging interaction and communication.

Pupils with autistic spectrum disorders (ASD) have been found to engage in more independent learning, focusing on learning and resulted in improved behaviour with more willing to engage in English and ICT objectives. More able students have acted as digital leaders showing other pupils how to use the apps.

BBC Something Special (free)

Something Special, which provides Makaton sign supported content and games, is a favourite and works well on mobile devices,

<http://www.bbc.co.uk/cbeebies/something-special/>. Try out Something Special

Tumble Tap Game, a simple matching game with configurable difficulty levels -

<http://www.bbc.co.uk/cbeebies/grownups/activity/something-special-tumble-tapp>

Magic Finger from Inclusive Technology (free)

This free resource motivates interaction using a touch screen, supporting cause and effect in a fun way. Both multi-touch and single-touch the latter reinforces finger pointing skills with a purpose. Turning off the sound/ music helps to assess if the child needs auditory feedback and whether they can see and enjoy the visual feedback alone.

Peeping Musicians from Inclusive Technology (£1.99)

This app from the same company helps to encourage early looking/observation skills and to develop basic touch and targeting skills. The design and high contrast colours supports children with visual and perceptual difficulties, and it also aids the development hand eye co-ordination.

Talking Tom Cat from Outfit7 (free and priced)

This app has proved hugely popular as Tom repeats what is said, motivating and encouraging learners to speak and interact with him. Some of the features may appeal more to older learners with learning difficulties, and use in the classroom should be managed.

HelpKidzLearn available online at <http://www.helpkidzlearn.com/>

This paid subscription service for schools and individuals provide accessible games and activities, and are designed specifically for young children and those with learning difficulties. There are configuration options for switch user and different access methods and ten free games to try out.

Reading and writing

Software that supports young people with specific learning difficulties such as dyslexia, or who encounter a barrier to reading or writing, has been available as a tried and tested form of support for some time. Software with these functions is now appearing on highly mobile tablet devices.

Apps that capture information on the screen and it read back using synthetic voice, or can speak out onscreen text, either from a writing app, the internet, scanned text or an image, along with the ability to change the text size, colour and background colour can support reading and writing. Case studies highlight that students with dyslexia benefit across the curriculum, by utilising the personalised settings and predictive text/speech output. Student report having more control through the interface to set up the options that they need – for example the font size and colour, background colour and speech support, along with the easy to highlight words, and to zoom in to see more detail.

Capturataalk from Iansyst (£48) <http://blog.iansyst.co.uk/store>

This app makes text accessible on the move providing literacy support to improve reading and writing skills. It includes many of the features described above including the facility to taking photos and using the built-in OCR software to read back the text.

Using an e-book reader with built-in read aloud features opens up access to both free and paid for resources. Increasingly publishers are providing these in a standardised accessible format. A guide to the growing number currently available can be found on Publishers Lookup - <http://www.publisherlookup.org.uk/>

Load2learn available at <http://load2learn.org.uk/>

Delivered by RNIB and Dyslexia Action, this is a free membership service providing learning resources in downloadable, accessible formats, for students who have difficulty reading standard printed books.

Swype Keyboard from Nuance (65p)

This app can help pupils to type text more quickly as it learns the particular way a person types and spells and adjusts accordingly. Linked to speech prediction software it can also speak the words they type. This approach may support young people with restricted hand/finger movement where a smaller keyboard is required or where typing is an effort.

There are a growing number of onscreen keyboard alternatives available, and with a low cost adapter you can connect a physical keyboard or input device to the tablet if needed.

There are many online and apps of popular stories and the multimedia elements provide a multisensory experience that can engage many learners. Deaf learners can also benefit from the addition of signed support to access stories.

Signed stories from ITV (free online) online at <http://www.signedstories.com/>

This excellent collection of popular stories for children is grouped thematically and supported with BSL signing. Support notes for parents and teachers on how to make the most of the resources for all learners are also provided.

Organising work

As well as apps that support a multisensory approach to reading and writing, mind mapping and visual based organisation tools, for example visual timetables, are beneficial to young people who find accessing the curriculum a challenge.

Mind mapping software is recognised as invaluable for visual learners and those with specific learning difficulties. It can provide a structure which helps in organising ideas and thoughts in a visual way, helping in the organisation of for example an essay, a project, and can help support a wide range of curriculum activities.

Popular examples on the Google Play store include, SimpleMind™ and Mindmeister. There are a range of other free and low cost mind mapping apps on the Google Play app store and it is worth exploring them to see which best suits an individual student as many are free or provide a 'lite' version that you can try out before purchasing.

Any.DO To-do List & Task List from Any.do (free)

Any.DO provides an easy to use task list and organiser with speech input options, which can help young people to organise and structure activities. It can help students with poor memory or organisation skills, or where a range of sequenced tasks are required.

Supporting communication

In addition to speech output, pictures and symbols are a well-established support for literacy and curriculum engagement. Symbols can be used to provide support for young people with complex communication difficulties (as an alternative to traditional text or on communication devices) and early readers as a form of scaffolding that over time can be removed. Examples of apps to support this group include:

PhotoVOCA from Cognable (free)

This free switch accessible communication board maker supports both text-to-speech and digital voice recording. A simple augmentative and alternative communication (AAC) tool for new, young and less able communicators it includes some example Grids and more are available from the PhotoVOCA website.

Widgit Go from Widgit Software (free and £54.98).

This app is for creating activities and grids to support communication, learning and language development and can be used as a voice output device or to write simple documents with symbols and text from Grids. Examples activities are included and the priced version comes with the full set of Widgit symbols.

See also other apps that support communication, for example: JABtalk from Jabstone LLC, Quick Talk AAC from Digital Scribbler, Inc., and Tobii Sono Flex.

Over to you!

There is currently little research or sharing of examples of apps to use and good practice in the use of the Android tablet, although with recently announced changes to the Google Play Store, with the creation of a dedicated Education and tablets area, this is likely to change.

This article has made a start by highlighting the benefits of tablets, and some of the many apps that can be used to support the learning of young people with special educational needs.

GoLearning want to start a debate about what works and what does not for all learners! They want to capture and share widely information and advice on how tablets can support the inclusion of learners with special educational needs and disabilities. Increasingly mainstream and specialist developers of products for this group of learners are bringing out software for Android tablets and making use of the special features only highly mobile devices have – more portable, more easily shared in collaborative setting, easy to use to capture images, and easy of communicating with others.

We intend that future articles will build on this start and incorporate your recommendations, and will examine other areas of the curriculum, and explore support for other areas of need, for example social and emotional development. We will provide further examples of innovative apps and case studies of practice in using tablets in the classroom. If you want to contribute to this debate please let us know!

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