

The Dyslexia Apps Project

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The development of the ability to use ICT apps to enable access to the curriculum and promote confidence and independence in KS4 learners with SpLD/dyslexia is central to this project. iPads and apps are having an increasing impact upon learning for vulnerable students.

1:1 mobile learning allows teachers to differentiate between different learning styles and abilities making them a perfect learning tool for SEN students. Students who ordinarily struggle with traditional ways of accessing and presenting knowledge now not only have more options, but can use the same device as everyone else and are not set apart in class. Mobile devices enable students to present information so that it is easily understood, providing a more accurate picture of their abilities and progress.
(Techknowledge for Schools, 2015)

The use of an economical personal device, available at any time and in any place, would offer a range of opportunities for overcoming learning barriers. Dyslexic learners struggle to access text, spell their work accurately and present work without mistakes (Mortimore, 2008). Information from existing texts can be made accessible for those with literacy difficulties by using the Optical Character Reader to scan material. This would enable the dyslexic learner to have the work read back with highlights to focus in on the text. There are also apps such as *Handy Book* (Android only) and *Focus Reading cards* (PC) that are simple ideas based on showing a single line of text at a time, enabling pupils with tracking issues to follow the text easily. Work can be stored and retrieved instantly overcoming some of the difficulties with organisation that often affect a dyslexic learner. Information Technology also offers organisational benefits through putting systems in place that can share work electronically with teaching staff. There are, however likely to be downsides for both learners and teaching staff and these need to be identified.

Not only the learners but also the teachers and support staff will need to embrace the way that technology changes the pedagogy, considering questions such as how their planning or assessment might have to change but also how develop their own confidence and competence in the use of technology. Smythe (2012) emphasises that how the apps are introduced and the levels of support during the induction period are critical to mastery of the apps used:-

No dyslexic individual is going to learn all the functionality in one training session. It is better to have a brief introduction and slowly introduce additional functionality as and when the others are mastered. (Smythe , 2012, p161)

Despite enthusiasm for the use of apps in these contexts (McKeown & McGlashan, 2014) and the fact that schools commit considerable funds to adopting ICT, there is a need for evidence to support their selections. Research into identifying the most effective apps for vulnerable learners, particularly at Key Stage 4 (KS4) plus strategies needed to facilitate their adoption, particularly at times such as transition from Key stage 3 to 4 and to FE, remains limited (Smythe, 2010). <http://www.yots.org.uk/> provides a useful tool for schools

to use to evaluate their own use of ICT. Most information is descriptive rather than research based, for example,

The devices (iPads) have proved especially beneficial for dyslexic pupils, who are able to increase the font size for texts to de-clutter their vision, says Mr Jewell. When reading complete novels, the technology enables them to highlight words they may not recognise and immediately access a dictionary definition.

Mr Jewell found out about this when a dyslexic pupil started providing perfect definitions for difficult words when the class was reading Airman. "I asked him how he did that. He turned his iPad around and showed me. (Belgultay, 2011)

Belgutay makes it clear that strategies must be devised to meet the individual needs of students and demonstrates the need to match the technology to the needs of the individual pupil.

Individualised learning is now a reality. There is an absence of good, quantitative data on the effectiveness of using mobile technologies. Most studies are anecdotal although there are exceptions (e.g. Smythe, 2010). Other studies explore skills or feature-based aspects rather than users' needs. Few explore the choice of apps by dyslexic learners or the impact of these choices (Pepperdine Community, 2010).

The current small scale research study reported here explored attitudes to and use of apps for study support amongst two year 10 students with dyslexia, their peers and their teachers. It aimed to discover which two out of six specifically targeted apps for dyslexia were most useful to these two students. It aimed to provide a rich picture of the experience of all involved during the seven week duration of the study. A mixed methodology design including individual electronic data collection, questionnaires and face2face interviews with the two dyslexic students, their peers and teachers, was adopted.

Subsequent to an examination of the apps use and knowledge exhibited by their peer group, impact of the use of 2 apps over a short introductory time frame of seven weeks was sourced in terms of ease of use and functionality for the learners and the factors that influenced their experiences determined. The 2 apps were selected by the dyslexic students from a list of 6, identified as appropriate and useful for dyslexic learners, including word prediction, text to speech and Optical Character Reader (OCR). If OCR can be achieved accurately this would be a major advance for dyslexic pupils in secondary schools which use text books which cannot be copied electronically for pupils to access in editable forms

The research complied fully with Bath Spa University Ethics policy (2012) Letters of permission were completed by participants, parents and carers These outlined the purpose and process of the research and how the data would be used and stored and assured confidentiality and freedom to cease participation. Identities have been protected by the use of single letters. .

Methodology

The rural comprehensive school of 1,596 selected was about to introduce mobile technology at the time of the study. A fully supportive SENCO and designated Teaching Assistant provided support with apps use.

The aim was to provide a rich picture of the experience of all involved during the study. A mixed methodology design including individual electronic data collection, questionnaires and face2face interviews with the dyslexic students, peers and teachers, was adopted. The study duration was seven weeks April to July. A longitudinal study is planned to show the impact of the technology on pupils' achievement longer term; this study comprises a pilot.

In order to ascertain pupil knowledge about apps, a group of 28 Year 10 pupils completed a pre and post study questionnaire exploring attitudes to using apps. The study sought the opinion of the two dyslexic learners and, in particular, what app helped them to record their ideas most effectively. A combination of recorded audio interviews both pre and post study as well as a weekly electronic logbook maintained by learners and TA was adopted. The two pupils English and Science teacher were interviewed both pre and post the study.

The Dyslexia Apps Project also aimed to identify necessary support strategies.

Apps used

1. CapturaTalk
2. Co-Writer BE
3. WriteOnline
4. IntoWords
5. iReadWrite
6. ClaroSpeak

There is no partiality reflected in the two pupils' choice of apps. It is not the remit of this study to critique or suggest a particular app as "good," in comparison to another. Suggestions to apps suppliers emerging from our study are made in general terms below. As the focus of the study was towards individual tools that worked for each pupil, each pupil chose the apps best suited to their individual needs.

Both pupils were given three of the apps which were a mixture of integrated tools and simple recording tools. Apps that had OCR either had an in app purchase option or the two pupils needed more time to learn how to use this properly. This showed the need for in-app tools to be taught in small selections as the pupils needed them.

Key Findings

- Yr 10 questionnaire showed that not all pupils had app understanding or knowledge. They reported their app use being mainly notes for homework and notetaking and a few revision apps like GCSE Pod and Sam's Learning and a Maths app called MyMaths. Yr 10 also had social media knowledge but not apps for learning saying it was "boring" and that they didn't have knowledge of apps. When asked what they type of apps they would like to use, they said 'game-like apps' and those with a high level of multimedia they could interact with. They did, however, indicate a desire to learn more. App use had increased over the seven week time frame.

- The two English and Science teachers were enthusiastic about the project but revealed restricted knowledge of what apps are available due to limited time to research them.
- Both dyslexic pupils struggled with using the iPad minis and displayed poor resilience if they had a problem. Suppliers may note that due to the students' poor resilience in the study, apps that do a couple of jobs well would work better for pupils who struggle with complexity of tools. The trend to pack features into integrated apps might not work for some individuals.
- A 'One size fits all' solution in terms of IT would not have worked for these pupils. A trade-off needs to be made between what is manageable from a school's point of view and from the pupil's view to widen the range of tools to different platforms.

In terms of support, both pupils valued weekly support from a meeting with the designated TA. The TA emerged as a key factor in the continued use of the apps and in helping pupils overcome their barriers to learning. It is a testament to the support they received by TA that they persisted at this key exam time in their lives. Surprisingly they were very conservative in their attitude to changes in their recording of information. The need for the right tool for the right pupil was key. Pupil B reported that the iPad mini allotted was too big! He found a smaller device like a phone easier to use. Pupil A found the iPad mini slow to use in class. Effectiveness of apps use is affected by the learner's level of confidence and resilience.

Further lessons for the school:

- Training in the teaching and learning use of apps is needed for ALL - both staff and pupils
- Even a short lesson on the use of apps for research from the researcher occasioned a change in attitude occurred towards the use of apps
- Over half of the 28 pupils said they wanted more knowledge and training in the use of apps.
- A culture that models and demonstrates the use of mobile technology and apps is needed to develop pupils' use of apps.

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