

THE APPLICATION GENERATION

It's not all about turning your smartphone into an ocarina and catching up with Angry Birds – Miles Berry's been browsing the virtual shelves for apps that are as educational as they are engaging...

or as long as computers have been used in schools, their advocates have promoted the power of digital technology to transform education, yet the reality has all too often fallen rather short of the potential, with too few computers, unreliable kit and overly complex software and systems. Recently though, things have started to look up, thanks to the take up by schools, teachers and students of personal, handheld kit like iPod Touches, iPhones, iPads and similar Android powered devices. Robust, reliable, simple devices like these, whilst not specifically designed for schools, seem ideally suited for learning, both in the classroom and at home.

There's growing evidence, such as the recent Naace study of iPad use at Longfield Academy¹, that schools able to provide 1:1 access to kit like this really do see significant impacts on learning and pedagogy. Furthermore, '1:1 access' needn't necessarily mean buying a device for every student, as increasing numbers of secondary age young people have smartphones or tablets of their own, which a BYOD (bring your own device) approach to school technology could see being used for school work as well as informal learning, social life, games and media.

Crucial to the success of tablet or smartphone use for learning is connectivity.

Fast, reliable broadband and extensive wifi really is necessary if schools are to make the best possible use of this kit, particularly as so much can be achieved using no app more sophisticated than the web browser. With access to the whole of the web, the opportunities for self-directed, independent learning are immense. It's now wonderfully easy for sufficiently interested, motivated and connected students to teach themselves (almost) anything, using the rich, dynamic resources of Wikipedia, YouTube, Google and the rest of the web to explore, research, connect and share. The tablet or smartphone is a great device for using highly interactive

DID YOU KNOW...
THE APP STORE LOGGED ITS 25 BILLIONTH
DOWNLOAD IN MARCH 2012, WITH THE
30 BILLIONTH EXPECTED BEFORE 2013²



ABOUT THE AUTHOR

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comments and tracked changes. Keynote is great too as a presentation tool, with some gorgeous built in themes and transitions. Apple's AirPlay is great for beaming these to an Apple TV box plugged into an HDMI equipped projector, or indeed to a Windows PC or Mac running ReflectionApp². Mind-mapping works very well on the iPad; my preferred choice is iThoughtsHD. More linear note-taking can be done in Microsoft's OneNote app, and alongside an audio recording. There's a good dictation tool built in to the latest iPhones and iPads, but the Dragon Dictation app is very good too, available for older devices and free. Apple's iBooks and Amazon's Kindle are both great tools for reading, highlighting and adding notes to eBooks, and both provide a mechanism for transferring content to the device outside of their respective book stores. iBooks Author on a Mac, making it possible for teachers to create their own high quality, media rich course texts, or indeed for students to create their own revision guides. iTunesU provides sixth formers with access to high quality content and courses from world class universities, and I suspect it's only a matter of time before we see open resources for UK secondary schools shared here too.

As well as the web as a platform for collaboration, apps like Skype and Apple's own Facetime make video conferencing at student level very easy from a technical point of view and, with a little preparation, joint projects with classes elsewhere in the UK or around the world can have an immediacy and level of interaction which would otherwise be impossible.

Creation story

Not only is an iPad great for accessing content, it's also an effective tool for creating digital content, across a whole range of media. The built-in mike and particularly the camera are excellent, and there are many areas of the curriculum where being able to take photos or shoot video can add so much to students' learning, as well as contributing to a rich portfolio of evidence. Geotagging photos and iMovie are hugely impressive, allowing students to revise and refine their work before sharing their achievements with one another or indeed a global audience. Apps like Garage Band, Brushes, iStopMotion and ComicLife provide further scope for digital creativity.

With the renewed interest in programming

1. NACE.CO.UK/PUBLICATIONS/LONGFIELDIPADRESEARCH 2.HTT://APPSFORGOOD.ORG/ 3.HTT://WWW.REFLECTIONAPP.COM/ 4.HTT://APPSFORGOOD.ORG/ 5.HTT://APPINVENTOR.MIT.EDU/ 6.HTT://WWW.STENCYL.COM

HTML5 sites, and any decent VLE or blog platform these days is likely to have a selection of responsive themes tailored to the smaller screen. Some web-based platforms have dedicated apps too; for example, Wordpress's app makes it easy to write blog entries, even when off the net, and there are similar apps for accessing a Moodle VLE.

Spoilt for choice

Beyond the browser, the simple approach to software for these devices, in the form of highly focused, often single purpose 'apps' seems well suited to education, especially as so many of these are either free or cost a small fraction of the price of the education categories in the iTunes App Store or Google's Play marketplace will suggest countless apps across the whole breadth of the curriculum, pupils themselves quickly acquire a certain savviness in deciding between the good and the bad here, and there's no reason for teachers to assume that one app would suit all learners. Alongside these, there are more generic apps that, whilst they don't have any educational 'content', and probably haven't been designed with the classroom in mind, are just the sort of digital tools needed to make great creative, collaborative use of this technology for learning across and beyond the curriculum. It's this sort of app that I'm focusing on in what follows. The selection here is a personal one; other apps, often with very similar functionality, are available, and I'm concentrating on Apple's iOS platform rather than Google's Android operating system. Pages is a lovely word processor, and is particularly good at creating documents that combine images and text effectively, something which I still find ever so slightly tricky in Word. That said, it's not (yet) good at managing complex workflows of

and other aspects of computer science in the ICT curriculum, there's scope for students to get to grips with developing apps themselves. There's more to this than just coding, of course; CDI's Apps for Good³ project also looks at finding problems and designing solutions. It's probably easier to get started in app development on the Android platform, where MIT's App Inventor⁴ provides a building block based interface for the coding, familiar to any who've used Scratch – but Stencyl⁵ is cross platform and not that much harder to learn. Codea also has a gentler learning curve than Objective C, and runs on the iPad itself. It would be great to see teachers themselves developing a few apps using these tools, for their own classes and others. Apple provides a rather good 'Configurator' tool to help with class and school deployments; the usual filtering and logging of school internet traffic should 'allay parents' (and teachers') concerns over students' access to the net; and Apple's Volume Purchase Program now makes it a bit easier to purchase apps for a set of school owned devices. Technical issues aside, 1:1 access to tablets or smart phones provides both new opportunities and new challenges for teachers. Access to information, a tool for note taking and interactivity are easy enough to incorporate into lessons, but the real benefits of this technology demand pedagogies that promote creativity, collaborative working and independent learning.

ADDITIONAL RESOURCES

"STUDENTS ENGAGE WITH HAND-HELD DEVICES EVERYDAY AND INCREASINGLY, THIS IS BECOMING THEIR MAIN SOURCE FOR FINDING INFORMATION," SAYS ANTHONY COXON, CO-FOUNDER OF GCSEPOD. "BY EMBRACING THE TECHNOLOGY, IT IS NOW ALSO POSSIBLE TO UTILISE THEIR POPULARITY TO CREATE A VALUABLE LEARNING RESOURCE. THE GCSEPOD APP DOES JUST THAT, ALLOWING STUDENTS TO ACCESS TEACHER-WRITTEN, QUALITY AUDIO-VISUAL REVISION CONTENT ON-THE-GO. MORE THAN JUST A GENERAL EDUCATIONAL RESOURCE TO SUPPORT MOBILE LEARNING ACROSS '15 SUBJECTS,"