INSIGHTS

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The good and the bad of digital technology for kids

The jury is still out as to the educational benefits, or otherwise, of digital technology for children – and until a clearer picture emerges parental vigilance is paramount writes **Karen Fontaine**

Like moths to a flame, 21st-century children gravitate to touchscreen-enabled tablets and mobiles – so much so, that a study across Australia, New Zealand, the US and Britain found more two- to five-year-olds are able to manipulate apps than tie their shoelaces or ride a bike.

However, given the relative infancy of these devices – and hence a dearth of studies into the effects on children of their long-term use – it's becoming increasingly difficult for parents to decipher which apps stand to actually maximise their children's learning.

'We are still beginning to understand the possibilities that new technologies like iPads can have on experiences that engender learning for children,' says Dr Denise Chapman, a lecturer at Monash University and an early-childhood specialist for more than a decade in the US and Australia.

Dr Chapman points to research from Dr Jackie Marsh of the University of Sheffield, who said that 'these virtual worlds are fast becoming a part of the online landscape of play for young children and rather than dismiss them as irrelevant, or deride them as potentially harmful environments, academics and educators need to examine their affordances more closely in order to identify what children gain from their playful engagement in these worlds and how their experiences can be built upon in early years settings and schools'.

It is through play that children learn, Dr Chapman says, and iPads 'just happen to be a part of, and compatible with, children's play'.

Still, according to two surveys of US teachers released late last year, there is a widespread belief among teachers that students' constant use of digital technology is hampering their attention spans and ability to persevere in the face of challenging tasks.

Scholars who study the role of media in society say no long-term studies have been done that adequately show how – and if – student attention span has changed because of the use of digital technology. But, as *The New York Times* reported, 'there is mounting indirect evidence that constant use of technology can affect behaviour, particularly in developing brains, because of

heavy stimulation and rapid shifts in attention'.

Dr Jordy Kaufman, a senior research fellow at the Swinburne University of Technology, is looking into the effects of tablet use in 140 three- to seven-year-olds. He has found that tablet use has no negative effects on executive function, which is the cognitive ability to exercise control and manage tasks such as planning and problem solving.

He has also found that, for some children, touchscreens appear to motivate and enhance learning rather than hinder it. Dr Kaufman's results indicate that calm, creative activities on the touchscreen, such as painting, were similar to their 'real world' counterparts in that they 'do not seem to adversely affect children's behaviour or attention in the short term'.

Kristy Goodwin, director of www.everychancetolearn.com.au and a lecturer at Macquarie University, says her own research into the 150,000+ 'educational' apps available on iTunes found 72 per cent are aimed at toddlers and preschoolers, the majority of them promoting rote learning (a memorisation technique based on repetition).

However, she says iPads are not an ideal tool for rote learning and young children are better off using apps that stimulate creative expression, language development and problem solving.

'In an ideal world, parents should be using iPads to enhance their children's communication skills and opportunities for creativity,' Dr Goodwin says. 'When they are not being used as a digital babysitter or a digital pacifier, there is a lot of upside to using them in the right way.'

In her book *Screen Time*, journalist Lisa Guernsey lays out a framework – which she calls the three Cs – for thinking about media consumption: content, context, and your child. She poses a series of questions such as 'Do you think the content is appropriate?' and 'Is screen time a relatively small part of your child's interaction with you and the real world?', and she suggests tailoring your rules to the answers, child by child.

All apps are not created equal

'So many apps have been designed not by educators but by 20-something app developers and there is no real scrutiny (as to their educational benefits) before they are put in the educational category. All iTunes does is check for inappropriate language or links to inappropriate websites,' says Kristy Goodwin, director of www.everychancetolearn.com.au. 'That said, there are some fantastic apps and they can be the most amazing tools when used in developmentally appropriate ways.'

Here, Kristy lists her top five apps (as of August 2013):

1. **Toontastic** – 'This app comes highly recommended. It is a creative app that allows users to draw, animate and share their own cartoons through imaginative play. Press the record button, move characters onscreen, and record your narration! Toontastic will play back the animation and voice as a cartoon for users to share on ToonTube. Suitable for children aged 3+ years.'

2. **My Story-Book Maker** – 'This app allows young children the opportunity to create their own digital stories with ease. Students can draw their own pictures, take photos with the built-in camera and record their voice. The finished story can be emailed or uploaded online. This is a wonderful app to develop children's capacity to reflect. For example, it can be used to annotate and describe digital photos after a visit to the zoo or after a holiday. Suitable for 3- to 12-year-olds.'

3. **Play School Art Maker** – 'This free app is ideal for Australian children familiar with *Play School*. Using this app, students can create movies and drawings using Play School characters. This app supports creative play, social interaction and language development. Suitable for children aged 3 to 5 years.'

4. **Draw and Tell HD – by Duck Duck Moose** – 'This app allows children to create a digital artwork and simultaneously records their voice as they draw. Then it saves both the artwork as well as their verbal narration

to your device's photo album. All of the on-screen movement is captured as a short video with your child's voice narrating. Suitable for 3 to 8 year olds. An excellent app for developing creative expression and language skills.'

5. **Kids Flash Card Maker** – 'This creative app allows children (and parents) to make their own interactive flashcards. Insert your own photographs using your camera roll or camera app, record your own voice and videos as well. Suitable for children aged 3+ years. A great way to use this app is to create a 'morning routine' chart using the app and take photos and videos of children performing their daily tasks to get ready in the morning.'

Beware the 'pass-back effect'

You see it in cafes and shopping malls everywhere and now it has a name – the 'pass-back effect'. It's where parents hand their mobile device to their child to pacify, placate or simply please them.

Dr Joanne Orlando, a lecturer in education at the University of Western Sydney, is researching how apps contribute to children's learning. She wrote in *The Sydney Morning Herald* that giving a child a mobile phone every time you want them to be quiet can be 'as detrimental to their development as giving them a lolly each time they throw a tantrum'.

'Consistently demanding children disengage with the world around them and expecting them to be quiet all the time limits their opportunities to learn how to engage confidently with society,' Dr Orlando wrote. 'It teaches them that they are not important. They may be having fun using a device, but the message is subliminal. We should develop the skills of children to use mobile technologies as valuable learning tools. They are fast becoming a way of life for young people, and it's our responsibility to ensure that children use them in a way that helps them reach their potential.'