Paediatric OT and portable touch screens in early development – Should OTs be taking a tablet?

One of the common goals for Lothian's Communication Technology service (Keycomm), and the Paediatric OT service at the Sick Children's hospital in Edinburgh is to provide support for young children with complex disabilities to learn and develop through play. In Keycomm, I work predominantly with the under fives, or those at a very early developmental level, using technology and adapted or switch accessible toys to support access to play. I am increasingly aware how many children have regular access to touch screen devices. At home they may relax with youtube clips on Mum's ipad; While waiting for an appointment, they watch or listen to music on Dad's iphone; and almost every nursery/school has access to touch screen tablets, ipads or smart boards. Apple sold 3 million ipads in 3 days in 2012 and sales have continued to sore. There are a vast array of apps tailored for children, both with and without disabilities and many specifically geared to the interests and learning styles of children with conditions such as Autism Spectrum Disorders and Down Syndrome.

There is an ongoing debate at many levels about the impact of "screen time" on the youngest learners. In October 2013, the American Academy of Paediatrics' position statement, based on analysis of existing research, re-asserted that television and similar entertainment media should be avoided for children under 2. Key researchers like D Christakis (2009) support this with convincing arguments, concerned about the way in which television in particular is experienced as a passive, isolated activity for so many children. However, there is also support for the argument that video, television and touch screens (in particular) have potential for learning. There is admittedly little robust research in this area, but some studies have concluded that because the interaction required from the user of a touch screen device may enhance the potential for learning and may counteract at least some of the concerns around passive viewing e.g with a standard television. Stephenson and Limbrick (2013) have published a meta-analysis of studies with (mostly older) individuals with learning disabilities which may be of interest to readers.

There is little or no substitute for interpersonal play. However, we must accept that touch screens are part of everyday experience for even the youngest children. In my experience, considered use, facilitated by an adult play partner and requiring response and interaction from the child, has little potential for harm, and strong possibility for good. Certainly, OT's in our paediatric service and no doubt many others are embracing it, as we always do, with our analytic and pragmatic, solution focus. Asking the question "how can this tool help to achieve our goals?"

For learners at early developmental stages, touch screen "Apps" have advantages. The high contrast, movement rich, audio-visual mix seems to promote attention and concentration in children who are otherwise hard to engage. Apps certainly suit visual learners, including those with Autistic Spectrum disorder and the huge variety of free or almost free apps increases the chances of finding something that really captures the special interests of the child. Apps can reward simply making a sound (e.g. apps like "furry friend", sock puppets, Speak up*). For those who, perhaps with postural support, can control a reach or touch with even 2-3 fingers together on the screen there are visual and auditory rewards (apps like Electra*, imeba*, play piano and magic piano) and for children with the motor control to touch a target area, repeat a touch, swipe and drag a whole world of possibilities for learning and play are available. This seems particularly pertinent for those children whose access to a wider world of experience is restricted by illness or physical fragility.

There are of course drawbacks – touching over a larger surface area or "swiping" can unintentionally close the app or activate unwanted functions. However, guided access and other accessibility settings on ipads and iphones can help reduce these problems. An array of robust cases and screen protectors are now available too, thus avoiding very expensive accidents! The conclusion I have reached is that when the right apps are offered to any child they provide immediate and consistent feedback in a variety of forms (sound, colour, visual movement, etc), and are often very motivating, because, as one parent put it "they are just built to be great fun."

(*from Sensory App House),

Through discussion with many parents, educators, speech therapists and other OTs. I have compiled a list of apps for developing early interaction and touch screen skills. This is available on Keycomm's website at www.keycomm.weebly.com and is very much an evolving document with hyperlinks to (as far as possible) free apps. To promote goal centred use of apps, they are arranged in an approximately developmental sequence, starting with those that seem most effective at developing attention, then those for children who show desire to interact with the screen by making a sound or touching. Later apps encourage more precise touch, repeated touch, swiping and dragging. Currently the list also includes apps which develop skills for early writing/hand control and some fine motor skill apps for more advanced learners, but these may be re-located in their own advice sheets soon.

With such a multitude of apps available, including supporting daily living, social and behaviour skills, personal organisation, communication, etc, finding the right one for individual learning needs and preferences can seem a daunting task. Many apps seem to be marketed for a target audience, e.g. "for children with autism" but may be inappropriate for the age and stage of a particular child with that condition. It can be hard to find quality sources of unbiased, professionally qualified, pragmatic advice. I and colleagues have found Ian Bean to be an excellent UK authority on applying apps for early learners in special education. His website http://www.ianbean.co.uk/ has links to his facebook and twitter accounts which are very regularly updated with new ideas for apps, as well as lots of other ideas for using ICT with children with additional needs. In the US, Kate Ahern manages a very active blog at www.teachinglearnerswithmultipleneeds.blogspot.com/. This has links to so many other useful sources I feel obliged to give the warning to only open it when you have at least an hour to spare!!

Touch screen technologies are here (and there and everywhere!) to stay. I would love to inspire interest and an ongoing discussion about how we as a profession access and harness their potential across our diverse areas of practice.

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