iCan Communicate – how touch gives autism a voice

The debate about the use of digital technology in early years classrooms continues to polarise professionals. **Wendy Fidler** examines the case for augmentative assistive technology (AAT) for very young children and children with autism.

Early Years Study

In their study of 'multi-modal literacies' in the early years, researchers Flewitt and Wolfe (Open University, 2011) find that becoming 'literate' in today's world involves 'mastery of diverse practices and technical skills, along with the ability to adapt, improvise, identify relevant features in static and dynamic texts and to navigate around them'.

Reading on-screen is profoundly different to reading print. It involves the use and interpretation of multiple modes (images, sounds, movement, layout, spoken and written language), which appear in non-linear, hyperlinked formats with diverse possible pathways. "Supporting literacy learning in diverse media will enable all children achieve their full potential as members of a society in which knowledge and communication, in both traditional and new technologies, are highly prized."

iPad beside a child with autism boosts body-language skills and gives the autistic child a valuable opportunity to communicate.

Tam and Tao in Numberland

French-Canadian AMI-trained Montessori mum Valérie Touze is convinced that the best thing for any child is to attend a Montessori school and use the material as it was meant to be used.

However, Valérie – who designed the 'Tam and Tao in Numberland' Montessori app (see resources) – believes there are three reasons why quality apps using Montessori principles are a good thing:

- Most children today are exposed to technology - and they should be, as it is part of their world. Our app is designed so that it is fun and educational at the same time. We did not simply transpose the material onto the iPad, we integrated it in a

operate. There is a huge variety of inexpensive software already available and in development. Teachers can use the iPad to include:

- Personalising daily schedules and timelines
- Replacing PECS (Picture Exchange System) by combining verbal prompts with graphics

> **Many teachers and practitioners of children with learning difficulties such as autism have embraced the new technology and seen for themselves how it can really help.**

Autism

Children with autism usually have a narrow range of interests and need additional motivation to learn. Research and anecdotes concerning the iPad and iPod suggest that the devices grab autistic children's attention and motivate them. Many teachers and practitioners of children with learning difficulties such as autism have embraced the new technology and seen for themselves how it can really help.

For older children on the autistic spectrum low self esteem is the norm - and being seen as 'cool' can be a rare experience. Using augmentative assistive technology (AAT) such as iPads, can help students share social experiences. The chance to play on an

truly educational game;

- in most countries, Montessori is inaccessible to the majority because of the price of the tuition. By using some of the Montessori principles in conjunction with a modern tool like the iPad and offering apps at £1.19 we are opening up this incredible pedagogy to a wider audience;
- parents of children on the autistic spectrum all over the world say that they have been able to communicate with their child through the iPad like never before.

Building upon the iPad:

The iPad is an amazing tablet computer with a touch screen that is really easy for children with autism to

- Facilitating communication – pupils touch and image and it speaks their answer or request
- Personalising social graces by writing social stories to fit individual children's emotional needs
- Collecting data for assessment (time on task, motivation, attention, concentration)
- Personalising cultural lessons
- Personalising reading, writing and numeracy tasks.

iPad Social Stories:

Working one-to-one, teachers can help pupils to select pictures or upload photographs which tell stories in a step-by-step fashion, such as how to greet friends politely, how to choose an

activity from two or three choices, how to using the bathroom, how to ask for help, understanding body language and facial gestures – the type of social skills training which we typically practice in Montessori schools during the exercises of social grace and when individualising the grammar command cards.

When the pictures have been downloaded, the pupil reads his/her story into the iPad (or the teacher if the student is not verbal or capable). The stories are used as part of a regular schedule during the day, and the pupils are able to listen independently to the story whilst reading along.

Traditionally, Social Stories take up a lot of teacher-time. With the iPad pupils get the support they need, in a manner they can relate to, independently and without it being so obvious to others.

Conclusion:

Early Years: In the right hands touch technology can provide good scope for interaction and learning. For good quality pre-school and primary apps see Eric Carle (*The Very Hungry Caterpillar*) and Dr Seuss (*The Cat in the Hat*) in resources below.

Autism: The iPad can be an invaluable

Using augmentative assistive technology (AAT) such as iPads, can help students share social experiences.

tool for students with autism without taking up a lot of time learning how to use it. Its image-based interface fits in well with the strong visual skills most children on the autism spectrum possess. The touch screen technology is easily manipulated and makes intuitive sense. There is virtually no frustrating learning curve. It is easy to use - and it's seen as being cool. ■

Glossary:

Collaborative multimodal dialogue: the inter-subjective, multimodal meaning-making processes that occur through joint engagement in activity.

Resources:

Flewitt, R. and Wolfe, S. (2011) *Early literacy development in today's world: a multimodal perspective*, The Open University.

Plowman, L. (2011), *Young Children Learning with Toys and Technology at Home*, Economic and Social Research Council, 2008-2011

Some useful resources
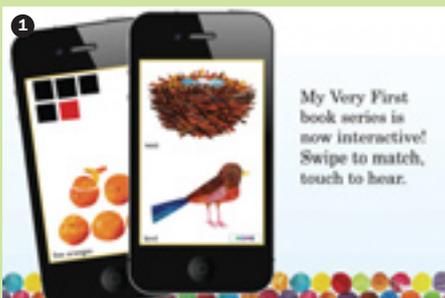
❶ **My Very First App**

iPhone, iPad, £1.19

Based on the beautiful artwork of Eric Carle (of The Very Hungry Caterpillar fame) My Very First App has three levels of difficulty. Easy involves matching colours to objects of the same colour, medium is a memory game where children turn over cards to pair colours, and hard combines the two, with a memory game where colours must match the objects. In six languages: narration and translation in Japanese, German, Dutch, Spanish, French and British (not USA) English. Reviewed by parent website www.babble.com, 'Pretty much everything Eric Carle produces is beloved by children across the world; no doubt this app will be too.'

The Cat in the Hat – Dr Seuss

iPhone, iPad, £2.39, Android, £2.51

Featuring all the original drawings and text from the classic book, plus zoom capabilities, background sound effects and a choice of 'read it myself' or 'read to me' settings. With the latter words are highlighted to match the narrator thereby increasing word recognition.
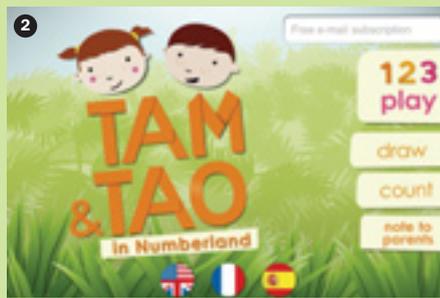
❷ **Tam and Tao in Numberland** (Montessori app)
http://itunes.apple.com/gb/app/tam-tao-in-numberland-hd-learn/id388154228?mt=8

❸ **iCommunicate:** Visual storyboard maker
http://itunes.apple.com/us/app/icommunicate/id320986580?mt=8

❹ **First Then Visual Schedule** *http://itunes.apple.com/us/app/first-then-visual-schedule/id355527801?mt=8*

Faces iMake: *http://itunes.apple.com/us/app/faces-imake-creative-craziness/id357230884?mt=8*

iWriteWords: *http://itunes.apple.com/us/app/iwritewords-handwriting-game/id307025309?mt=8*

whizzit123: *http://itunes.apple.com/us/app/whizzit-123/id323246993?mt=8*