

P5: THE IMPACT OF ICT ON CHILDREN WITH AUTISTIC SPECTRUM DISORDER

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Aim

The aim of this research was to discover what affect ICT, in particular the interactive whiteboard, would have on the child with Autistic Spectrum Disorder. Would the Autistic child benefit from using ICT or would it have a negative impact on a child who is normally uncommunicative and self-obsessed? Would ICT make the child introverted and hinder the development of the child's interpersonal skills?

Background: school, class and children

The Cape is in a deprived area of Smethwick. Most of the children do not speak English as a first language, most speaking in their first language exclusively at home. At least 25% of the children have some form of Special Needs – some academic, some behavioural. All of the children in the school need interactive lessons that stimulate and engage them as learners. I have previously taught children in Y3/4 and have only recently moved into Y1. I have an English and Special Needs degree and have been teaching for 4 years. I have a class of 25 children with varying degree of Special Needs and language difficulties. To begin with I had two children with Autism, but as the research progressed one child was returned to the reception unit, which meant that my research concentrated on one child.

Methods

It was necessary to have a clear understanding of the child's starting point when entering my class and some understanding of his needs and where he is on the Autistic Spectrum. So before I began my research I observed R and made notes of his attainment before we started introducing him to different aspects of ICT. As this was action research the methods of collecting data were mainly observations. I observed R over a period of two terms, and evaluated how he progressed using various techniques and software, using both the computer and the interactive whiteboard.

My year partner was also undertaking action research and she was a useful sounding block for ideas and opinions. Both of us were able to observe his reactions and discuss his attainment and what we thought was working well with him and what was not so successful.

I observed R and took photographic evidence and evaluated the ICT resources that we used with him. I evaluated the effect that they had on his progress and his enjoyment and ability to interact with the programmes and software. Most of the programmes that were used with R were self-authored by my colleague or myself.

What I discovered

As a Test Bed school all of the technology was new. The technology was being introduced to the children and its impact being evaluated on a day-to-day, lesson-by-lesson basis. Teachers were also building up a bank of resources as their skills and confidence grew, so R was being introduced to all the programmes and software slowly.

I try to use the interactive whiteboard in all of my lessons and thus attract and engage the learner, using sound and animation where appropriate to enable the children to interact and enjoy what they are watching as well as learn the concept being taught. I always consider the

best use of ICT for the particular lesson I am teaching, and ask how ICT can enhance what I want to teach. The resources that were used with R were not always effective and sometimes it took trial and error to enable R to gain the most from the programmes that were being authored.

The first programme that I introduced R to was a child-based art package. I introduced it as a whole class exercise inviting children to come to the whiteboard to add to the picture. This was a non-threatening way to get R to interact with the whiteboard and also helped the other children. R was reluctant to have a go at first, grunting when asked, but after some coaxing he touched the board with me guiding his finger. He then hesitantly touched the board and attempted to draw a man to add to our picture.

The next step was to let R use the computers independently. At first the only thing he attempted was lines and squiggles and there was nothing that you could define as a drawing, but it was obvious that R was enjoying it and was also interacting with his work in trying to explain what he was drawing. All of his actions were self-initiated and were a result of his enjoyment of the ICT technology. R was beginning to show some enthusiasm for working on the computer and was beginning to navigate his way around the computer and developing mouse control that enables him to draw pictures.

As a natural evolution of the Test Bed project, ICT applications were beginning to become an integrated part of teaching in Y1. R was becoming more interactive and was making very good progress. He was developing his fine motor skills, developing his own identity and interpersonal skills. One excellent example of this was his drawing of himself and a friend. He turned and said 'my friend' which was a breakthrough for these skills and a giant step forward for R. He enjoyed being part of the e-books we were making and quite readily would record his voice and enjoyed hearing it back. This was helping R with his social interaction – to realise he was someone unique with a unique voice thus helping him with his 'theory of mind' and understanding of 'self'.

R is interacting with his lessons. He enjoys the use of the interactive whiteboard and is inspired if there is ICT in the lesson. He is eager and attentive if the lesson includes electronic presentational resources, and has been heard to comment 'it's magic'. One complete breakthrough was the use of an electronic presentation to teach keywords in literacy. R was able to learn *all* of his keywords and happily go into the classroom and ask if he could touch the board and say his keywords and then listen to the teacher say them. His recent work on the computer is showing a great improvement and this seems to be having an effect on his behaviour – he is rarely disruptive.

Prior to the introduction of a range of technologies as part of the Test Bed project, R had displayed a sensory auditory imbalance and this could have made it difficult for him to access the ICT programmes that use sound. Most of the applications use sound and some of the games used quite lively music. Whenever possible R was encouraged to turn off the sound and this seemed to help him to concentrate and not to be distracted by the sound or to exacerbate his sensory problems. When working independently and using headphones R would withdraw into his own world and it was sometimes difficult to get him to work with a partner. As he got used to working on the computer and became more confident he began to be more comfortable to speak to others and try to discuss what he was doing. R was encouraged to work with a partner thus enabling him to develop his communication skills that are lacking in autistic children. My reading also highlighted concern that Autistic children have a profound abnormality of the neurological system and this means that they are unable to switch to different stimuli with ease. This points to the problems R was having focussing on the whiteboard that is dynamic and visual, and then having to concentrate on the teacher who is not giving a visual image for him to imagine in his mind. Hence that R may not be able to engage as successfully with the teacher so that he becomes bored switched off and does what

he can to amuse himself. Looking at the evidence it appears that R is also a visual learner, as are a lot of Autistic children. He engages with programmes that are visual and enjoys all the effect of electronic presentations. He is more able to learn abstract concepts if there is a visual image to assist his understanding. He found his keywords easier to learn using the white board because it used all of his senses. He touched the word, he saw the word, he heard the word and he said the word. Hence he could use all of his senses to help him make sense of what before was a difficult concept.

What Next

My research was limited to the study of one child. This was helpful because it enabled me to focus on his progress and his reactions to the ICT when it was introduced. Next, it would be interesting to undertake related research such as:

- Do other children on the Autistic Spectrum react and engage with ICT the same way?
- If ICT had such a profound effect on an Autistic child would it allow the 'disaffected' child to attain at the same pace?

What would the effects of ICT be on other children with Special Needs?