INTERACTIVE WHITEBOARDS IN THE PRIMARY CLASSROOM

According to a report published in 2008, 100% of primary schools have at least one Interactive whiteboard within the school (BECTA, 2008). There have been many studies showing the benefits of incorporating interactive whiteboards (IWBs) into primary classrooms. Although there are many benefits to using IWBs in primary schools, there can be issues and drawbacks to their use, particularly if they are over used. IWBs allow teachers to cater for a variety of different needs and learning styles and can be used to enhance the curriculum and deliver content in a more engaging way.

IWBs are touch-sensitive boards linked with a projector and a computer. Users, both children and teachers, can manipulate the computer display directly through the board. The boards contain pens that allow users to draw and write onto the display board. There are two main suppliers of IWB, Smart Technologies and Promethean. Both boards are similar in function and form; the main differences are the software that controls the inputs and the displays.

Interactive whiteboards allow children to be presented with information in ways that were not available with traditional black or whiteboards. This can mean that the children retain much more of the information presented. According to Dale's 'Cone of Experience' by simply reading information people are likely to remember just 10% of the text however by seeing and hearing information too this can be increased to 50% retention. This rises to 90% retention when children are engaged in physical activities. (Barber, Cooper, & Meeson, 2008, p. 47). Dale's Cone shows learning experiences moving from reading and hearing information at the top of the cone to simulating modelling and doing at the base of the cone. Activities further down the cone are more likely to be remembered by pupils. IWBs allow teachers to offer learning experiences and activities further down the cone, such as watching videos, hearing audio clips and demonstrations, thus allowing children to store more information.

The IWB allows children with different learning styles to learn. It is generally accepted that there are three styles of learning: auditory, visual and tactile, sometimes called kinaesthetic. IWBs allow teachers to deliver lessons that can touch all three styles:

> *"The board can accommodate different learning styles. Tactile learners can benefit from touching and marking at the board, audio learners can have the class discussion, visual learners can see what is taking place as it develops at the board"* (Bell, 2002)

Presentations can use a variety of media that teachers previously had not had access to within the classroom and as a result become more engaging and motivating for pupils (Barber, Cooper, & Meeson, 2008, p. 41). In their book, Barber *et al* suggest that IWBs allow teachers to prepare lessons "that resemble an almost cinematic experience" and that the technology "competed with the technology children encountered in their lives outside school". Children now have access to a vast range of information and communication technologies in their everyday lives and so it makes sense to exploit their technological awareness in the classroom.

In order to get the best results from an IWB, the children need to move from being passive learners to active learners. Miller *et al* (2005)suggest that there are three levels of IWB use: supported didactic, interactive and enhanced interactive. The teacher moves from using the IWB to illustrate the lesson to the teacher allowing pupils to manipulate objects on the IWB so the board becomes truly interactive and provides instant feedback to the pupils.

Teachers suggest that the IWB gives pupils with special educational needs (SEN), particularly attention deficit hyperactivity disorder (ADHD) and autism, a focus and can improve their attention (ICT Test Bed, 2005) yet the attainment of the pupils had yet to be shown to be raising. A 2007 report by BECTA states:

> *"Although use of an interactive whiteboard in whole-class teaching appears to have relatively little impact on raising the attainment of pupils with special educational needs (SEN), it has a marked impact in engaging their attention and often greatly improves their behaviour."* (BECTA, 2007)

However in another study by the Smarter Kids Foundation, children with SEN were given spelling tests, with and without the use of an IWB, and all students performed better when exposed to the IWB (Salinitri, Smith, & Clovis, 2002). Lee and Boyle (2003), quoted in Barber *et al* (2008), give an example of the IWBs features to model specific skills to pupils with SEN. Teachers used the recording function of the IWB to demonstrate handwriting, and this could then be played back to the children, at a slower speed, allowing them to practice letter formation.

Attainment of pupils when exposed to IWBs was measured in the 2007 report by BECTA. It showed that in both primary key stages attainment improved in science and mathematics, with lower achieving boys making as much as 7.5 months progress in KS2 science.

There appears to be less impact in the teaching of English, although the report does mention "further investigation with larger data sets is required". (BECTA, 2007)

There are, however, a number of potential issues with the use of IWBs in the primary classroom. There are the obvious drawbacks of cost to schools, both initial installation of the boards and any repairs and replacements that will inevitably be required. There are also practical issues that schools need to consider before installing IWBs in classrooms. The height of the board is crucial to pupils access to it. It needs to be mounted high enough so that everyone can see it and yet it also needs to be low enough so that all the boards features can be accessed by pupils (TechLearn, 2003). As with other technologies, it is liable to crash and suffer connectivity issues. Teachers will also need to periodically align the projector and board to ensure that the projected image maps to the desired inputs from the user.

IWBs have practical benefits for teachers as well as learners. Resources created can be saved for future use, as can the onscreen annotations made by the teacher and children. These files can also be shared reducing other teachers planning and preparation time. Teachers using IWBs are able deliver lessons that have a clear and logical order and have a higher pace than other lessons.

Teachers need to be trained in order to get the most effective use of the IWB. The training given by suppliers of IWBs often does not cover the pedagogical aspects of integrating the IWB into the curriculum (Anthony & Vincent, 2007, p. 2). Teachers with less confidence in using ICT find it more difficult to use the board effectively in the classroom.

In summary, primary teachers who are able to use an interactive whiteboard effectively are able to raise pupil attainment, increase child participation and engagement. The use of IWBs allows teachers to imbed ICT across the primary curriculum, where previously this has been hard to achieve.

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BIBLIOGRAPHY

Anthony, J., & Vincent, J. (2007). *Introducing interactive whiteboards into school practice: one school's model of teachers mentoring colleagues.* Retrieved February 10, 2010, from http://epotential.education.vic.gov.au/showcase/download.php?doc_id=651

Barber, D., Cooper, L., & Meeson, G. (2008). *Learning and Teaching with Interactive Whiteboards.* Exeter: Learning Matters.

BECTA. (2007). *Evaluation of the Primary Schools Whiteboard Expansion Project - Summary Report.* BECTA.

BECTA. (2008, July). *Harnessing Technology Schools Survey 2007: Analysis and key findings*. Retrieved February 10, 2010, from BECTA: http://partners.becta.org.uk/upload-dir/downloads/page_documents/research/ht_schools_survey07_key_findings.pdf

Bell, M. A. (2002, January). *Why Use an Interactive Whiteboard?* Retrieved February 4, 2010, from teachers.net: http://teachers.net/gazette/JAN02/mabell.html

ICT in learning and teaching. (2005). Retrieved February 7, 2010, from ICT Test Bed: http://www.evaluation.icttestbed.org.uk/learning/2005/findings/2

Miller, D., Glover, D., & Averis, D. (2005). *Developing Pedagogic Skills for the Use of the Interactive Whiteboard in Mathematics.* Keele: Keele University.

Salinitri, G., Smith, K., & Clovis, C. (2002). *The Aural Enabler: Creating a way for special needs kids to participate in the classroom lesson*. Retrieved February 7, 2010, from SMARTer Kids Foundation: http://smarterkids.org/research/paper12.asp

TechLearn. (2003, January 23). *Interactive Whiteboards in Education*. Retrieved February 7, 2010, from JISC: http://www.jisc.ac.uk/uploaded_documents/Interactivewhiteboards.pdf