Case Study Report

Title: Emerging Technologies at Aspendale Gardens Primary School

Topic: Interactive Whiteboards – an evaluation of the use, purpose and integration into class programs.

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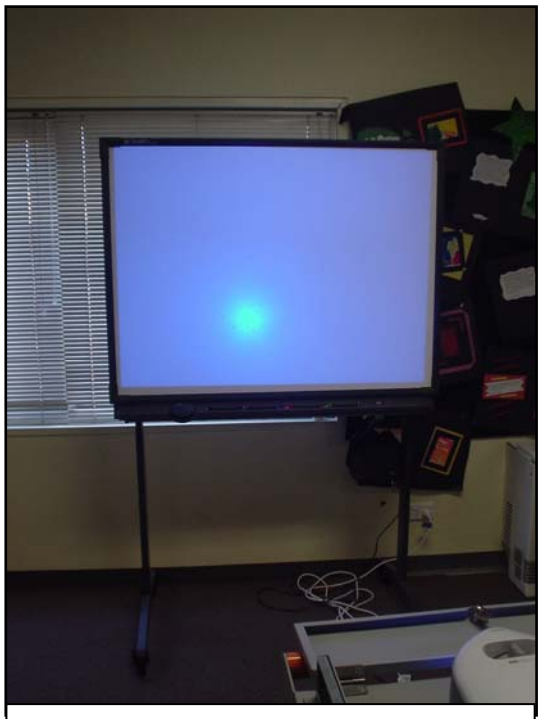
Purpose:
Our proposed study was to explore the use of an interactive whiteboard with different groups of learners and teachers. It was intended to trial the board with a level 1 class, a level 4 class and as an interactive tool for teacher training groups. Our initial study was to be in a classroom setting with a view to installing the boards in multiple locations in the school. An important aim was to integrate training with the whiteboard into the first CeLL unit on Digital Resources and other units as they arise, so to ensure curriculum integration of emerging technology is not just 'new toy' mentality.

Description of group involved in study
The project involved key staff members from levels 1 - 4 in our school who were interested in using the technology with classes. It also involved the trained CeLL mentors presenting these units as a professional development activity to other teachers.

Description of technology which was the focus of the pilot
We purchased a mobile multi media trolley. This has a space for a laptop. The digital projector is on the top and has a sliding cover for protection



We purchased a mobile, adjustable Smart board.

Detailed description of how pilot implementation, including analysis of how the technology

enhanced or contributed to the teaching and learning (or assessment, school management or communication beyond the school)

Term 2, 2005.

- During term two, a Smartboard was purchased and placed in the Library Computer area for to teachers to experiment with this. It was set up with the media trolley. The aim was to give time for teachers to explore the new technology and see how it could be used to complement and enhance their teaching programs.
- We trialled the Smartboard in a level 1 classroom and it was used as a teaching tool by the teacher in that room. While it was seen as a valuable tool by the teacher and the children were very engaged in the activities presented, there were problems with the hardware. The media trolley took up a lot of classroom space and in a level 1 class the movable board was easily knocked by children which meant it had to be constantly re-orientated. We decided that our current set up was not really suitable to have in a level 1 classroom.
- A team of six staff attended the IWB Net one day conference at Essendon & Penleigh Grammar in May. On the day we explored whiteboard use and set up in a variety of classrooms, looked at different types of Interactive Whiteboards and also attended professional development on programs that are enhanced by the use of the IWB.
- After this visit we considered our options and made the decision to keep the Smartboard in the Library Computer area. This had the added benefit of giving all staff accessibility to familiarise with the board. All Levels were encouraged and supported to use the Smartboard.

Part of the library showing the computers available for individuals to work on.

- During terms 2 and 3 the interactive whiteboard was also used during staff meetings and during the presentation of the CELL units: Enhancing Digital Content and Creation and Integrating ICT into the Curriculum. This was presented to teachers from this school and other nearby schools. Using the interactive whiteboard for CELL units was an excellent way to highlight the benefits of an interactive whiteboard. Participants could demonstrate their learning by easily moving the digital objects around. It was used to demonstrate how to navigate to sites while participants followed the instructions on their laptops and made navigation easier than following verbal instructions. Also its note - taking feature, where ideas were written, then turned into print using the text feature was invaluable for giving participants copies of their discussion during the unit.

Term 3 and 4, 2005

All grades are currently timetabled in the Library Computer Area. Our level 3's and 4's block a whole day and groups move through a range of activities. The interactive whiteboard was used in most lessons as a demonstration tool to model a task and then students interacted with it to model parts of the task. It was then used during student experimentation to show how they solved problems and during share time to show their work. Some of the findings by teacher surveys about the use of the interactive whiteboard are below.

Level 1 class

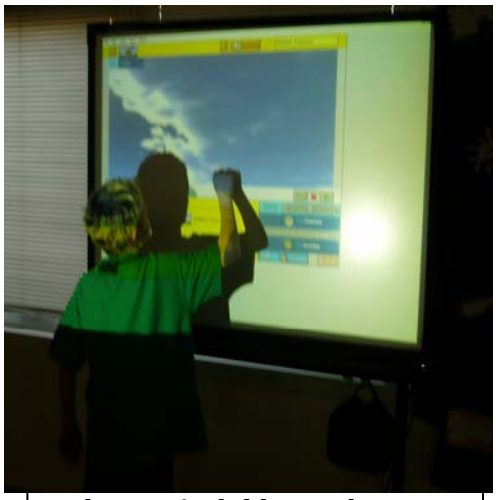
The Smartboard was used in a variety of ways. One way was as a whole class focus to introduce new computer concepts. Children were selected to demonstrate using the whiteboard. It was also used to demonstrate games on websites including Maths and English activities. The children were involved in completing the games. It was also used for small group activities with games and to develop handwriting skills. Software used included the Smart Notebook for handwriting and interactive writing. Paint & Kidpix to make mazes during maths and various other websites to reinforce maths/English concepts.

At this level the interactive whiteboard was found to be most effective for modelling during whole class activities and as a small group teaching tool. A quote by the teacher: 'I love its effectiveness in writing. The Smartboard forces children to slow down their writing process and concentrate more clearly on letter formation.' An added advantage in a level 1 class is that children who have not yet developed their skills in using a mouse, can use the Smartboard easily because they use their hands not the mouse.

Level 2, 3 and 4 classes

The Smartboard engaged children because it was novel. It was found to support ICT tasks. The main uses were to demonstrate new software and items on tool bars and teach functions in a variety of programs including Word, Powerpoint and Kahootz. The task was demonstrated and then it allowed student interaction using the IWB. A level 2 teacher involved with a Flight unit said, 'In Kahootz children learnt to add objects to worlds and they viewed the Flight Digital Learning Object. It also enabled children to be shown how to access and save items in the student server.' Accessing internet websites and internet research was also found to be beneficial. In the following photos children are using the Kahootz program.

Kahootz: A child is demonstrating to the class how to create keypoints to make an object move.



Kahootz: A child uses the Smartboard to find a missing object hidden in a world.

Teacher Professional Development

The Smartboard was used to present a variety of professional development to staff at Aspendale Gardens and staff from other schools. During these times it was used as a presentation tool. Teachers presenting found it easier to present PD to an audience because they do not have to work with the laptop which is often a distraction.

Presentations to Parents and School Council
The Smartboard was also used to present to these groups. In these times it was used as a presentation tool.

Advantages of using an interactive whiteboard in the ways outlined above:

- More access by a variety of staff.
- Increased engagement by students
- Easier to model and explore the functions of computer programs
- Increased interaction by children- they weren't just watching a teacher demonstration

Future Directions
After looking at use of the interactive whiteboard we have decided to investigate the installation of wall mounted interactive whiteboards in some of our double classrooms with roof mounted projectors. The double classrooms already exist and have 2 teachers team teaching. The advantage of this is that the technology is available to 50 children (2 classes) rather than 25. The classroom would also have a whiteboard for everyday use as well. (Good for when there is no power or a relief teacher who is unfamiliar with the technology).

We would encourage sharing of relevant resources by saving useful websites on the server in planned units of work. This already happens in some planners but it is now evident that this needs refining and the websites need to be saved under headings such as: Smartboard uses, Research sites, and Individual activity sites (games, drill and practice)

The use of these would then be monitored to gauge future installations in other team teaching classrooms. We would like to see the whiteboard utilised in all subject areas and with the children using it to show their learning.

We would keep the mobile board in the Library Computer area to be used by all classes and as a presentation tool.

What professional development was required to support the use of the technology?

- Attending the IWB Net Conference at Essendon & Penleigh Grammar by a team of teachers to explore whiteboard use and in classrooms. We also looked at ways in which the interactive whiteboard could be physically set up in classrooms.
- Demonstration of the use of the whiteboard during Cell module to some staff and to all staff during staff meeting times and professional development activities.
- Demonstration of features (especially Smart Notebook) by skilled operator.
- Teacher research of educational websites using interactive whiteboards.
- Teacher sharing of relevant internet sites.
- Time to explore the interactive whiteboard with others.

Issues which emerged around the use of the technology and possible solutions
The concept of a mobile board in a classroom is inappropriate because it is large and it can be hard to position the class so that all children can see. When a child is using the whiteboard it is often difficult for them to use the board without casting shadows on the board. It is also too low.
An adjustable height whiteboard is great in a shared space centre but not in a classroom.

Permanent fixing, while expensive saves on space and eliminate shadows on the board.
For a shared board with the multi media trolley, it would be great if there was a laptop assigned to it as it makes it easier to set up. However cost needs to be considered.
We need to link with other schools to see a range of uses and how the use can be integrated into all classroom activities

Analysis of whether the technology would enhance teaching and learning (or assessment, school management or communication beyond the school) across the whole school

From our findings we feel that the interactive whiteboard does enhance learning. It quickly engages children through its interactivity. We found that the board's visual impact was very beneficial for the children when explaining ideas. It was used extensively by many of the staff throughout all levels of the school.

As it was set up in the computer centre a majority of the uses was to support the ICT program but in a classroom setting teachers said they would use it for all subject areas. Teachers also successfully trialled its uses in English and Maths and found it an excellent tool especially when children could move objects around to show their learning.

An extra advantage is the fact that teachers and students could readily and easily access global resources by using websites. It was simple to move from a lesson to websites and back again without going from a computer to a board as in a traditional classroom set up.

The interactive whiteboard encouraged both teachers and students to teach using digital resources. Digital images could be quickly displayed, children's written work or 3D models could be photographed and then explained to the class and the internet was a readily accessible tool.

We noticed that initial use consisted of teachers using the board as a basic interactive whiteboard but as they become more familiar with it, there is a shift in their use. Teaching is becoming broader and we are beginning to see the use of other digital resources and the internet being used during lessons. Children started off as being viewers while the teacher demonstrated but now we have noticed a significant shift where there is more child interaction and demonstration of their learning and less teacher direction.

Related reading, URLs

www.iwb.net.au
www.abc.net.au/countusin/games.html
www.eddept.wa.edu.au/curriculumict/ideas-bank/ideas-bank-ec.htm
www.topmarks.co.uk/interactive.aspx (great site for early numeracy)
http://www.edcompass.smarttech.com/
http://www.promethean.co.uk/downloads/activities.htm
http://www.ict.oxon-lea.gov.uk/whiteboards.html
http://www.thereviewproject.org/
http://www.ictadvice.org.uk/index.php?section=te&catcode=as-pres_02