



HP solution brings variety and mobility to learning at St Hilda's

Overview

For today's school students, the so-called digital natives who have grown up with technology, the 'chalk and talk' approach alone no longer makes the grade. In order to properly equip school students with the analytical tools and skills they will need in later life, St Hilda's Anglican School is committed to integrating advanced technologies with the school curriculum in order to fully engage and educate students and prepare them for a productive future.

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Robin McKean is the deputy head of curriculum for the junior school at St Hilda's and, thanks to a Westfield Premier's Scholarship, has spent some time investigating how technology can be integrated with teaching pedagogies and meshed with the demands of the school curriculum in order to deliver a richer learning environment.

It was during an overseas field trip that McKean first saw schools integrating advanced technologies with the school curriculum. Students were provided with portable technology featuring embedded global positioning systems, and were able to engage with computers and access a rich library of multimedia content as they moved around. Tasks or questions were displayed on the hand-held computers and once successfully completed or answered, the students were directed to their next location where the on-board GPS triggered the next section of the application. These media-scape learning modules can feature audio, video, pictures or text content to deliver what McKean refers to as "augmented reality".

Having seen video evidence of this system demonstrated overseas, she returned to St Hilda's in Perth to implement a similar program. St Hilda's program was then designed to get students interested in learning; connecting peers, teachers and experts while providing a window into other cultures and perspectives. The multi-media could make the curriculum come alive and allow both teachers and students to explore content deeply. The program would utilise technology for information gathering, information searching, content sharing, knowledge refining, new knowledge building, promoting use of multiple intelligences; encouraging students to embrace technology; and aiming to create a level platform of knowledge which forms the foundation for future learning.

As a result, St Hilda's invested in a collection of 16 HP iPAQ handheld devices and started to collect and develop a library of applications (some developed by the

students themselves) that supported teachers and students at the school.

Now, students have become accustomed to using a variety of technologies, teachers are harnessing new technology, and student engagement and performance has improved.

Business Challenges

St Hilda's Principal Joy Shepherd had always trusted research, judgements and insights gained from observations in Europe, UK and Asia to improve learning environments and teach opportunities. So even before her study tour McKean had recognised that "teachers need to adapt their teaching methods to prepare students for advanced ways of learning outside the traditional classroom approach. Technology enables us to engage with content directly from the internet, a source of information that is going to be essential for children to be comfortable dealing with on a daily basis beyond their school years."

Despite the promise of the technology, the school understood that any applications had to mesh with the demands of the curriculum, and also be embraced by both teachers and students. The devices selected had to be reliable and robust, and easy to use.

Fortunately, there was little resistance to the new program with students and parents alike all extremely interested in the new technology and very supportive of the initiative. This eased pressure on the decision makers, St Hilda's IT committee comprising the Dean of Curriculum, Head of Junior School and an IT systems Manager.

How HP helped

HP iPAQs were selected, which were equipped with GPS, and the school began to seek out and develop applications to support the curriculum.

With a total K-12 population of around 1100 students, the 350 junior school students were the target users for the handheld devices, seeding an interest in technology that would hopefully sustain through their senior years. HP iPAQs have helped prepare students for future learning. The technology prevents St Hilda's from preparing learners for an era that no longer exists, by teaching them skills that won't get them far enough, fast enough, in an environment devoid of the things taken for granted outside of the classroom.

Inspired by her trip abroad, McKean's first foray into augmented reality learning environments involved creating an Antarctic media-scape initially for Year 5 students. The application turned the students into "cyber-sleuths". They used the HP iPAQ as a repository of Antarctic images, sounds, slideshows, documents and videos. As they successfully completed one portion of the program they were told to move to another location, where the GPS would trigger the next section of the application, creating a more immersive learning experience. Rounding out the experience were other group activities such as game boards and interactive web work using desktop PCs from HP.

Since then the HP iPAQs have been harnessed for a range of other learning applications, including an award winning Japanese language application. Japanese language students download Microsoft Word files in Japanese to the iPAQs, and use the stylus and touch-screen to trace over Japanese characters; a Japanese keyboard is also available. A Tokyo media-scape also runs on the iPAQs and students have used them to develop a Japanese language zoo based situational game, suitable for exchange students and children for whom English is a second language.

The school has also been using the HP iPAQs in its Early Learning Centre, a co-educational facility where students are using brain-gym applications to promote literacy and ease with technology. Activities available for pre-primary children include counting pictures, shape sequencing, alphabetical ordering, number work and so forth. Phonic software is also available to allow the iPAQs to be used as literacy support tools.

The GPS functionality of the devices has also been used to support the students' understanding of longitude and latitude in mapping, with students adding content which can be accessed by other groups of students as they followed a local heritage discovery trail.

While on campus the devices can be used to access the internet, via the school's wireless network located in the school library. The school has been experimenting with blogging and instant messaging, even though presently students are more interested in beaming documents to each other using the bluetooth functionality of the handheld devices and also developing their own games. When in the playground, connectivity is provided via GPS or Bluetooth.

In the future the school hopes to trial applications using RFID (Radio Frequency Identification) tags and beacons which would use radio frequencies. rather than GPS to trigger different sections of learning applications. St Hilda's is now using Mini notebooks as additional portable learning tool for students with 80 Mini notes to be rolled out for the 2009 school year.

Value delivered

McKean's work with the HP iPAQ program has earned her and colleague Raelene Beecher, a Microsoft Innovative Teachers Award in 2007 and the recognition of educational peers internationally. The Japanese learning approach has also earned the Language department and teacher Whittle Sensei a Microsoft Innovative Teacher award in 2008.

The HP iPAQs have helped bridge the digital divide by ensuring students are engaged by, and comfortable with, technology. According to McKean they help students think more sharply and aid concentration. She went on to say that with regard to technology the students "are not apprehensive about using anything new."

The iPAQs have also provided a professional learning development opportunity for

teachers who have worked with McKean and started to integrate the iPAQs, and different content, into lesson plans.

“The HP iPAQs have definitely improved learning, and the Japanese language students are excelling. It has boosted concentration, improved the functional skills of the pre-primary children and improved literacy. We had one child who was having difficulty with the mouse, but has had no problems taking to technology with the touch screen,” says McKean.

According to McKean, using the handheld devices has increased the functional skills of these younger students, improved their overall literacy and engagement with each other. On-board Bluetooth communications allow information to be shared among small groups of students, promoting collaboration. “The HP iPAQs have spiked the children’s interest in learning and given them all the same body of knowledge. Its also a fun way to learn and increases group learning”.

She believes that the system promotes multiple intelligence and sensory capabilities, which will be increasingly important as the St Hilda’s students progress to adulthood. By providing access to integrated technologies, situational game play, multi-user virtual environments and now augmented reality from a young age, she believes students will be better equipped with information interpretation, analysis and technology skills needed as they mature.

Summary

Industry: Education

Solution: The school purchased 10 HP iPAQ 6210 Travel Companions with GPS in 2006. Another six HP iPAQ 212 Pocket PC devices (with the GPS bundle) were added shortly after. All have since been upgraded with an additional 1 GB SD card.

Software: Windows Mobile 5 and ActiveSync to ensure the iPAQs could be synchronised with St Hilda’s desktop PCs. *Microsoft Office, Photostory, Declan Software* and *Create-a-escape* software have also been used to generate content for the HP iPAQs. A range of home grown and commercial learning applications are being used on the machines including *Antartic-escape; A Walk in the Atlas* for early childhood students; *Narnia* which comprises Year 5 student generated content; and *Christmas in Other Lands* targeted at Year 2 students.

Challenge: To engage students in learning; to develop and promote multiple intelligences; to bridge the digital divide by encouraging students to embrace technology; and to create a level platform of knowledge which forms the foundation for future learning.

Benefits: Student engagement and performance has improved, the digital divide is being bridged, and teachers are harnessing new technology.

About St Hilda’s Anglican School for Students: Located in Perth, Western Australia, St Hilda’s has around 1,100 students spread over two campuses. The junior school, which is located in the Chidley Campus in Mosman Park has 350 students. The school

also runs a co-educational Early Learning Centre. St Hilda's has a strong technology focus, and in 2008 opened a new Information and Technology Centre to support the use of technology in learning across the school. The school has an express policy to be at "the forefront of the technological revolution, ensuring the best for every student."

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