Kilvington: pushing educational boundaries in a knowledge-based world

Highlights

- A traditional school curriculum was transformed into one in which global access and communication were integrated into every aspect of the learning process.
- A creative and innovative environment attracts creative and innovative people, making the drive for improvement self-sustaining.
- Students are treated as partners in the learning process rather than simply 'instructed' – they are part of the innovative culture of the school, just like an innovative workforce.

In the early 1990s, as the personal computer became a ubiquitous business tool, many educators realised that computer skills would have to be incorporated into education.

As the internet emerged, many educators also realised it had enormous potential as a research and resource tool for students.

At Kilvington, a Baptist girls' school in the south-eastern Melbourne suburb of Ormond, principal Di Fleming and her team saw that the impact was far more fundamental: Just as information technology was transforming the workplace – and ultimately the basis of the modern economy – so it would transform education.

To be leaders in the new society, graduating students would need not just keyboard skills and a certified knowledge of certain basic operating systems, but a fundamental understanding of the way the emerging technologies could be harnessed to expand human potential in all its forms.

The personal computer changed the role of the learner. Students could now navigate, simulate, author, construct and exhibit their knowledge on-line. Students can now collaborate with peers worldwide and their audience is now global.

The new technology was not merely something to be incorporated for vocational training; it was a vehicle which could allow students of all ages and in all disciplines (arts and humanities as well as sciences) to reach new levels of achievement and comprehension. The new technology enabled students to go beyond the fundamental literacies. Today Access, Acquisition and Application are critical to their learning and their future.

It also made global access and communication a reality for ordinary students, equipping them for the challenges of a global economy.

When Di Fleming took up the role of Principal at Kilvington in 1993, she had already had some exposure to these ideas at her previous school, the Methodist Ladies College in Kew, which had been a leader in the extensive use of computers in schools.

Now however, there was an opportunity to apply this as a central philosophy, one that was integrated into every aspect of the school's programs. Kilvington is a digital school where the Middle School Elective program is construction-based: the girls are immersed in manufacturing, robotics, digital music composition, systems and technology.

Today Kilvington girls work in a learning environment that promotes the very life skills that are fundamental to commercial reality: creativity, imagination, problem solving, analysis, diagnosis, change management and team building.

The timing was in many ways fortuitous, for Kilvington itself was at a crossroads, with declining enrolments and a very traditional curriculum. The school Board had itself reached the view that a major change was necessary.

In interviews for the position Di Fleming put the view – in the form of 13 key agenda – that the widespread introduction of laptop computers was the catalyst that would transform education, at Kilvington and ultimately all across Australia.

In accepting her for the position, the Board embraced this philosophy and this program. And that was subsequently translated into solid support for its implementation.

The results have been spectacular. The achievements of both students and staff have captured international attention. Kilvington has soaring enrolments and the support of international businesses who see it as a true pioneer of a knowledge-based society.

In 1994, John Sabol, personal assistant to Microsoft President Bill Gates, visited Australia with a team of educators to look at the use of IT in education. That team selected Kilvington as one of three Australian schools to present to a global conference on education and technology.

Since then Di Fleming and Andrew Strooper, head of the junior school, have both been regular speakers at conferences in Australia, North America and Japan. Electronics giant Toshiba has become a supporter of the school and both Fleming and Strooper are regular speakers at international Toshiba-sponsored education forums.

Fleming and Strooper say that once the decision to totally embrace emerging technology was made, a lot of other innovations flowed.

One change, says Andrew Strooper, is the relationship between teacher and student. Technology is developing so fast that the teacher is no longer an all-knowing figure dispensing knowledge to students. Both teachers and students are continually exploring the possibilities and usages of technology. This creates a culture of continuous development -- a 'learning organisation' in contemporary business jargon. Indeed, this ability to learn is the key skill students will need as they enter an era of lifelong learning, driven by continual change.

When the decision to ‘go totally digital’ was first made, existing teachers were enlisted to help install the school’s Local Area Network for the IT system, ensuring that they had an understanding of how it functioned and a sense of involvement in the process. “We recognised that teachers had to embrace the concept if it was to succeed,” says Fleming.

No financial incentives were offered to teachers to upgrade their IT skills, but considerable thought was put into a three-level plan to build the ethos that would encourage this.

First, teachers were asked to shift their immediate focus from curriculum to computer literacy and its extension into all areas of learning. A mentor or buddy system was introduced, pairing those staff who were not computer literate with those with greater expertise. It was agreed that members of these teams could telephone each other at home any time up to 11 at night to discuss problems.

Second, staff were asked to elect one of their members to implement the project, co-ordinating the group’s selection of uniform software and other key decisions, such as who would be the first to receive laptops. The chosen teacher, Lyn Solley, in turn sought and got a commitment that when she brought questions to the principal, she would not leave the office without an answer. This made implementation a group function, not one imposed from above.

Third, all teachers were encouraged to explore all the potential of software. “As a learner, there is no fear of failure,” says Fleming, “and we became fearless learners.”

This attitude has proved infectious. Teachers grasped the potential of this new medium with enthusiasm and have – and still are – integrating it into the curriculum in ways that have won international attention.

A Kilvington-developed program called Cybersleuth uses the intellectual challenge of forensic crime-solving to encourage students to explore a range of scientific concepts.

The 20-week program enlists world-renowned forensic scientists and takes participants into the latest scientific research and thinking. It is demanding stuff, requiring students to develop a well-grounded base of scientific knowledge in order to tackle leading-edge issues like DNA analysis in a crime investigation.

“You need to respect the intelligence of students,” says Strooper.

“We call it Hard Play, making them push the boundaries all the time in areas like robotics or forensics or in designing futuristic concepts like cities in the sea. We don’t patronise them; they are expected to match real-world issues with advanced, real-world solutions.”

In the case of robotics, it is no abstract theoretical challenge. Students designed and built three robot figures, planning everything from the electronic operating circuits to the gearing required to make limbs move or to give stability and mobility. They also needed imagination to give each robot a ‘personality’.

Such challenges take the students into areas of electronics, engineering, creative design and practical metalwork – areas that once would have seemed far beyond the capacities of young teenagers. Yet these girls appear to thrive on the challenges and are constantly setting the bar higher. Indeed, their eagerness to 'stretch the envelope' is such that despite their pride in building the much-admired robots, they have been happy to cannibalise them for parts to use in new ventures.

It is not just science that enlists these skills. Student poetry and art are displayed on student-created web sites, encouraging the girls to again lift their sights to world-standard performance.

As a Baptist school, Kilvington also tries to ensure there is an ethical and moral dimension to education. And while 96 per cent of students now have their own laptop computers, every effort is made to ensure that those who do not can share with those who do.

Can an innovative environment be created?

Both Fleming and Strooper say yes, and point out that once the first decision was made to be innovative in the approach to technology, the momentum has grown.

Not only have existing teachers been huge contributors to the development of programs, but there is now a steady flow of high quality applicants for positions at the school.

"It is recognised that this is both an interesting place to work and a good career move. A lot of other schools now want to adopt similar approaches and teaching at Kilvington is considered a good stepping stone.

"This ensures an ongoing flow of progressive teachers to maintain the momentum.

Fleming stresses however that the role of CEO is crucial. "The CEO must demonstrate that he or she is equally keen to participate and learn, otherwise all you have got is a label, not an innovative culture."

At Kilvington, the momentum of that culture is now being reflected in diverse ways. The school has forged a range of strategic partnerships with business, ensuring that staff and students are exposed to contemporary international-standard technology and thinking. Partners include Toshiba, Festo and Rockwell International.

Neither Fleming nor Strooper appear concerned that their enthusiasm for articulating their experiences might undermine their competitive edge in the education market. On the contrary they are delighted at the prospect that more young people in more schools might have a chance to expand their potential through exposure to progressive learning methods. They are enthusiastic about comparing the experiences of other schools which are exploring the same path.

Nor do they have any doubts about maintaining the momentum of innovation, though they recognise that in the longer term this requires a structured approach.

To ensure there is no ossification of thinking, Kilvington has adopted a policy of ensuring that school council includes recent graduates. That is a concrete expression of faith not only in the quality of their students, but in a program of continual innovation and improvement.

Di Fleming was voted Telstra's Victorian Businesswoman of the Year for her efforts at Kilvington. It is an award she values, but says the real measure of success will be the number of her students who go on to fulfil their own enormous potential in whatever field of endeavour they choose.