

Girls' School Leads Laptop Revolution

The Age (Melbourne, Australia)

November 30, 1993 Tuesday

Late Edition

A Melbourne school is pushing the boundaries of educational development in a laptop experiment that could make traditional teaching methods redundant. *Peter Schumpeter reports.*

In what may be the world's most computer literate school, the Methodist Ladies' College in Kew, students are programming their own applications in an educational experiment that is turning heads here and abroad.

Dale, 13, sits in her year 7 class writing a full computer program that includes designing a mini-golf course. Under the program _ replete with graphics, animated figures and music _ a player can only "hit" a golf ball into a hole and avoid obstacles dotting the course by calculating precise algebraic equations. When a ball sinks into a hole `Mary Had A Little Lamb' beeps out on the laptop.

In a nearby year 8 classroom, Rebecca, also 13, is told to create a game of chance on her laptop. By the end of class, she has programmed and designed a poker machine that would be the envy of a Las Vegas casino boss. Her program tells the computer to give a player a jackpot of five points if five dollar signs flash across the screen simultaneously. Five grapes gets you four points. Five apples, three points. If you strike none of these, you lose two points. The "ting ting ting" of imaginary coins dropping into a tray rings out for each successful play.

At MLC, the state's biggest private girls' school, laptops are making traditional ways of teaching and learning redundant. According to the school's principal, David Loader, gone is the idea that a student is the passive receiver of knowledge provided by teachers and textbooks.

Nowadays, teachers and books often do not have the answers to problems, while students do.

"The change in the culture of the school has been fundamental," said Loader, principal since 1979. "I would now describe the school not so much as a place of teaching but as a learning community for both teachers and students. Now when I talk to a student, I can expect to learn something from her and she can expect to learn something from me. In fact, when you put the teacher and the student together, the chances are the student will know more about the laptop and how to operate it. For me personally, I've had to go back and learn to type, learn to understand computer programs, and learn to find out what I can do with them. I have a sense of rediscovery of the excitement of the learning process."

About 1200 of the school's 2200 students are now using their own laptops in all subjects from maths, sciences and business studies, to the humanities and arts. With the school having just signed with Toshiba to buy another 700 laptops next year, the MLC project is believed to be the biggest of its kind in the world. The machines have been introduced since 1989 into junior years five to eight. By 1995 it will be compulsory for each student (from preps to year 12) to have one. Parents can either lease a laptop from the school for \$600 a year (plus an initial \$425 deposit), or buy one from a dealer at a discounted price of about \$2400.

Loader said the MLC project _ the idea of an educational technology research unit, Sunrise Research Laboratories _ is charting the way for schools of the future. By instructing children from an early age to write their own computer programs _ rather than rely only on pre-packaged ones _ the project is expected to rapidly develop each child's learning skills and creativity. So far, the result has been a staggering range of unique solutions to the problems teachers are giving each girl.

The approach being employed at MLC is based on the theory of "constructionism" developed at the Massachusetts Institute of Technology in the United States. Constructionism encourages independent learning by students in a computer-rich environment. At MLC, this creative learning occurs largely through the use of the LOGO Writer software installed in the laptops. LOGO Writer is an open-ended program that allows students to program the computer whichever way they please. It is designed to nurture problem-solving by allowing students to take risks and experiment in a safe classroom environment.

In compiling a program on a laptop, a student does her own research into the topic, inserts this information into the computer, tells the laptop how to organise the information, and prepares graphics, animation, music and sound.

The laptops have made students more self-assured, more inclined to think laterally and more interested in learning, said Loader. "The conversation in the classroom among the girls is much more work-oriented than social-oriented. It's less about what happened last night or what they are doing tomorrow and more of 'Have a look at this, what have you done, how did you do that, why did you do that?'" "The laptops have made them much more confident. They feel part of the modern world and (feel) that they are coping and handling this modern world."

MLC's deputy head of junior school, Steva Costa agrees that the girls' self-esteem has been boosted. "There's a big change in the way they look at themselves. In giving each girl a machine worth \$2000-plus, the parents and teachers are telling them we believe they are mature and responsible young people."

Costa says students now interact more with each other and with teachers to solve problems.

"You get children who would in the past have had no reason to speak to each other, but now they are more apt to go and ask other students questions and explain to each other how they worked something. In most traditional classes a lot of this sort of cooperation isn't encouraged.

"The girls also have had to interact more with the teachers," Costa said. "The teacher is often the only one who can give them guidance as their parents usually don't know how to use the software in the laptops and can't help them. This has in turn created the opportunity for teachers to have much more to do with individual students, or small groups of them, than in the past."

The teachers, many of whom knew little of how to use the technology at the start of the project, have also had to learn to cooperate more with each other, according to Costa.

"The class teachers now work together more as a group than as individuals. The computer has made us more interdependent in the way we plan classes, and this has improved the way things are taught. Five or six heads put together can often come up with better ideas and methods of doing things than can just one person who seeks no help from his or her peers.

"The laptops have changed in an enormous way how we teach. We put a lot more work in the initial organisation of classes. In the past, if you taught for 15 years you knew how to do each lesson, so you didn't have to think real hard 'What am I going to do for this math, spelling or writing lesson?'. But using computers makes you stop, sit back and think 'Exactly what do I want to do and how do I think I should do it? What amount should be computer aided or done off the computer?'. You really have to consider many things which in the past you didn't have to," Costa said.

"As a teacher you're actually working much harder, but it's more challenging because I don't know what problems each student is going to come up with tomorrow that they want solved."

But while teachers provide less direct instruction and make no pretence at being all-knowing or infallible, they are still "the most important person in the classroom" for the student, Costa said.

"In the past we would have told students you have to do something in a particular way and that was the only way. Now we've opened up the boundaries a little bit and given the child more of an opportunity to decide for herself how a project or assignment will be presented or organised. The technology has allowed the kids to discover that they can solve problems in a variety of ways, and that often their way of doing something could be different from another student's _ but still right.

"But they still need the security of knowing how much they have to do and what they have to do. As teachers we still need to set the parameters and the expectations for them. We're still leading but not directing. We're guiding without forcefully channelling each child in certain directions."

Other private schools in Melbourne and interstate are beginning to implement similar laptop programs. Loader said that as well as raising the interest of educationists, overseas computer manufacturers have visited MLC to see at first hand how laptop technology

can be applied in a classroom setting. MLC, he said, is well ahead of schools in the United States and England in the application of laptops.

"There was a time when we used to say what happened in America and England will happen in Australia in 10 years time. We're now seeing a situation where what is happening in Australia will happen in America in a few years time. We're pushing the boundaries of educational development".

He cites a report on a school in Arizona publicising a "great new experiment" in which a classroom of students at the school has recently begun using laptops. "I want to write back to that school and say `Hey, that happened here five years ago and now there's not just a classroom of students using the laptop but more than a thousand'."