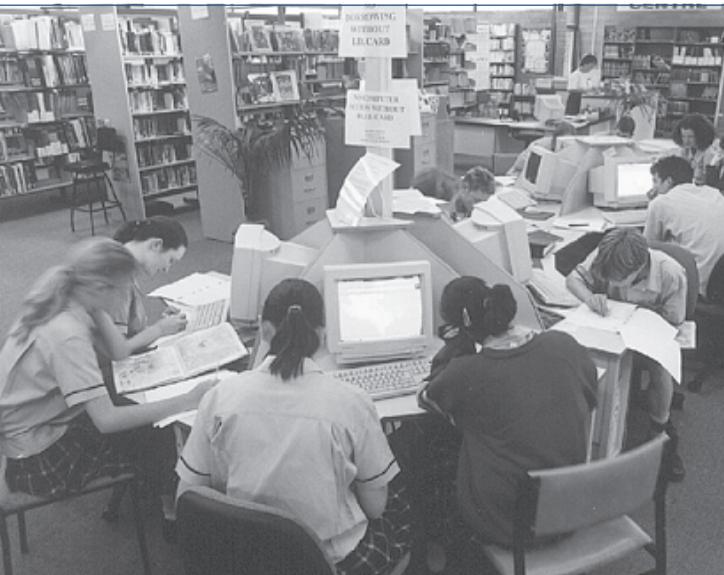


# ADOPTION OF TECHNOLOGY

## TO ENHANCE TEACHING, LEARNING AND MANAGEMENT



Queensland State Education 2010 confirmed parents want schools to prepare their children for the world of work, and that computer skills are an essential part of this world.

The School Opinion Survey found students' satisfaction with computer access was low but improved 3 per cent to 45 per cent in 1998; parent satisfaction was unchanged at 53 per cent. The proportion of year 7 students satisfied or very satisfied with computer skills learnt at school increased from 42 per cent to 52 per cent between 1997 and 1998. This remained the organisational goal with the lowest satisfaction, perhaps due in part to high expectations, as many students have their own computer at home.

Education Queensland made major advances during the year in improving its information technology services. *Schooling 2001*, a three-year initiative to improve facilities and skills, provided \$30.3 million for computers, maintenance, software and teacher training.

### Planning

In terms of information technology, a statewide review found that Education Queensland is on a par with other States and ranks highly by international standards. However, it found those standards are rapidly rising, and significant improvements are needed in local area networks, teacher skills, technical support and the application of computers to teaching.

Most schools completed a management and learning technology plan, setting directions for purchasing, training and management, and for the use of information technology in teaching.

### Teaching and curriculum

Most schools focused on integrating technology into all curriculum areas. Teachers are gradually adapting their teaching practices to incorporate this new potential.

Strategies used by schools to reinforce this focus include using computers in a variety of ways to enhance the learning and teaching process, such as:

- *'a tool (using word processors, spreadsheets and databases)*
- *an artistic outlet (creating pictures and slide shows)*
- *research purposes (using the internet, CD-ROM reference materials and library automation)*
- *educational software for drill practice (tables, spelling, reading and science)*
- *creating multimedia presentations (Hyperstudio, Kid Pix)*
- *a communication tool (students participated in a travel buddy project)'*

*(Blenheim State School)*

*'Our information technology policy has been successfully embraced for the teaching of English, mathematics, science, technology, languages, arts, health and physical education, and studies of society and environment. During the year:*

- *every year 9 student completed at least one unit of study which incorporated significant IT*
- *every year 8 student studied Basic Computer Operations (a nationally recognised course)*
- *many specialist subjects incorporated IT as a normal teaching medium in years 8 to 12'*

*(Nambour State High School)*

Students with a severe disability used specialised keyboards, software and communication devices.

A 1998 national survey of information technology skills of students found that 93 per cent of Education Queensland year 7 and year 10 students had basic skills, and while 23 per cent had all of the thirteen advanced skills, in both cases similar to the national average.

The number of student enrolments in computer subjects in year 12 grew slightly from 7833 to 8007, while the

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numbers in year 11 were significantly greater (8723). In addition, sixty-eight students began traineeships in information technology.

## Hardware

Education Queensland schools gained another 4000 computers.

Connect-Ed, one of the biggest linked-computer networks in the southern hemisphere, extended the departmental network from 597 to 1304 schools (including sixty-four linked by satellite), at a cost of \$45 million. A further \$13 million was also spent to install network starter kits in over 500 schools. A 1998 national survey found that Queensland schools had more fast computers and fewer obsolete computers than other States.

## Software

Schools increased their investment in educational software. Queensland had the highest percentage of schools in Australia using business and accounting software. An online database provided thousands of reviews of curriculum software and relevant Internet sites.

The school management system improved procedures for schools to track student attendance and achievement, and the quality of student reports to parents. New finance software for staff was introduced in all (other than very small) schools.

All administration software systems were assessed for year 2000 compliance, resulting in upgrades to many systems. Nearly \$2 million was spent to upgrade the standard office environment for desktop computers and their networks in the central and district offices, to ensure compliance. The overall position of Education Queensland is well above average in comparison with other departments. There remain, however, two outstanding areas — the human resources management system and some building systems and services — both of which will be attended to in the final part of 1999.

## Internet

Internet capability was extended to all schools. Teachers made more use of the Internet for lesson preparation, contact with teachers in other schools, and contact with students at home. The number of teachers with email

addresses at school grew eightfold to 81 per cent. Email traffic grew twenty-twofold and web surfing eightfold. The number of schools that have created their own web page increased from 236 to 376.

*'A school for the new millennium — Mitchelton High School displayed its dominance in technology education with another win in the student project category of the Queensland IT&T awards for excellence. In what is believed to be a world first, students at Mitchelton High School use an unexplored approach to data collection using the Internet. Students conduct authentic data investigations into online student generated problems and questions.'*

*(Australian Internet Awards 1998 citation)*

## Staff skills

There was a significant increase in the IT skill levels of teachers. Over three thousand teachers achieved the minimum standards for information technology. A 1998 survey found nearly all Education Queensland teachers had the basic skills to use computers, more than half had many advanced skills, and they were generally more skilled than their non-state school counterparts. Many teachers were less skilled than many students, but teachers were more skilled than students in Internet use, especially searching the web.

Over \$9 million has been spent to train teachers, with all teachers to be trained to at least the minimum competencies by the end of 2001.

Schools appointed more computer technicians and support officers. Fifty-three systems technicians (an increase of seventeen) supported schools from central and district offices. Seventy school-based staff attended a network administrators' course.

## Outlook

- *Schooling 2001* will provide \$23.5 million for computer enhancement, maintenance and software, and professional development of teachers. This will support further expansion in the number of computers and local area networks in schools.
- A network starter kit will be in use in every school by June 2001.
- Classes will be provided via the Internet to year 11 and 12 students in twenty-three rural schools.