THE NEXT DECADE
A DISCUSSION ABOUT THE FUTURE OF QUEENSLAND STATE SCHOOLS

ABSTRACT

The purpose of this document was to promote widespread discussion about the future of public education in Queensland in order to provide a long-term direction for our schools and the education system. The project focused on these fundamental considerations for 2010 and beyond:

• What will students need to learn?
• What will teachers’ work be like?
• What will schools do?
• What will non-school sites do to add value?
The next decade

A discussion about the future of Queensland state schools
Queensland state schools are an investment by the public in the future. Our schools affect the lives we live, the society we live in, and the wealth and wellbeing of Queenslanders.

With 460,000 students enrolled, nearly three-quarters of the school-age children in Queensland are learning what they need to grow to adulthood in state schools. This represents an investment of almost three billion dollars a year - nearly a quarter of the State Government’s budget.

Forty thousand children started Year 1 in state schools this year. They will reach Year 12 in the year 2010. Their experience of school education will be a powerful one that will shape their future, and the future of the society in which they will live.

They will acquire a sense of themselves, the communities they are part of and their place in the world. They will acquire the skills, attitudes and knowledge they will need for a successful working life. The basis of their future relationships and social and aesthetic aspirations will be established.

The world they are preparing for will not be the same as the world facing today’s Year 12 students. Economic, social and technological changes are transforming every aspect of the world, and the society in which they will live. The context for their education is already different.

In the interests of our students and our community, we should carefully consider how we manage the Government’s investment. What are we trying to achieve through our schools? What is the fundamental purpose of our students’ education? What sort of life opportunities do we want them to have?

While review and reform are not new to Education Queensland, they have dealt in recent years with the structure of the department or the content and structure of curriculum. The implications of major social, economic and technological trends have remained largely unexplored. The basic purpose of education has been assumed. It is time to think critically about the nature and purpose of education.

This publication is intended to promote a thorough discussion about this. What future should we be pursuing for Queensland state schools? What steps do we have to take during the next ten years to build the best environment to educate children in 2010 and beyond?

The central aspect of education - the point at which learning takes place - is undoubtedly the relationship between teachers and their students. Teachers are the frontline: they deliver education (whatever its purpose) through their relationship with students, with parents and with the community. The rest of us - in the
numerous support roles in schools, districts and in central office - should be adding value to their work. I hope this realisation shapes our discussions.

There will be many opportunities for people who work in Education Queensland, students, parents, communities, and those with an interest in what our schools achieve, to contribute their views. I invite you to take the time to consider the matters raised here and become part of the discussions.

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This paper is a basis for discussion and is not a statement of policy. It sets out views assembled to assist discussion, preliminary to advising Government on a strategy for public education. Therefore the views in this paper carry no particular endorsement by Government.
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What this paper is about

Defining the challenge

Between 1986 and 1996, the proportion of young Queenslanders attending state schools has declined from nearly 77% to just over 72.5%. A range of factors influences parents’ choice to send their children to private schools. It is, in part, a result of policies on the part of some governments to promote competition, by shifting resources as student enrolments shift.

Diagram 1 shows this decline. Although Queensland continues to have an enrolment share higher than the national average, the rate of decline in Queensland is also faster.

![Diagram 1: Enrolment share for state schools 1991-97](image)

Source: ABS, Schools Australia, Catalogue No. 4221.0

In the last three decades, the trend in the number of students completing 12 years of education has varied. From 1972, the number climbed, peaking in 1993. As the youth labour market collapsed, work was hard to find and more students continued at school. Governments had policies and strategies in place to encourage students to complete 12 years of school. Since 1992, however, the apparent retention rate has declined from a high of 85% to a low of 76.3% in all schools. For state schools, the equivalent figures are from 82.1% to 69.7%.

The impact of the Commonwealth Youth Allowance, which requires young people under 18 to participate in education or training if not employed, may lead to an increase in retention rates. Initial indications are that students returning to school or continuing as a consequence of the Allowance need assistance with literacy, numeracy, counselling and vocational education.

Diagram 2 shows retention trends for both government and non-government schools. Diagram 3 shows the rates for male and female students.
Diagram 2: Apparent retention rates: government and non-government schools: 1972-97

Source: ABS, Schools Australia, Catalogue No. 4221.0

Diagram 3: Apparent retentions rates for all Queensland students: 1972-97

Source: ABS, Schools Australia, Catalogue No. 4221.0
The chances of a student successfully completing 12 years of school vary across the State. As diagram 4 shows, students in regional Queensland have less chance of completing 12 years than their counterparts in the metropolitan area. In rural and remote areas, retention rates are even lower. Although the data is indicative only, the apparent retention rates for indigenous students are even lower.

Diagram 4: Apparent retention rates to Year 12 in Queensland’s statistical divisions for state schools

Source: ABS, Schools Australia, Catalogue No. 4221.0

The tragedy of this is that it has occurred as the compelling evidence mounts that people who have completed Year 12 (compared with those who leave school early) have on average:

- higher levels of employment
- higher average salaries
- lower levels of unemployment
- shorter periods of time in unemployment (if they do become unemployed)
- lower levels of incarceration in prisons
- better health,

and they are more likely to participate in post-school education or training.
The value and contribution of the public education system to the democratic structure of government in Queensland and to the Queensland notion of ‘a fair go for all’ are being seriously challenged by the decline in the enrolment share of government schools and the declining retention rate. Queensland has traditionally offered all people the means to improve their standard of living and to achieve social mobility through an education system in which there is an equitable sharing of resources and a guarantee of opportunity. This is in danger of disappearing for many, trapping children in poverty.

These trends must be reversed before they entrench greater disparities of wealth and social dislocation in our State.

At the same time, we are facing enormous change unleashed by the rapid entry of Australia into the global marketplace and the advent of the revolution in digital information technology. Responding to these changes so that the benefits from them are available equally to everyone is challenging enough. We need to concentrate on this task and ensure that the public education system does not become a resource-starved system of last-resort education - one that cannot equip students for the 21st century.

How people benefit from these changes will largely depend on how well schools prepare students for the future. Students will need a broad education that gives them the values, attitudes and skills needed to handle new types of work and a more complex social world, so they can shape and participate in a safe, prosperous and tolerant society.

**Finding an answer**

The key questions that need answers are:

- what do we want schools to be like in 2010?
- what will teachers’ work be like in 2010?
- how will learning occur?
- what support will schools need from district offices and central office?

Many schools have launched their own innovative reforms in response to the opportunities and threats they see facing them. Many of these reforms have worked in spite of the system. It is now time for the system to respond.

We can do so by first looking at the powerful forces for change that are shaping the new millennium: a more diverse and complex society, the changing nature of work, the possibilities and threats of new technology, the impact of exposure to competitive international markets, the changing expectations of government. These are matters that will change the purpose of schooling. If we do not find the right responses to these forces, then the benefits of change will not materialise: the disadvantages will not be countered.
We can then look at worthwhile current trends in schools and the issues that schools face in providing a quality educational service to students. What barriers to ‘doing a good job’ do schools experience?

How we deal with the issues that face schools, and the impact of change on them, depends on what purpose we see for public education. We must clearly identify the value to society of public education.

The outcome from this process - the answers to the questions if you like - should be a clear statement on the purpose we agree for Queensland schools. It will be a strategy statement that outlines:

- where we want to be
- why we want to be there
- how we get there
- how we know when we have arrived.

Such a strategy will provide:

- better future outcomes for students
- better connections between the different operational areas of Education Queensland, so they can add value to the work of teachers
- a better basis for decisions about the future
- the ability to manage change in the public interest
- a public education system with the characteristics we want.
Forces for change

Public education is made by a human response to the issues a society sees as important to solve. It can be and is reshaped to solve new problems. Is the way it is being remade now the right way to accommodate the changes occurring and the problems we face? We need to find the right response to the forces of change impacting on our schools.

Changes in public education

As we approach the new century, the long established, consensual view of public education as a public good that sustains social justice, community and the public interest, is under threat. It is giving way to a concept of public education as a safety net for those who, in an age of competition and social hierarchy determined by wealth, can't pay extra. Supporters of this view would argue that this is a consequence of the impact of global markets.

The meaning of public education has also been blurred. A high proportion of the operating costs of some non-government schools is paid from public funds. Funding based on whether schools can attract students is engendering competition. A simple definition that 'public education is paid for by government in the public interest' is no longer meaningful.

How government-owned schools present their value to parents and students is now critical. Traditionally, they have done so by being clearly committed to equity, democratic values and a high level of commitment and service to their local community. How well these traditional benefits appeal to parents in an environment buffeted by global markets and focused on competition and how much parents can afford to pay is a question of key importance for the system.

The public education system must also cater for young people and children who do not fit readily into school environments, for example, children with high behavioural support needs. There is a responsibility for the public education system to meet the needs of all young people.

There can be no return to a mythical 'golden age' of public education in response to these threats. It is not possible to pretend that markets do not exist and that competition is not occurring. Similarly, it is wrong to rail against 'narrow vocational education' when the future job prospects of students in the knowledge economy are so important.

The challenge is to build a state school system that serves the diverse needs of all sections of 'the public' and that forms a network supporting learning communities and a learning society. Schools need to sustain a curriculum that is general and vocational, virtual and face to face and global and local. As the system seeks to meet the needs of all comers, individual schools may have to consider innovative ways of differentiating their curriculum to suit the community they serve.
Some questions for discussion

- What characteristics of state schools make them an attractive option for students and parents?
- What changes to state schools would encourage students to complete 12 years of school? What changes would need to be made as a consequence of all students staying to complete Year 12?
- What do you expect students to gain from their experience of school? What options are there to provide distinctive experiences for students within the state system?
- What services should be provided for those students who prematurely exit the system due to high behavioural support needs?
- What can be done for the more capable students so that they are fully extended?

Changes in the distribution of wealth

Queensland school children who live in poverty (some commentators say as many as a quarter) tend to score poorly on basic literacy and numeracy tests in primary school, leave school early and perform badly in end-of-school results.

Their experience of school is different. School children living in poverty may not have had the breadth of social and cultural experience that allows them a confident relationship with the learning process in schools. There is often a negative bias against them in curriculum and teaching practices. This is particularly so for indigenous students living in poverty.

Schooling can do something about this through improved curriculum, teaching and community-based initiatives.

The issue here is, as Michael Raper from the Australian Council of Social Services puts it,

“The rich are getting richer, and while the poor haven’t got poorer, they have become more numerous.”
The tax system is making this worse. Australians on a third of average male earnings paid no tax in 1977-78 but paid on average 10.9% of their income as tax in 1996-97. The tax paid by those earning eight times average male earnings fell from 53.6% of their income in 1977-78 to 43.7% in 1996-97.

The main program in Queensland helping schools deal with poverty has been the Special Programs School Scheme (SPSS). Its strength has been a focus on the need for whole school change and improved school-community relationships. There is now a renewed focus on poor literacy as a cause of poverty and much debate about the best way to improve literacy levels.

Yet state schools are gaining an increasing proportion of their students from poor families. This is resulting from a steady increase in the number of poor students attending school, as well as the declining proportion (relative to non-government schools) of students attending state schools. The problems facing classroom teachers will increase if adequate approaches to dealing with the consequences of poverty are not in place.

**Some questions for discussion**

- How should teachers and schools go about the task of maximising the life chances of all students?
- What role can schools play in overcoming the disadvantages faced by students from poor families?

**Changes in our culture, society and families**

Although poverty is perhaps the fundamental social issue that schools have to deal with, changes to families and the increasing complexity and sophistication of students present schools with additional challenges.

The family not only provides the economic unit to support children as they grow up, but also supports the child's formal learning and offers opportunities for informal learning. When schools and teachers are forming partnerships to monitor the development of their students, they turn first to the students' families.

In the 1950s and 1960s, the trend in family life was away from the traditional extended family toward the 'nuclear', two-parent family, usually with the mother at home caring for the children.

Now, fewer than 70% of all school children live in nuclear families. Twenty percent of school students live in one-parent families. Another 8% live in blended families of some description. The remainder live in group households or with parents and their same sex partners. An increasing number of teenagers live apart from their parents. Just over 67% of the mothers of school-age children are now in the workforce. Families are smaller. And they move more often.

Schools face:

- greater complexity in forming a learning partnership with parents and involving them in the life of the school
- an increasing proportion of school students with learning difficulties or behavioural difficulties, and increasing demand for out-of-school hours child care
- increased mobility of families and an increasing rate at which children change schools
- the need to accommodate less traditional views of the family unit in the learning process and the life of the school.

As well, schools are often caught in the middle of child custody disputes and child abuse investigations.

Schools are often asked to undertake social training, such as suicide prevention. Many teachers feel they are becoming more social worker than teacher. Yet their first duty is to student learning and they are criticised if student outcomes are perceived to be poor.

The student population is becoming more culturally diverse. Children from non-English-speaking backgrounds make up about 6% of school students. Increasing numbers of students are from Asia. Aboriginal and Torres Strait Islander students comprise another 5%. A significant percentage of students from non-English-speaking backgrounds are themselves (or are from families) seeking refuge from world trouble spots, and, not infrequently, are dealing with traumas such as torture or loss. These percentages are expected to grow over the next decade.

Students from different cultures bring different religious traditions, food tastes, sporting interests and patterns of behaviour, which schools need to accommodate. In return, they can broaden other students’ understanding of languages, cultures, and geography.

The responsibility to induct students, and often their families, into a harmonious learning environment falls to schools. So too does the responsibility to teach them English and an understanding of Australian culture. Racism and tolerance have to be managed. These tasks are not without financial and emotional costs.

Broader technologically and globally driven changes to our culture also affect schools. Perhaps the most pervasive if not the most profound is the impact of television. For young people, television is one of the most significant socialising agents. Television (and increasingly the Internet) provides an ever wider range of similar products. An illusion of variety hides the reality of sameness: more and more channels offering the relatively narrow range of values and ideas that can attract a mass audience in the United States.

The global penetration of this culture is deep. The price of a Big Mac is used by The Economist magazine to determine a country’s currency purchasing power. The more marketable US sporting heroes like Michael Jordan are more recognisable than domestic sporting heroes. The pursuit of material success, the necessity of competition that produces 'winners' and 'losers', the use of violence to resolve differences, the replacement of genuine interaction with cliches, are all themes that have started as topics for US entertainment and are becoming integrated into Australian society. Many in our society believe that the values which lie behind these messages are not the basis for social cohesion and mutual respect in the future.
Schools are increasingly expected to respond directly to these social trends. Often, parents create this expectation of schools because of the difficulty parents face in countering this new culture. Some are now debating the value of creating benchmarks for social outcomes. These are generally defined as 'the benefits that are shared by society at large', such as 'school students’ attitudes about themselves (self-confidence and self-esteem), their optimism, respect for others, social competence, awareness and appreciation of social conventions, motivation, respect for learning and attitudes to lifelong learning'.

Although most of us would strongly support these attributes in students, it is harsh indeed to hold schools accountable for these types of social outcomes. This is especially so given the willingness in other areas of Australian life to welcome a culture with global sources that negates the very outcomes for young people we still value.

Some questions for discussion

- How can schools and teachers contribute to solving broader social problems such as intolerance and problems experienced by individual students?
- What should be done to limit the possibility of students becoming academic or social casualties of schooling?
- In what ways should schools work with other government and community services in the interests of their students?
- What is the value added to the educational experience of students by cultural diversity among the student population, and by a broad socioeconomic mix of students?

Technological changes

The second half of the twentieth century has seen explosive growth in communications and information technologies. The ability to record and transmit information in digital form makes video, graphics, music and text interchangeable and accessible almost anywhere at any time. The sophistication of data storage, retrieval and manipulation by computers, the speed of data transmission to almost any part of the world and the rapid decline in the real costs of these operations combine to change national economies, cultures and patterns of work.

Any revolution results in winners and losers. Many manufacturing jobs in Western economies have disappeared, relocated to lower wage countries. Banking and the work of people employed in it have been transformed. National governments have less control over their economies in an environment of globalised financial markets and supranational corporations. At the same time, new jobs are being created that demand ‘knowledge workers’ for the information economy.

- IBM claim that a typical digital watch today has as much computing power as was available in the world in 1961. In the 25 years from 1971 to 1996 since the first
silicon chip was created, computing performance improved 25,000 times. The top speed of microprocessors is doubling every 18 months.

- Until recently, this explosive growth in computing power was not matched by our communication power - the ability to transmit data at high speed. But the 1 to 2 gigabits per second capacity of current optic cables is more than 10,000 times greater than copper wire, and rates of 80 gigabits per second are being achieved in the laboratory.

Communications and information technologies are already transforming education. Teachers go online to discuss issues with colleagues and to download lesson plans. Students access information, visit places of interest around the country and the world, and use university libraries to do research. Parents contact teachers by voice mail or email. Technology enhances practices that already occur in schools. Technology has the potential to transform the way learning occurs – in schools and through lifelong learning.

But there are some fundamental questions to be asked. If technology is changing the world, is it the world we want for our children? And if we don't invest heavily in the ability of people to manage the outcomes of technological change, will we be able to control the process of change?

**Changes in work**

Technology is one of the factors that are creating new ways of working.

- 'Virtual operations' that team the best available people (regardless of their location or association) dramatically lower costs, improve quality and speed up processes.

- For example, the Boeing 777 virtual design team shared computer-designed models around the world to eliminate traditional and costly prototyping.

- At Hewlett Packard, a global design team has been able to work 22 out of every 24 hours by flowing work through time zones.

- By 2005, a quarter of all companies expect that more than 50% of their office space will be set aside to support team activity rather than individuals.

In Australia, as elsewhere in the developed economies, jobs have shifted (and will continue to shift) from traditional areas of employment such as agriculture, resources, manufacturing and other goods-based industries to communications and knowledge-based industries. Diagrams 7 and 8 illustrate these changes which particularly affect those workers with skills attuned to the requirements of traditional industries and young people and older workers who have a more tenuous attachment to the labour market. High unemployment and increasing inequality in earnings make change even more difficult for society to manage.
As the industries providing jobs have changed, so too have the nature of the labour market, the nature of work, and what is required from the worker.

The labour market is being transformed through:

Source: OECD International Sectoral Database.

Source: ABS, Catalogue No. 5206.0 & 8125
- a large rise in the proportion of women in the workforce
- an increase in the proportion of the labour force who are part-time or casual
- a shift towards employment in small and medium sized enterprises and self-employment
- increases in the proportion of professional and skilled jobs and a decrease in unskilled jobs
- decreases in primary and manufacturing employment and an increase in service employment
- an increase in the level of qualifications needed, and higher skill levels.

Queensland has the highest percentage of casual employment in Australia and a lower percentage of more sought after non-standard jobs (such as permanent part-time) than the Australian average. Diagram 9 shows the situation for States in 1990 and 1998.

Large-scale mass production, with rigid job delineation and hierarchical management, is being replaced by organisational styles that emphasise innovation, small teams, autonomy and multi-skilling.
In the next ten years, the labour market will change further. The norm will increasingly be ‘portfolio careers’, where people change career direction several times in their working life, moving between employment, self-employment and unemployment. This will require people to manage and shape their own careers. Some take the view that the concept of a job will disappear, to be replaced by ‘work’. Access to work will depend on the individual’s interpersonal skills, skill at networking and project management, and the ability to organise a flexible life and career.

The term ‘knowledge worker’ has been coined to describe this phenomenon. As one commentator argues ‘The job as we know it will cease to exist. It is obsolete to think of an occupation as a regular set of duties, regular hours and a fixed place in an organisation structure ... the action today is all about forming effective teams and building alliances.’ ¹

Many in the workforce are no longer in conventional full-time jobs. The disappearing jobs are being replaced by individuals hired for particular tasks – individuals who think of themselves as a one-person business with expert skill in a particular or niche area, which they trade within a networked employment market.

Globalisation - the ‘knowledge economy’

All these changes are interrelated and each reinforces the impact of the others in our lives. One way of describing these interactions is the concept of globalisation.

Firms and countries are increasingly interdependent because of the increase in trade, the rise of direct investment by foreign companies and the development of multinational enterprises. Information technology has accentuated this.

- To understand the growing importance of ‘knowledge’ to the economy, take the humble pencil. One hundred years ago, its price was primarily based on the cost of the lead and wood (the raw materials) that went into it. Today, it is based on the costs of design, the knowledge embedded in the high tech machines that make it, on consumer research, marketing, packaging, advertising, warehousing, distribution and retailing.

- Another example: enterprises often value their intellectual capital more highly than they do their physical assets.

Knowledge is at the core of economic development. Innovation (the ability to create, diffuse and manage knowledge) has been estimated to account for 50% of long-term economic growth in advanced industrial countries. More research is being carried out in many more disciplines than ever before. Diagram 10 shows the estimated knowledge composition of the world’s manufactured exports.

¹ Walter Keichel cited in “Who are the Teachers of the Future?” Professor Headley Beare
Workers increasingly need the skills to:

- research, select and efficiently use existing knowledge and discard irrelevant knowledge
- recognise patterns in information
- interpret and decode information as well as learn new and forget old skills
- create new knowledge.

There is a need to challenge old ways of learning, and of distributing and using knowledge. The process of learning is more than just acquiring formal education. In the knowledge-based economy, learning by doing is paramount. Education, training and learning will need to be in non-formal settings, such as workplaces. All organisations where learning takes place, whether they be schools or enterprises, will need to be increasingly aware of the need to become learning organisations, continuously adapting management, organisation and skills to accommodate new knowledge and technologies.
In this context, some argue that education is increasingly seen as the formation of human capital.

The education systems of industrial economies are being remade to match the economic environment. Education plays a crucial role in maintaining international competitiveness. High levels of education allow workers to move into new industries more easily, helping to address unemployment and encourage the development of new industries. For established firms, a well-qualified workforce is more flexible and innovative, allowing companies to produce high quality goods and services, rapidly adjust work processes and pursue continual product innovation.

The more skilled workers a firm employs, the cheaper will be the process of innovation; the more research and development it undertakes, the more profitable it will be, and the larger will be its market share. At the same time, the workers’ return on their skills will be higher.

The alternative is a ‘low skill, bad job’ trap, with a cycle of low productivity, deficient education and deficient job skills, reducing the capacity to compete effectively for skill-intensive work opportunities. ‘Bad jobs’ have low wages and little opportunity to accumulate new skills.

Firms will be less likely to expand production capacity and purchase more technologically advanced equipment if there are skills shortages.

A major challenge for the future is to work out the balance between education directed at the formation of human capital and education directed at developing human potential and social outcomes. However, the economic health of the State is, in part, dependent on the qualifications of its people. Diagram 11 shows this: the higher a State’s post-compulsory education profile, the higher the Gross State Product per employed person.
To prosper in the labour market of the future, workers will need new skills that enable them to work across conventional boundaries and see connections between processes, functions and disciplines; and, in particular, to manage the learning that will support their careers.

**Some Questions for Discussion**

- How should schools alter the learning process, their curriculum and the way learning is managed to prepare students for work in the next century?
- How do we make the transition to an environment where students ‘learn to learn’?

How do we respond?

How we approach the challenges posed by the forces of change will largely determine the quality of life Queenslanders enjoy in the future. There are many issues for schools to resolve. They should be considered in the context of what globalisation will mean for this State.

'Globalisation' as an economic and social phenomenon is generally held to include:

- the expansion of financial flows across national borders, and the effect of this on currencies and national monetary policy
- the globalisation of production and the ensuing expansion of world trade
- the growing uniformity of institutional and regulatory frameworks in all countries
- the increasing tendency of some countries to be ‘better off’ because of changed production patterns.

Successful experience of 12 years of school for Queensland children is a prerequisite for a successful response by Queensland to the challenges of globalisation.

Challenges for Queensland

For Queensland, globalisation poses two fundamental questions:

- what type of economic structure does Queensland need to sustain and enhance the productivity and living standards of its people?
- what types of skills will be needed for Queenslanders to adapt to rapid and less predictable change?

Historically, Queensland's prosperity has been founded on commodities, particularly agriculture and mining. The competitive pressure on these industries is intense. It will intensify further as they are forced to reduce production costs, introduce advanced technology and increase productivity sharply to remain competitive.

Queensland is relatively well placed to use knowledge to upgrade traditional industries, and to export high value goods and services associated with these industries. There is also a need to develop new industries, by building on the current new technology areas of the environment (including energy), transportation, information and communication technology, genetics and biotechnology, advanced manufacturing and new materials.

How well is Queensland placed to meet the challenge? On the positive side, Queensland:
- has a strong knowledge base, relative to the size of its population, in terms of the proportion of individuals with university qualifications (the Queensland university profile is at the Australian level, which is ranked fifth in the OECD)

- has many competitive industries, not only in agriculture and mining but in the service sector, and in some niches in manufacturing

- has already undertaken a substantial process of adjustment of both industry structure and of economic institutions and attitudes

- has a record of rapid uptake of new technologies and is in a strong position to embrace the online economy

- can benefit from its use of the English language, the language of the global knowledge economy, and from its proximity to Asian–Pacific markets.

On the negative side:

- rapid adjustment over the past two decades has meant that the State has limited productive capacity in some areas of industrial activity

- adjustment for firms and government agencies has largely focused on efficiency measures with less attention given to the retraining and redevelopment of people

- Queensland could still attract a greater share of foreign direct investment characteristic of the period of globalisation, especially for the creation of new productive capacity

- there is considerable correlation between OECD countries' post-compulsory qualification profile, their level of national productivity and many innovation indicators. Queensland's post-compulsory educational qualification profile is below the Australian average, which itself ranks poorly in the OECD (fifteenth) and is projected to slip even further if not addressed.

**Challenges for Queensland schools**

Many of these pressures for change are already obvious to teachers and parents. Changes are already evident in many schools and classrooms.

Public debate suggests that the current model of schooling may more appropriately belong to earlier in the twentieth century. It was developed to educate the masses for work in the industrial era. More importantly, it belongs to a print-based culture in which knowledge is owned by those who can access the books in which it is recorded. Learning is controlled and organised by teachers. Success is examined and certified by teachers, testing an individual's ability to retain certain knowledge and sometimes the ability to apply that knowledge. Classroom structures,
timetabled lessons, content-based instruction and classes organised sequentially by age are features of the print-based school.

The relevance of this model in the next century needs to be critically examined.

**INFORMATION TECHNOLOGY**

At present, schools, homes and workplaces function separately. They are connected by geography and circumstance, but far less often by common purpose and collaborative action. Digital technologies can interweave schools, workplaces, homes, libraries, museums and social services to reintegrate education into the fabric of the community. Time, place, and age will no longer be the factors that define learning for most people. Learning will become a pervasive activity that continues throughout life and is supported by all segments of the community. Teaching will no longer be the transfer of information, learning no longer the retention of facts and education no longer the exclusive responsibility of teachers.

As these changes occur, the danger of increasing the disadvantage of communities and individuals who do not have the resources to facilitate ready access to new technology should be avoided.

Information technology is changing not only the way students access information but also the way they learn. Literacy now means digital as well as print skills. Schools are becoming places where students learn rather than places where teachers teach. Formal teaching continues but the emphasis has shifted. Learning will still lead to clearly documented outcomes held up against benchmarks. It will not become haphazard.

There are both sceptics and advocates for this perspective. But consider the following points drawn from work by Professor Headley Beare, based on observations of realities that already exist in some parts of the Australian school experience.

- If children can access school at any time, and the school facilities are available for an extended day, then the 9-to-3 school day disappears.

- Traditional classrooms may be redesigned to provide for small-group learning, routine access to information (libraries, databanks and computers) and flexible time for learning.

- Schools may devote time and effort to assist parents to ensure that informal learning complements the students’ formal learning program.

- Major national and international education centres are now providing educational packages or modules online 24 hours a day across national and international boundaries.

- Teachers may need a notebook computer to allow them to manage the individual work programs of students. Many assessment tasks and examinations are computer based and computer scored. End-of-year examinations are becoming obsolete as progress can be continuously and
regularly monitored and tested, and routinely accredited. In some other States, ‘salary packaging’ has been utilised to enable teachers to purchase notebook computers.

- Schools are relaying their learning program online across the country, operating as schools without borders.

However, the influence of technology will be more pervasive than the observations above suggest.

Currently, the emphasis in schools is still on individual learning and performance. Students access books, notes and computers and sometimes they undertake group activity, but they are judged on their solo performance in tests and assignments. The curriculum is divided neatly into subjects, taught in units of time arranged sequentially by grade and controlled by standardised tests.

This model of schooling belongs to a past era, when a production economy demanded graduates who could read, write, perform simple calculations and take directions from supervisors.

The knowledge economy, however, is making different demands on our students and schools. Jobs are disappearing. Workers are moving into the roles of problem identifiers, problem solvers and strategic brokers. They work in small teams in varying projects. They produce reports, models and multimedia productions. They succeed at work if they are original, clever and provide solutions to problems.

To work in this environment, students need to equip themselves with a variety of tools to search and sort vast amounts of information, generate new data, analyse, interpret meaning and transform it into something new. They must be able to see how their work fits into a larger picture and assess the consequences of change. They will need the capacity to work with others to develop plans, broker consensus, communicate ideas, give credit to others, solicit help and generate joint products.

This is not to say that schools at present do not teach these skills. Many teachers are aware of their importance and actively seeking to build them through a diversity of school experiences. But it is to say that they are becoming more important than ever before, and must become an integral part of schooling for every student.

Some commentators suggest that:

- the ‘classroom’ may be located anywhere - in the home, at a ‘remote unit’, or in the traditional classroom

- the teacher will become the manager of the curriculum at the ‘school’ level, making decisions about student needs, teaching / learning methods, resources and assessment

- the ‘school’ will be accessible at all times.
Schools may not be transformed as fundamentally as this, but different futures need to be explored so schools and the system can prepare themselves to address change in a purposeful way. Schools and teachers cannot shoulder the responsibility of meeting this challenge alone.

**QUESTION FOR DISCUSSION**

- What sort of assistance do schools and teachers need to take full advantage of the new communication and information technology in the learning process? What are the barriers to greater use? What educational problems can be solved with new technology?

**The work of teachers**

The teacher has many roles: tutor, instructor, mentor, learning theorist, curriculum planner and expert, assessor, curriculum writer, assignment marker, editor, and student counselor. Anywhere else in the workforce, individuals would be combining such a complex range of functions by working in teams and specialising. It is difficult to undertake all these diverse roles and continue to do them well. It could be wellnigh impossible if teachers are to learn the new skills required by technology and a new teaching and learning paradigm.

Yet this is exactly what is required. What then are the implications for teachers and their work?

Few other occupational groups are as well credentialled as teachers are now. In the space of a few short decades, teachers have moved from being a certificated service to being a graduate service. This change has occurred as technology, new production methods, the emergence of a more highly educated workforce and the internationalisation of the economy have diminished the proportion of the workforce employed in factories and in industrial manufacturing. Higher qualifications are the prerequisites for guaranteed, satisfying employment.

Teaching has similarly moved on from a model that reflected the style of work organisation in the industrial economy. Teaching has become a profession and the nature of teachers’ work and work practices is reflecting that.

As a consequence, there has been a move away from standardised practices towards personalised, individual service, which acknowledges the needs of the students – flexibility to meet the needs of students and professional service delivery.

Teaching is being profoundly affected by the globalisation of information, advances in technology and communications, the acceleration of knowledge production and the speed with which it is sent around the world, the compression of time and space in the knowledge industries and the irrelevance of geography. Independent access to knowledge challenges the claims of teachers to specialist and unique expertise.

In short, teachers have become knowledge workers. To provide a relevant service to students, and one that will fit them for the next century, it seems teachers will
have to teach themselves the new skills first, and then learn how to apply them to teaching and learning.

Examples of new work methods already abound in education. Work placement coordinators in VET clusters, specialist teachers and teacher aides all work in new ways and under different circumstances. Specialist services such as police and social workers are locating in some schools. Teachers need to think how they will respond to this and maintain the characteristics of committed educationalists. They also need to recognise that there is no going back to the past, that this is the new nature of their work, and that change will be even more advanced by the time their current students begin working.

The key questions for teachers are:

- what prior knowledge or learning do we expect the teacher to have in this area before they may teach?
- what skills, and at what level, must the teacher have before they may teach?
- how will their skills be maintained so that their teaching remains relevant to the needs of students?

The answers today to these questions are very different to the answers when most Queensland teachers did their initial teacher training. The answers must also recognise that the nature of teaching rests on a long-term commitment to public education and to the profession. It will be difficult to preserve this in the face of the changes to the nature of work discussed here.

Professionalism involves a high level of self-management. Ongoing learning and career development are inextricably intertwined. Every knowledge worker undertakes learning programs that are career conscious, targeted to skills and involve specialised in-depth study.

Teachers are no different. In the industrial economy, the aging of equipment meant depreciation and eventual replacement. In the knowledge economy, our investment in people improves the more they use information and their skills. There is increased value from investing in people, not depreciation.

Teachers need to consider how they intend to address the transformation. For many teachers, as well as for their equivalents in other industries, this is already a reality.

**Questions for discussion**

- Teachers already have many different roles. What alternatives are there to the 'subject specialist' and 'one teacher per class' models that would make teaching and learning more effective?
- How do teachers make the transition to the professional attributes of 'knowledge workers' while retaining their
current high commitment to educational values and student welfare and success?

Community

The consequences of the rapid globalisation of the Australian economy and the rapid advances in technology are being visited on local communities. This is particularly so in regional Queensland and in isolated rural communities. The role of the community (and the part that the school plays in it) in nurturing children as they learn and grow to adulthood has never been more important.

Schools are a community-owned asset. They can be a focal point for community development and activity. In many small communities, they are one of the few remaining services.

These days the ideas of enjoying a safe, supported childhood, of acquiring an understanding of place and identity, and of learning what you need in order to have a rewarding life, are increasingly threatened. Schools need the active involvement of their communities and parents to ‘do the best’ by students. Community ownership of the future of children, resulting in them finding jobs and becoming active citizens, is essential.

There are many good examples of partnerships in the interest of students. Most vocational programs for students in Years 11 and 12 rely on work placements organised with local employers and community representatives. Many schools enrich their curriculum by using community facilities and the broader resources available through parents and other adults, who can provide positive role models, values and information.

Questions for Discussion

• How can schools fulfil their role as a community asset, particularly in regions affected by globalisation and social change?

• What models of community involvement have helped:
  - young people make the transition from school to work
  - develop learning communities?

Teaching and learning

Many of the topics discussed in this paper ultimately concern teaching and learning. It is the fundamental role of schools, and it rests squarely on the relationship between teachers and students.

The magnitude of the changes outlined in this paper clearly calls for a new paradigm for teaching and learning. The frustration and difficulty that school teachers face today is that the new paradigm often proves elusive and there's not too much time available to go looking for it!
The following may well be elements of this new paradigm.

**A SHIFT FROM CONTENT TO PROCESS DRIVEN LEARNING**

Teachers need to be able to help students learn to learn. Students must develop the enthusiasm and skills to become lifelong learners, to become independent workers and learners, and to become effective users of technology. This is not to say that content does not matter - it is a question of emphasis.

**BUILD STUDENT’S RELATIONSHIPS WITH SIGNIFICANT ADULTS**

Teachers need to recognise that learning outcomes are closely related to the relationship between students and significant adults. These adults will not always be teachers. Schools may seek to integrate a broader role, previously the province of families or churches, into the organisation of learning in the school.

**GREATER REGARD FOR LIFE EXPERIENCES**

Teachers need to have a greater appreciation of the impact of socioeconomic circumstance on learning and the effects of an influx of students into school with broad experience of life enriched by technology, world travel, better educated parents and greater access to information and popular culture.

**REDEFINING THE BASICS**

Computer literacy has now been added to the Three R’s. But the basics for future work may also include networking, problem solving, critical evaluation of data and other skills of post-industrial society and the knowledge economy.

**RE-EXAMINATION OF THE EIGHT KEY LEARNING AREAS**

Teachers need to evaluate the relevance of the eight key learning areas in the new paradigm and consider what the transition to emerging disciplines involves.

These matters go to the nuts and bolts of the current paradigm. They call into question traditional classroom organisation, how spaces are designed and used for learning, and the traditional roles of teachers.

A fundamental question that we need to face up to is whether schools will continue to be the main site for education.

If we define education in a narrow, instrumental way, that is, as instruction in low level skills, then those skills can be delivered in a more flexible and individually responsive way to students. For example, in their own homes, or through the Internet.
But this is a very narrow view of what schools do. It ignores the social interactions and personal development that have always been central to a good education, and will be much more so in the future.

Schools and school systems have to ask how they can ‘add value’ and make what they offer more attractive than narrow instrumental training. This process needs to start by accepting the challenges created by a complex and changing environment. These challenges demand that people have a range of competencies integrated in a ‘rounded’ individual.

The essential competencies for the future move beyond the skills and subjects that currently determine the structure of much schooling. They include communication, teamwork, information literacy, innovation, personal integrity and flexibility. Teachers, and school communities, need to ask how current curriculum planning and delivery arrangements provide these competencies.

The attitudes and personal attributes on which these competencies are based can be developed only by experience in real-life situations. But providing such experiences challenges many of the ways we still deliver curriculum. It also challenges the way teachers work.

Innovation encourages a non-didactic approach to curriculum and pedagogy. It supports approaches that involve the negotiation of curriculum between teachers and students.

Innovation also calls for a more democratic approach to the organisation of schooling, and challenges current mechanisms of control used in many schools. There may not be systemic answers to many of these issues. Rather, different schools will develop diverse approaches and different visions of effective pedagogy to meet their local needs. Those for whom innovation brings success will increasingly be recognised and rewarded as exemplars of best practice in education.

Among the many issues that schools will have to face and which underpin innovation are:

- greater responsiveness to individual student needs
- flexible staffing and timetabling arrangements
- the recognition and valuing of diversity.

At present, we are experiencing a profound shift in the nature of the environment in which schools operate. Periods of fundamental change involve a degree of uncertainty. This encourages innovation. For schools, the heart of innovation is what is learnt, and ways of learning.

**Questions for Discussion**

- What changes can be made in schools to increase the flexibility they have to respond to the individual needs of
students? What changes in teaching and learning are already evident from the pressures of new technology and the changing economic and social environment?

- What support from the district and central office staff do teachers need to add value to the learning process?
The purposes of education

The answers to the questions posed in this paper will shape the way Education Queensland organises learning experiences for children attending state schools in the next century. Finding the answers that work for Queensland state schools will not be simple.

The task of finding answers will be easier if we first reach some consensus on the fundamental purpose of education. What do we expect our young people to achieve as a result of the investment we make, as parents and through public funds, in their education?

Most people, if asked why they send their children to school, would answer 'to get a good job'. But this is not the simple and straightforward answer that it was in the past. Many more skills than basic literacy and numeracy and specific vocational requirements are now needed to find your way into paid employment. Specific jobs may not exist in the future: there may only be work that individuals have to organise for themselves.

Others might answer 'to learn to live with others', perhaps meaning that school is where young people learn to relate to others and where they build their commitment to community values. Again, in a world where the global and the local are equally accessible and which is much more diverse in culture, religion and personal values than it was a few years ago, this is not a simple matter to learn. There are many answers: ‘learning the right way to behave', 'learning to work hard' and so on. Each is made more complex by our rapidly evolving world.

The purpose of education – what we want from school for our children – has always been affected by the sort of world we live in.

For Aristotle, the early years of school were for reading, writing, arithmetic, geometry, astronomy, music, civics and physical education. Purely utilitarian knowledge was 'unsuited to (people) that are great-souled and free'. The primary goal of education was the cultivation of the intellect: the development of human beings to their full potential.

Formal education was once confined to the elite in society. It focused on developing the personal characteristics needed for the elite to rule. It provided access to classical and religious literature that provided ‘superior’ moral and philosophical insights.

The growth of urban, industrial society led to the need to educate the urban population - the industrial workforce. There was a growing need for basic literacy and numeracy skills within the workforce and society generally. There was also a need for accepted behaviour patterns to ensure industrial discipline and social peace. Often this included teaching democratic or nationalistic values as well.

This broad view of education has persisted until recently, and is pursued through three broad levels of education: primary (including pre-school), secondary and
post-school. Although secondary has expanded with the growth of the middle class, and more and more people are continuing to post-school education that was once the province of the elite, the model is still broadly the same. However, the growth of the knowledge economy and the revolution in digital communications are transforming the nature of the urban, industrial society that defined these purposes. Work, social values and the way we organise our lives are already different. A new consideration of the purpose of education is needed.

The International Commission on Education for the Twenty-First Century, set up by UNESCO, provides a contemporary way of looking at the purpose of education. The report’s starting point is that education is not 'a miracle cure or a magic formula opening the door to a world in which all ideals will be attained.' Rather, it is 'one of the principal means available to foster ... human development ... and reduce poverty, exclusion, ignorance and war.' It is an ongoing process of improving knowledge and skills and 'perhaps primarily, an exceptional means of bringing about personal development and building relationships among individuals, groups and nations.' It contributes to 'sustainable human development, mutual understanding and a renewal of practical democracy.'

Defining a purpose for education has to overcome the tensions inherent in the problems that we face. These are tensions between:

- global opportunities and threats and the needs of local communities for a sense of identity and wellbeing
- the values we would wish to retain from our equitable and democratic traditions and the challenges of modernity, particularly from new technology
- short-term consideration of immediate problems and the need for patient long-term negotiated reforms rather than quick answers so often sought by media-generated ‘public opinion’
- the need to respond to competition and the concern for equal opportunity
- the increasing pressure on the curriculum brought about by the extraordinary expansion of knowledge and the continuing requirement to provide the basics, and
- moral values – the spiritual – and the desire for an education which yields material benefits

Against this backdrop, the Commission proposes four ‘pillars’ on which a school system might base its approach to schooling. The four pillars echo Aristotle's concern that education should encourage far more than just the acquisition of utilitarian skills. These pillars are:

- learning to be: the development of individual personalities to be creative, independent and responsible, with opportunities for aesthetic, artistic, scientific, cultural and social discovery. These skills are a building block for economic progress.
- learning to do: preparing students for employment and the types of work needed in the future. The emphasis is on personal competencies more than specific job skills, as jobs will change and most young people will have a variety of jobs over their working lives. It leads to an emphasis on vocational curricula, consultation with employers, career guidance services and teachers’ knowledge of the world of work.

- learning to live together: developing an understanding of other people and an appreciation of interdependence, in a spirit of respect for the values of pluralism, mutual understanding and peace. Some common values and consideration for others are essential for society to operate smoothly. The aim is to assist young people - our future adults - to avoid prejudices and inaccurate assumptions. This purpose promotes an emphasis on civics education, pastoral care and pedagogy that encourages tolerance and teamwork.

- learning to know: learning how to learn, by developing concentration, memory skills and the ability to think. This supports the other three pillars, by developing in students the ability and interest to continue to learn when they are adults.

Another model for looking at the purpose of education is to look at ‘Australia’s Common and Agreed Goals for Schooling in the Twenty-first century’. These are being considered by governments around Australia as the basis for guiding their respective state school systems.

Some commentators think these do not say enough about the nature of the world that students will be entering. Nor do they offer comment on why.

Since the State Government, on behalf of the public, is a big investor in state education, it may have several other possible purposes for school education in mind.

Schools can support the economic development of Queensland. A highly educated workforce will make Queensland businesses more competitive and attract new businesses to Queensland.

Schools can provide a chance to address the disadvantages faced by students from families in poverty. They could also be a venue for integrating service delivery to local communities. In short, education can be a means of doing something about social mobility and providing life chances for the disadvantaged.

The trick will be to find a balance that is appropriate for Queensland’s immediate future and that meets the aspirations we have for our children. The sobering factor will be that the purpose – however defined – will have to be put into practice. It must be grounded in the reality of what we can actually do together.

**Questions for Discussion**

- What are your aspirations for young people growing up in Queensland?

- Which of those aspirations do you think state schools should try to meet?
• How would you describe successful educational outcomes?

• How should schools satisfy government that public money has been well spent?

• How should schools advise parents and students that they have delivered what was expected?
We want to hear from you

The series of discussions that we are about to start on the future of our state schools is potentially the most exciting and challenging project for Education Queensland in many years. But it will achieve its potential only if we all get involved. If we really care about revitalising the system, we must get involved, because the changes must come from within, from the people who work in the system and who want to make it better.

How to make your voice heard

We want to hear your views on the issues that have been raised in this paper. To make sure we do, you can:

- send a personal response
- join in one of the discussion meetings being arranged in schools, district offices and central office
- take part in a district forum
- contribute to a response from a particular group or association.

The meetings and forums will take place from the third week of Term 2 onwards. Teams will be travelling all over the State to facilitate and record the discussions.

The process is being coordinated by a project team in central office, who will provide feedback on all the material they receive, in two ways. Firstly, the draft record of all discussions will be sent back for comment to the particular group. Secondly, reports on the progress of the project and feedback on emerging themes will appear in a regular feature in Education Views and on the Education Queensland website, under the banner of Listening to the Ground.

It will greatly assist the project team if responses:

- include your name, a brief description of the capacity in which you write (e.g. teacher, parent, small business owner, association representative) and contact details so that you may receive feedback
- are structured as far as possible in terms of responses to the questions raised in the preceding chapters (for convenience they are repeated at the end of this paper).

Who to call and where to write

If you have any questions about the process, please call the project team on (07) 3237 1350.
Email

Electronic responses should be attached as Microsoft Word documents.

- If you have access to the Education Queensland Intranet send your response to:
  STRATPP.

- For respondents using the Internet the address is:
  strategicpolicy@qed.qld.gov.au

Mail and fax

You should send written material to:

  The Project Manager
  Queensland State Education - 2010
  PO Box 33
  BRISBANE ALBERT STREET Q 4002

or to fax:

  (07) 3237 0820.