A Creative Workforce for a Smart State

Professional Development
for Teachers in an Era of Innovation

Ministerial Advisory Committee for Educational Renewal

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Queensland **the Smart State**

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Preface

A Creative Workforce for a Smart State: Professional Development for Teachers in an Era of Innovation highlights some recent thinking about demographic, economic and cultural trends that will affect education in Queensland, especially the ways in which teachers are recruited, prepared, employed, rewarded and managed. It considers the question of what social needs the professional development of teachers might need to meet.

A Creative Workforce for a Smart State is not a research report or review of the specialist literature. Nor is it a commentary on the various initiatives by Department of Education and the Arts and other authorities to modernise and adapt to the times. Instead, it looks at education from the perspective of innovation and creativity, two qualities that international researchers (at Demos and elsewhere) have identified as absolutely fundamental to the triple bottom line – economic, social and ecological sustainability – in the 21st century.

What is needed to prepare Queensland people – young and old – for the challenges, risks and rewards of the global, ICT-enabled, innovation society? What skills, capabilities and networks will teachers need to produce the best social outcomes? What climate is required in schools and education systems to foster changes that will enable teachers to do things better? What kind of culture is needed within and beyond schools to help everyone to achieve their potential in a changing world? These are some of the challenges that face individual teachers, schools and education systems. They require a response that goes beyond incremental improvement, desirable though that may be, towards truly transformational change.

It is important to develop data-driven, research-led programs for the successful and effective professional development of teachers and educators, and many specialist agencies are active in producing such schemes. But the first priority is to look beyond the professional needs of teachers as presently organised, beyond education itself, to get a reality check on what education is for in the contemporary world.

A Creative Workforce for a Smart State seeks to situate local discussion about the professional development of teachers within that global context, showing how any scheme should be driven by a concern for social outcomes in a knowledge society.

Part One – The Workforce

Globalisation

Education in Queensland needs to respond to the challenges posed by an external environment characterised by innovation and risk, by the increasing importance of knowledge and creativity in the economy, and by the impact of globalisation and new technologies across all areas of work and experience.

It is a scenario in which information technology – once confined to the factories and offices of large-scale enterprises – has migrated out of organisations and into the homes and pockets of the general population. The impact is cultural and social as well as economic.

There is a major shift from the industrial age to the era of information and innovation, with emphasis on knowledge work, service industries, creativity and enterprise. Advanced economies are consumer-driven, with rapid growth in demand for experience rather than goods.

There is equally a growing trend to more diverse and multicultural societies with the need to address differences of culture, religion, capability, language and social and other preferences. All this occurs in a context of significant political and international change that is confronted by terrorism, war and poverty.

In the context of nationally significant arenas beyond the world of work, such as the environment, education systems will need to provide the skills required for effective action: skills for work in environmental industries, skills to manage the impact on the environment of business activity and skills to support sustainable practices in all industries.[1]

Changing Demographics[2]

With a decrease in fertility rates and an increase in longevity, Australia is faced with challenging demographic changes. The median age of the population was 34 years in 1998. By 2052 it is predicted to be 44.1 years. Population growth is expected to slow to 0.3 percent in 2040. The proportion of people aged 65 and over will increase while the number of 18-year-olds, that is, people entering the workforce for the first time – will fall.

In 30 years time there will be just two people of working age for every person aged 65 and over. Without immigration population growth in Australia will also slow, moving from the current low fertility rate of 1.2 percent to an even lower rate of 0.85 percent by 2016. At present there are around 170 000 new entrants to the labour force each year. But during the entire decade of 2020–2030 only 125 000 new entrants are expected to enter the workforce.

The younger age profile of Indigenous Australians will mean a higher proportion of this group will be participating in education and work. With mortality rates of seven times those of other Australians for Indigenous people aged between 30 and 64, Australian governments committed to reconciliation will continue to give priority attention to the educational and employment needs of Indigenous people.[3]

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[1] Australian National Training Authority (2002) *Environmental scan for the national strategy for vocational education and training 2004 – 2010*, p. 14.

[2] The demographic data in this part are drawn from: Bradley Jorgensen (2003) *The Ageing Population: Working and Learning in the Knowledge Society. Implications for Education Queensland*. Doctoral Thesis: Central Queensland University; and Diane Mayer (2003) *A teaching workforce for the future: continuing professional learning*. Commissioned paper, Strategic Human Resources, Education Queensland, 35 pp.; and research by David Reynolds, Hudson Global Resources.

[3] Australian National Training Authority (2002) *Environmental scan for the national strategy for vocational education and training 2004 – 2010*, p. 4.

Demographers note, also, the significant movement of women into the workforce over the past decade and the impact that is having on work and workplaces. This in turn poses particular challenges for teaching and for teachers and schools. Teaching itself is a highly feminised occupation and school reform needs to take account of that fact in the development of professional opportunities and career planning. Women's retirement and longevity patterns differ from those of men. They tend to retire earlier and live longer than men and incentives for remaining in teaching or in the workforce may need to be framed in terms of women's interests.

These demographic changes will impact negatively on public funding for education, from the Commonwealth at least. A report released by the Treasury in March 2004 predicted that:

> Overall, Commonwealth spending on education and training, while continuing to grow at a solid rate, is likely to decline as a share of GDP over the next four decades, from 1.8 per cent of GDP in 2001–02 to 1.6 per cent of GDP by 2041–42.[4]

International Population Trends and Demand for Knowledge Workers

These trends are not confined to Australia. The developed world is experiencing great demographic change, with fewer young people and declining birth rates, and greater longevity for aging generations. The changing demographics will have a dramatic impact on the teaching profession. The largest generational change in teaching workforces since World War II is looming. Teaching workforces are aging across all OECD countries, with over 40 percent of teachers in their 50s in some countries. In European Union countries, more than half the teaching force is 40+ years of age.

Countries like China and India are predicting economic growth of more than 5 percent per annum for the next five to 10 years; they will also be seeking to source skilled workers to meet demand.

Countries around the world need scientists and researchers in unparalleled numbers:
- The European Union needs an additional 500 000 to 700 000 R&D workers this decade if they are to achieve their goal, admittedly optimistic, of becoming the world's most dynamic knowledge-based economy. This is a 50 percent increase on present levels;
- The US is projecting a requirement for 2.2 million additional R&D workers over the course of the current decade; and
- Australia's numbers, which are consistent with those above, suggest that Australia will need an additional 75 000 R&D workers over the course of this decade. This is many more than would be provided by currently planned additional university places, even if they all went to science.[5]

Against this internationally competitive backdrop, there is a steady decline in Australian enrolments in science, particularly the enabling sciences, at both secondary and tertiary levels. Year 12 enrolments in physics and chemistry have both halved from around 30 percent 25 years ago. Only 1 percent of Australian tertiary graduates are in physical sciences (compare the OECD mean of 2.6 percent).

Of course this is not just a matter for educators. The key ingredients for a knowledge-based economy are more scientists and more investment, and neither is any use without the other. Equally, R&D innovation is not the sole province of science/engineering/technology: it requires creative, social and human inputs too. But while Queensland and the Commonwealth are both working on the investment issues, they need to be gearing up now to provide the scientists and innovators.

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[4] Commonwealth of Australia Treasury (2004) *Australia's Demographic Challenges*. 28 pp.
http://demographics.treasury.gov.au/content/_download/australias_demographic_challenges.pdf.

[5] Data from the Queensland Chief Scientist.

There is a real and pressing need to get more students interested in science and innovation throughout the education system, and for the innovation system to be seen as attractive to talented children in all disciplines. That in turn has major impacts on the shape of the teaching force.

Intergenerational Differences

The age profile of the teaching workforce suggests that it contains different generation types with contrasting priorities, values, drivers and motivators.

It is important to note however that the intergenerational differences listed below may describe a range of attitudes rather than a fixed profile for people in a given age group, so for example individuals in one age group may learn from and take on the characteristics of other generational groups. Perhaps the chief value of the idea of intergenerational difference in the education workforce is that it counters a one-size-fits-all policy of human resource management and teachers' professional development.

The largest percentage is the Baby Boomers – those born between 1946 and 1964; followed by Generation X-ers, those born between 1965 and 1980; and those currently entering the workforce – the Generation Ys.

While the Baby Boomers have dominated and shaped the workforce over the last 20 to 30 years, and many are in managerial and leadership roles, over the next 10 years many will be retiring and leaving the workforce, taking with them much experience, skills and knowledge. Baby Boomers are said to have very strong work ethics and are characterised by having made many sacrifices, avoiding any work–life balance, to gain material and financial security. Living for the now, they believe in loyalty, commitment, teamwork and reward for effort. Many have responsibilities for caring for older parents who are living longer. Many are also funding and supporting children at schools or universities.

Generation X-ers are said to have ignored the lead of their parents and have chosen to seek more of a work–life balance, having seen their parents affected by the stress of their lifestyles and commitment to work. The X Generation tend to look after their personal needs first and recognise that the dedication and sacrifices that their parents made do not guarantee employment tenure or certainty. This is particularly true after the 1990s when many Baby Boomers were retrenched and were forced to look at alternative careers – self-employed, part-time, contracting, consulting or totally new careers. Members of the X Generation tend to demand more flexible work arrangements, seek more variety and interesting work, demand career development opportunities and change jobs more regularly.

The Y Generation are said to have a strong work ethic, are entrepreneurial, seek change and variety, are independent and enjoy change. They enjoy the coaching and mentoring approach to learning and are willing to take risks. They have very strong values and principles.

Apparently, the next cohort will be the Millennials (born since 1995) who, together with Generation Y, are digital natives rather than digital immigrants. They don't think of computers as technology at all, work in teams, stay connected, are creators as well as consumers, don't tolerate delays or incompetence among peers, and they like to learn.

This mixture of generation types provides significant challenges for employers and creates healthy tension and differences in management and leadership requirements. The way in which organisations engage and motivate their employees will determine how effective they are at delivering strategic imperatives and outcomes. Organisations which adopt the HR practices that reflect the differing and often competing needs of the workforce will be the successful, leading-edge organisations that epitomise the

Smart State. They will also need strategies to address the aging workforce issue, including misperception, intergenerational conflict, age discrimination and skill irrelevancy, erosion or deterioration.

Portfolio Careers

Instead of working for a single industry or even a single employer throughout their career, people entering the workforce now can look forward to several changes of career, whether they are part of the newly emerging creative class or working in the service, industrial or primary sectors. To prepare for it they need new skills and capabilities in education, but they also need to be avid lifelong learners, returning to education, formal and informal, accredited and non-certificated, as they navigate their individual career.

New career concepts are emerging and long-term loyalty to one organisation is no longer valued in itself. Portfolio careers are more common, including holding down more than one form of employment at a given time. The average job has reduced from five to seven years in the early 1990s to two to five years currently. Progression to the top cannot be seen as the natural reward for many years of service. People believe that work satisfaction is a more important driver than status: it's now about what you do, not who you are, in an organisation. People are moving between organisations and using their transferable skills to seek new challenges and experiences. This means that organisations need to be more innovative and flexible in offering choice, challenge and variety.

Planning for Demographic Change

Within Queensland the same demographic forces are at work. The workforce is aging – the average age of Education Queensland teachers is over 41.

Education systems will need to restructure their HR policies and practices, their professional learning interventions, recruitment and retention strategies and strategies for transforming existing practices, so that the current workforce can produce better social outcomes. They will be forced to develop innovative HR policies and incentives, together with flexible working arrangements and incentive rewards. With a reduced number of people entering the workforce, competitive employers will themselves have to be innovative, creative and flexible to attract the right people. They will be competing for limited resources and employees who are skilled and motivated will be in a position to choose their employer. The key professions impacted by the shortage of knowledge workers include teaching, nursing, engineering, accounting and law.

Employers will also need to turn to the mature workforce. However, to take advantage of this source of talent will mean considering flexible work arrangements, investment in reskilling, a new approach to employment contracts and a different approach to superannuation and retirement benefits. In older workers, retraining and updating to prevent know-how from becoming outdated requires a different development approach from the development schemes that target aspirational younger workers.

The processes of attracting, retaining, maintaining and transitioning older workers will lead to new strategies for promotion and career planning. Ultimately, the different generational needs will be expressed in different policy approaches. Peter Drucker has suggested that a new management style must be developed, one that treats older workers more as volunteers rather than employees. Accordingly, the adoption of new modes of tenure, the redesign of jobs and the restructuring of pay and benefit systems to accommodate the needs of older workers is warranted.

Teachers are knowledge workers, and as such must learn to work with colleagues and students in knowledge producing and knowledge sharing ways. This is likely to produce a range of new learning needs within the currently aging teaching workforce. As the

OECD suggests:

> *Most of those who will be teaching in 10 years time are already working in schools. There are substantial challenges in ensuring that all teachers, and not only the most motivated ones, are lifelong learners, and in linking individual teacher development to meeting school needs. A key strategy involves finding ways for teachers to share their expertise and experience more systematically. Far too many teachers do not have access on a continuing basis to research and information on effective practice.*[6]

Broadly, there is a need to include a focus on expertise and continual updating, openness to work with parents and other non-teachers in a community (not just school) setting, use of technology and an understanding of its pedagogical potential, and the capacity to adapt and collaborate within school and networks.[7]

The role that education systems will play in serving the educational and learning needs of the many people still working in low-skilled jobs for low wages is also relevant to any debate about the future of professional learning. In respect to the Smart State policy, the education system plays the role of an agent of social intervention. The intent is that education will drive changes economically and socially for the benefit of Queenslanders.

There needs to be some discussion about the relative financial and in-kind contributions to school education that should be made by the community – individuals, government and business. There is a strong theme in the international policy literature that schools need to further improve linkages with higher education, adult and community education and vocational education and training if governments are to maximise scarce resources, improve pathways and offer communities the appropriate mix of services to meet a range of learning needs for individuals and broader ends.

The next step is to be brave enough to embark on the journey of studying the impact of all the background issues on Education Queensland. Some excellent work has already been undertaken, for example, Dr Brad Jorgensen's research and the work of Dr Diane Mayer, both of whom we acknowledge in the preparation of this paper.

High Control = Low Trust

Research shows that in recent times, levels of social trust and trust in key institutions have declined in Australia as elsewhere in the mature democracies. Over the past 10 years, there has been a marked decline in confidence in the government, the legal system, the press, major Australian companies and corporations, the church and the public service.[8]

In the education sector, there is pressure to transform educational institutions, rather than improve or reform them.[9]

At all levels, the search is for drivers for changing the existing models, rather than merely repairing system mismatches between practice and reality. The strong message is that new times need new solutions. These pressures in most cases are gentle but unrelenting forces on teachers and administrators to change the ways in which the

[6] OECD (2003) *Raising the Quality of Learning for All: Issues for Discussion: Education Ministerial Meeting, Dublin 18-19 March 2004*. Paris, EDU(2003)16, p. 10.

[7] Diane Mayer (2003) *A teaching workforce for the future: continuing professional learning*. Commissioned paper, Strategic Human Resources, Education Queensland, 35 pp.

[8] Elim Papadakis (1999) 'Constituents of Confidence and Mistrust in Australian Institutions', *Australian Journal of Political Science* 34(1):75-93.

[9] David Hargreaves (2003) *Working Laterally: how innovation networks make an education epidemic. Teachers Transforming Teaching*. London: Demos, p. 3. (www.demos.co.uk/workinglaterally)

seemingly timeless business of education is done. Yet, the conventional models seem to persist.

A consequent problem for these systems is that they cease to be fully effective where there are difficult clients and communities. In these settings there are intractable problems of retention and, even when that is achieved, of failing to reach expected outcomes. Often these marginal populations are the first to see that the promises of the institutions from a previous age cannot be met and they lose faith in the very institution itself, exacerbating sustainability issues. Where this happens with the middle classes, they flee public education (and Queensland has recently witnessed the announcement of Australia's first for-profit independent school).[10] Where the same disenchantment occurs in the context of social exclusion – as in some outer-suburban, regional/remote and Indigenous environments – then individuals frequently abandon schooling altogether, sometimes before even completing Year 8 or 9.

Paradoxically perhaps, under these conditions where the traditional model is threatened by social conditions, education has become more important as a public good. It presents as a problem because of increasing evidence that the system itself is progressively out of synch with social developments around it, yet it is seen to be essential politically for competitiveness, economic security and social capital growth. And it is seen as a lifelong necessity for workers, beginning, perhaps, with teachers themselves:

> Further increasing our skills and educational attainment will be important in improving our productivity and labour force participation. Higher skills and educational levels help in the creation of knowledge, ideas and technological innovation. As the world around us continues to change rapidly, especially with technological change, efficient and effective post-compulsory education and training systems will become more important. Current and future workers will need to improve and continually update their skill levels.[11]

The education policy literature reports that despite numerous innovations and changes within school systems initiated by teachers, managers and governments, the institution of school itself has remained largely unchanged in its bureaucratic structures and modus operandi since the late 1800s. Queensland school teachers and administrators may well object to this assertion, pointing to a host of curriculum, pedagogical and system modifications as evidence of change. But these are of a different order to what is needed. They may even be evidence of the dictum that 'everything changes but nothing moves'. The requirement is for systemic transformation rather than micro-innovation.

School and university systems are under unrelenting public pressure to produce results, both of a traditional kind (e.g. OPs and high levels of performance in disciplines such as the sciences) and for perceived future conditions (such as generic capabilities). In turn, the existing workforce requires both a vision of what is occurring and the capability to deal with both vision and the realities of the institutions in which people work.

These institutions will not transform themselves on their own resources. The evidence is that managers, workers and the organisation itself need learning, development and leadership if they are to prepare for the demands of social change and more autonomous professional work.[12]

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[10]'ABC Learning Centres unveils big plan to run schools'. *The Courier-Mail* 6 Feb 2004.

[11]Commonwealth of Australia Treasury (2004) *Australia's Demographic Challenges*. 28 pp. http://demographics.treasury.gov.au/content/_download/australias_demographic_challenges.pdf.

[12]International Labour Organization (2001) *Life at Work in the Information Economy*. Geneva.

Change the Culture[13]

Professional development starts with teachers' own initial recruitment, orientation and education. A recent Commonwealth report noted that the two most frequently cited motivations for becoming a teacher were 'enjoy working with children' (30.7 per cent) and 'desire to teach' (22 per cent).[14] This is akin to an aspiring lawyer who 'enjoys working with crims' or a designer with a 'desire to draw'. Together these self-regarding responses total over 50 percent of the teachers surveyed by MCEETYA, far outstripping the mere 8.3 per cent who were attracted 'to make a difference'.

There is a need to incorporate public value objectives directly into the performance goals and accountability systems of all professional development. In turn, there is an implication that there must be a renewed focus on collecting outcome indicators and placing them in the hands of users and practitioners, instead of the desks of policy professionals, academics and auditors. [15]

Teacher training is lifelong learning. There is an expectation of knowledge workers that people who do such work have high levels of formal education and regularly upgrade their stock of complex knowledge on a voluntary basis and are paid well.

Part of this process is the reprofiling of the teaching workforce as producers – of material and human resources, intellectual content, to provide learning services to clients – rather than as providers of curriculum. In this model, students are creators of demand for learning rather than comprising an endless supply of raw materials for a timeless profession called teaching. And teachers cease to be proletarianised by their labour – no longer defined only by the delivery of teaching, they can become entrepreneurs of learning.

Among other things, what's needed is more porosity about who's in the classroom. That is, teachers should be making use of people with practical skills, informal or tacit knowledge, and business/enterprise experience so that they 'produce' rather than transmit knowledge and skills. Cherbourg State School's use of teacher aides is exemplary in this regard, working between the school and community so that assumptions about what teacher aides should do are broken down along with the barriers between learning and life outside the classroom.

It follows that there should be more flexibility about where the classroom is established. Learning needs to migrate to where it's needed, for instance in workplaces that foster learning-by-doing projects.

Innovation cannot be commanded. How can teachers take ownership of reform through innovation in their own myriad practices? They must become partners in the creation of ideas that transform the system as a whole. To that end, in a recent Demos pamphlet on Teachers Transforming Teaching for the UK Department for Education and Skills, David Hargreaves argues:

> An essential task for government is to create a climate in which it is possible to promote among teachers:
> - The motivation to create new professional knowledge;
> - The opportunity to engage actively in innovation;
> - The skills for testing the validity of the new knowledge;
> - The means for transferring the validated innovations rapidly within their school and into other schools.[16]

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[13]As Rupert Murdoch once famously advised.

[14]MCEETYA (2003) *Australia's Teachers: Australia's Future*. Canberra: DEST, p. 101.

[15]T. Bentley, J. Wilsdon (eds) (2003) *The Adaptive State: strategies for personalizing the public domain*. London: Demos.

[16]David Hargreaves (2003), p. 10.

Part Two – The Challenge

A Make-Over for Teachers

A recent feature in the *Australian Financial Review* called 'The Secret Life of Teens' suggested that what happens on the other side of the bedroom door in Australian families today – where 14-year-olds hold electronic court via mobile, modem and media – is literally a closed world to parents and other grown-ups:

> *Australian teenagers today are the most electronically savvy, the most educated and the most globally aware generation ever. They have money, they are pragmatic about studying hard and getting a job and they are optimistic. They are the 'click and go' generation, they live in democratised families, they negotiate and they feel entitled to privacy.*[17]

Teens are perennially fascinating objects of speculation in the serious as well as the popular media, because their 'secret life' represents in concrete form the potential shape of the future for everyone. Their lives may not be such a secret after all, but the realities of the world they are facing – their futures – may indeed remain hidden from the sight and imagination of some of those whose job it is to worry about them, including parents, journalists, educators, policymakers and elected representatives.

This discussion is devoted to the professional development needs of one such group, teachers in Queensland. But if today's teens do live in a world that is barely recognisable to some of those professionals, it is important to share the secret.

The highest priority for teachers and their employers is to recognise that they too are part of an emergent 'Creative Class' within a global knowledge economy. If they don't know what's going on in the electronically savvy, educated, globally aware world that teenagers apparently find so normal, they won't be able to model and guide the kind of creative, innovative, adaptive, networked behaviour that drives success in that world.

As a workforce, teachers are still organised along industrial lines, where standardised professional development has been tied to the needs of a command bureaucracy with industrial agreements and strong hierarchies. Teachers are treated as if they belong to the industrial working class of the mid 20th century. A culture of low trust and high control produces low autonomy, risk-averse, time-serving behaviour. The requirement for predictability at the system level produces top-down strategies that may not apply well to any individual situation. The system itself is driven by targets and indicators which may result in it continuing to perform well in ways that need to change.

Professional development has barely begun to address the needs of teachers in a creative society where industrial production has already been eclipsed by the service sector in consumer-led economies which are driven by knowledge-based innovation.

There is a need for organisations continually to review their operations, strategies, work practices and HR policies to ensure they remain relevant, vibrant, meaningful and accountable. Education Queensland is not immune to these changes and needs to consider its future and relevance in light of changing circumstances.

If teachers are to participate in and serve the burgeoning needs of the future – where creativity, innovation, risk, autonomy and self-management are the secret life that drives economic and social development – then they need a make-over.

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[17]'The Secret Life of Teens'. *Australian Financial Review*, Feb. 14 2004: 20.

Creative World

Creativity … is now the decisive source of competitive advantage.[18]

With the shift to an ideas and creativity driven environment, success follows those who can exploit intangible knowledge and information and convert them to tangible benefits – financial, cultural and social. That is, the emergent knowledge economy requires critical thinkers who can also create something. Critical and creative thinking are the two sides of the new currency. In the emergent world of Queensland's Smart State, these two attributes are no longer a prized possession of the few, but the requirement of the many. Here is a real-life example from the Sydney press to illustrate the point that such attributes are already reaping rewards.

POSITION VACANT: Team leader for exciting new e-business. Successful applicant should be disloyal, break rules, resent authority, ignore punctuality and flout dress codes. CBD. $150k + options.[19]

One might wonder if the disciplines of the academic senior school curriculum are any longer of much advantage to potential applicants for such work. The advertisement indicates that society values creators and innovators, people not constrained by traditional mindsets. Employers seek critical analysts who can also create futures.

Schooling, then, must open the way to critical and creative thinking in application rather than expecting correct answers. Seeing beyond the immediate task or being able to see that two existing ideas can be combined to create a third new idea are important educational outcomes in the emergent society. Creative thinking in this sense is an attitude, a will to action, rather than just an optional skill.[20] Creative thinkers and doers take risks, seek new ideas and value learning.[21]

Australia is well placed to be a global player in innovation. Its internationally porous but instantly recognisable culture is now a commercially valuable intangible asset:
* unique Indigenous culture
* English-speaking
* rich in brand-names, design traditions, know-how, media savvy
* traditions of openness, cultural irreverence, anti-authoritarian creativity
* multicultural society with international outlook
* fusion of East and West (for instance in cuisine).

Queensland's Smart State program, under which education policies fall, is aimed at diversifying and expanding the economy and broadening the social reach of the networked society. It is a major opportunity to modernise society as well as the economy with real investment, world-class research and development, and partnership between government, business and the community.

Creative Workforce

In seeking to identify the driver of social and economic advancement during the next century, John Howkins argues that IT alone is no longer enough. He suggests that the 'information society' is already beginning to give way to something much more challenging:

If I was a bit of data I would be proud of living in an information society. But as a thinking, emotional, creative being on a good day, anyway, I want something

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[18]Richard Florida, (2002) *The Rise of the Creative Class*. New York: Basic Books, p. 5.

[19]*Sydney Morning Herald Magazine*, 17 June 2000, p. 31.

[20]Clive Graham (2003) *Teaching and Learning: Re-Thinking Pedagogy for Innovation and Advantage*. Address to the Honouring Our Teaching Symposium, University of New England.

[21]Hudson Highland Group (2003) Unlock corporate performance: America's knowledge workers provide the key. *The Wall Street Journal* CD-ROM.

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better. We need information. But we also need to be active, clever, and persistent
in challenging this information. We need to be original, sceptical, argumentative,
often bloody-minded and occasionally downright negative – in one word, creative.[22]

Richard Florida has identified a new economic class – the Creative Class – that he
says will dominate economic and cultural life in the century to come, just as the
working class predominated in the earlier decades of the 20th century and the service
class has since then. While the creative class is not as big as the service class, it is
nevertheless the dynamo of growth and change for the economy as a whole, and
incidentally for the temper of the times too – it's a cultural and social force as well
as an economic one. It is driving us from blue-collar and white-collar environments
to the no-collar workplace:

Artists, musicians, professors and scientists have always set their own hours,
dressed in relaxed and casual clothes and worked in stimulating environments.
They could never be forced to work, yet they were never truly not at work. With the
rise of the Creative Class, this way of working has moved from the margins to the
economic mainstream.[23]

Florida describes how the no-collar workplace 'replaces traditional hierarchical systems
of control with new forms of self-management, peer-recognition and pressure and
intrinsic forms of motivation', which he calls 'soft control'. Thus:

In this setting, we strive to work more independently and find it much harder to
cope with incompetent managers and bullying bosses. We trade job security for
autonomy. In addition to being fairly compensated for the work we do and the skills
we bring, we want the ability to learn and grow, shape the content of our work,
control our own schedules and express our identities through work.[24]

Creative Educators

The industrial organisation of workforces with strong unionisation leads to
standardisation of work experience. When the employer is a command bureaucracy,
then control, predictability and due process will always prevail over innovation, risk
and customisation.

To date, the fostering of creativity and of innovation in school students has not
itself been a major focus of professional learning activity. … These are very
substantial challenges.[25]

Sir Ken Robinson, senior education advisor to the Getty Trust, makes the connection
between economic and educational imperatives:

The economic circumstances in which we all live, and in which our children will
have to make their way, are utterly different from those of 20 or even 10 years ago.
For these we need different styles of education and different priorities. We cannot
meet the challenges of the 21st century with the educational ideologies of the 19th.
Our own times are being swept along on an avalanche of innovations in science,
technology, and social thought. To keep pace with these changes, or to get ahead
of them, we will need our wits about us – literally. We must learn to be creative.[26]

David Hargreaves says 'the time is ripe for exploring new ways in which to increase
teachers' professional knowledge and skill'. [27] He argues the need for 'deep change'

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[22]Comments to the Mayor's Commission on the Creative Industries, London, 2002: www.creativelondon.org.uk

[23]Richard Florida, pp. 12-13.

[24]Richard Florida, p. 13.

[25]MCEETYA (2003), pp. 163-164.

[26]Ken Robinson, 2001, *Out of Our Minds: Learning to Be Creative*. Capstone, Oxford: pp. 200-203.

[27]David Hargreaves (2003), p. 3.

that will transform rather than simply improve schools. That need is driven by:

> *The growing recognition that in a knowledge-based economy more people need to be more creative and this in itself will require new approaches to teaching. Without reducing the importance of the basics, we must now aspire to nurture through education the qualities of creativity, innovativeness and enterprise.*[28]

For themselves as professionals and for their students, teachers need to:
- nurture the individual talents that will win employment
- develop skills to manage a portfolio career – self-employed, freelance, casual or part-time, not with a single employer or even industry
- learn project management and entrepreneurship as core skills
- encourage project-based work in teams with multiple partners who change over time
- connect to an international environment where continuing education is normal
- increasingly prioritise life-design as well as employment skills
- learn how to navigate from entry-level workforce jobs to wealth-creating destinations – which may include giving up employment and working independently.

All these objectives require major changes in disciplinary knowledge, pedagogy, curriculum, assessment and the experience of education for both educators and students. Teachers' professional development program must turn to this task sooner rather than later.

Learning as a Distributed System

> *The starting point for renewing the public sector must be a renewal of its relationship with the society it serves. Ministers should be held accountable for solving problems which electors want solved, not running government departments.*[29]

Charles Leadbeater's strong warning about the perils of business-as-usual management, rather than tackling emergent problems, applies directly to the challenges facing those who promote learning within a knowledge society. Public education systems (including the independent sector) are not necessarily best placed to respond to the challenge of the new knowledge economy and the need for innovative, creative, adaptive and curious consumer-citizens to make it prosper.

Twentieth-century educational modernisation, based first on massively expanding formal institutions and more recently on increasing their productivity with centrally regulated performance targets, has certainly strengthened the education system of schools, universities and government departments. But inadvertently it has had a negative effect both on the kind of knowledge imparted and on the wider social desire to learn:

> *This approach to modernization also reinforces a deeply conservative approach to education, as a body of knowledge imparted by organizations with strong hierarchies and demarcated professional disciplines. … Two traditions are reflected in this culture: the monasteries, which were closed repositories for knowledge in the form of precious manuscripts, and Taylor's factory, which encouraged standardized, easily replicated knowledge. The result is a system that is a curious hybrid of factory, sanctuary, library and prison.*[30]

Instead of providing disciplinary knowledge in a controlled environment, Leadbeater argues that education should inspire the desire to learn:

> *The point of education should not be to inculcate a body of knowledge, but to develop capabilities: the basic ones of literacy and numeracy as well as the capability*

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[28]David Hargreaves, p. 4.

[29]Charles Leadbeater (1999) *Living on Thin Air: the new economy*. London: Viking, pp. 207, 215.

[30]Charles Leadbeater, p. 110.

to act responsibly towards others, to take initiative and to work creatively and collaboratively. The most important capability, and one which traditional education is worst at creating, is the ability and yearning to carry on learning. Too much schooling kills off the desire to learn.[31]

Merely expanding the formal education system is not the direction to take for creating a society characterised by 'yearning for learning': 'We need hybrid public and private institutions and funding structures. Schools and universities should become more like hubs of learning, within the community, capable of extending into the community'.[32] Individuals and families can and will take more responsibility for their own knowledge needs. Learning services will be provided by private as well as public institutions, for purposes determined by the needs of the learners themselves rather than for formal accreditation and certification.

In short, learning will become a distributed system, dedicated to creativity, innovation, customised needs and networked across many sites from the family kitchen to the business breakfast as well as the classroom and workplace. Educational practices in the various systems need to open up, to become more permeable and responsive to changing economic and social factors.

The shift from teaching as transmission of knowledge to learning as production of knowledge means that an important responsibility for the system will be helping people learn to learn, and to become motivated to learn. In this scenario, teachers become learning entrepreneurs, managers or producers, and teaching gives way to the design of learning programs.

This is not just a shift in the lexicon, but a transformation of practice. If the purpose of education systems is to prepare young people in appropriate ways for the challenges and responsibilities they will face throughout their lives, and if society is changing, 'so should the way in which we introduce young people to it'.[33]

Getting a Life

There are formidable difficulties for government in the teaching workplace itself. Faced with so-called difficult children, often trying work settings beset by heat, isolation and a variety of other environmental and social conditions, long working hours, the pressures of new curricula and pedagogical approaches, and the pressures of social change, teachers and principals could be forgiven for being reminded of Pfeffer's concept of the 'toxic workplace':

Another sign that a company is toxic: It requires people to choose between having a life and having a career. A toxic company says to people, 'We want to own you'. There's an old joke that they used to tell about working at Microsoft: 'We offer flexible time, you can work any 18 hours you want'.[34]

A toxic company says, 'We're going to put you in a situation where you have to work in a style and on a pace that is not sustainable. We want you to come in here and burn yourself out – and then you can leave'. That's one thing that SAS manages brilliantly: When you take a job there, you don't have to ask yourself, 'Am I going to be a successful and effective SAS employee, or am I going to know the names of my children?'

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[31]Charles Leadbeater, p. 111.

[32]Charles Leadbeater, pp. 111-112.

[33]Tom Bentley (1998) *Learning Beyond the Classroom: educating for a changing world*. London: Routledge, p. 38.

[34]J. Pfeffer (1998) Danger: Toxic Company. *Fast Company*, November 19, p. 152.

As Florida argues, such workplaces do not attract creative people. Here is Pfeffer again:

> You hear a lot about the shortage of talent. The thing to remember is that, for great workplaces, there is no shortage of talent. Companies that are short on talent probably deserve to be! Anyone who is smart enough to work in a high-tech company is too smart to work in a toxic workplace.

This general shift in values towards greater balance between work and life is expected to increase as people born between 1977 and 1995 (Generation Y) join the workforce. In a 1998 international study of university students, 57 per cent said that finding a balance between their private life and career was their top priority (up from 45 per cent in 1995).[35] Such people seek autonomy and flexibility to earn a living by doing something meaningful, while expressing their individuality and creativity. In today's world, 'employers live or die on talent, and talented people increasingly crave jobs that allow them their lives'. [36]

Skills for Survival

Shifts of emphasis and the associated skill sets that accompany them raise significant challenges, for teachers and administrators whose expertise was honed in a previous age, and for ministers. Advances in the neurosciences are creating knowledge about how our brains work, and about implicit and explicit knowledge, emotions, memory and learning. Thus:

> The sciences of learning, including cognitive neuroscience, the cognitive sciences, medicine and education, are generally moving through inter-disciplinarity to trans-disciplinarity and transforming themselves into a new science of learning. This process is, as yet, at an early stage. But it is already clear that this transformation is both desirable and inevitable. Even at this stage it is by no means too soon to be considering the establishment of faculties and institutions of learning sciences either within existing universities and research centres, or free-standing and independent.
> There can be few questions more important, for the 21st century to find good answers to, than: how the brain works, how people learn best, and what educational provision can best help them. It will be the business of the science of learning to provide reliable and applicable answers to such questions. There are good reasons to believe that it will do so in the years ahead.[37]

Communication skills, flexibility in thinking and emotional intelligence are increasingly seen as fundamental capabilities for living in a globalised world. The ILO argues that these are required for all work whatever its skill level and are best developed in the workplace.[38] In this emergent world, more value is placed on capabilities than cognitive skills and technical competence alone.

A recent study of American knowledge workers for example suggests that in any knowledge-based organisation, only a small proportion of senior staff are 'high performers'.[39] High performers are characterised as risk-takers, seekers of new ideas and as people who value learning. They can tolerate failure because it aids innovation – 'failing forwards towards success' as Thomas Edison put it.[40] These creative innovators

[35]A. Carson (1999) Future leaders seek to balance life and work. *The Age*, 8 June 1999, Melbourne.

[36]K.H. Hammonds (2001) Ford's Drive for Balance. *Fast Company*, May.
http://www.fastcompany.com/lead/lead_feature/ford_balancingact.html

[37]OECD (2000) *Understanding the Brain: Towards a New Learning Science*. Paris, p. 86.

[38]International Labour Organization, (2002) *Learning and Training for Work in the Knowledge Society*. Geneva.

[39]Hudson Highland Group (2003).

[40]Quoted in Hargreaves, (2003), p. 10.

thrive in an organisational environment where they are respected for what they can do, and where resilience, seeing opportunities when others see challenges, is rewarded. They tend to be the people who generate results.

Strategies are needed in most organisations to move more staff into this high-performance range. Education Queensland and other education authorities, with their large staff numbers and the complexities of their operations, face challenges in this respect, especially in the context of large-scale epochal changes that are rippling through the workforce.

Part Three – Recommendations

In order to improve and sustain a willing commitment to system-wide educational excellence and the adaptive capacity required by teachers and school administrators to achieve it, there is a need for a set of priorities and strategic approaches that achieve these ends.

Government needs to create the climate and opportunities in which teachers innovate, validate and transfer new knowledge about their profession.

Professional development strategies should focus on four areas for transformation:

self-management
- skills promoting responsibility, not self-improvement
- management is no longer a spectator sport – everyone in the workforce has responsibility to deliver the social outcomes

community linkage
- how to work with parents, local communities/organisations, aides, businesses
- networking

flexibility or adaptive behaviour
- 'producer', not disciplinary skills
- keeping up to date
- transitioning older/retired teachers (and others as appropriate)

customisation
- not a one-size-fits-all industrial model. A wide range of professional development should be allowable depending on what capabilities are needed. Not all programs need to be certificated courses.

Recommendation 1

That a condition of being a well-respected member of the teaching profession should be that regular professional development is undertaken as a core function of professional membership and that personally initiated professional development that meets organisational goals should be accredited and rewarded.

Recommendation 2

That professional development for teachers and principals should be focused on high standards of professional performance that achieves value-added outcomes for students and their communities, judged against explicit criteria focused on student outcomes and socio-policy goals.

Recommendation 3

That the education systems should develop learning support staff of various kinds to support teachers. This involves addressing the balance of teachers' own workloads to focus on their prime professional role (as 'learning architects'), and developing a network of paraprofessional and community resource personnel to enhance the flexible, adaptive delivery of student learning outcomes.

Recommendation 4

That teaching professionals must be prepared in their pre- and in-service phases to gain definite knowledge, skills and behaviours that prepare them for emergent social conditions in collaboration with schools and communities, the Queensland Board of Teacher Registration, universities, relevant statutory authorities, principals' associations, relevant industrial unions, industry and business groups and school systems.

Recommendation 5

That the Minister commissions further work to develop:

- The type of teaching workforce and skills needed for the future to enable teachers to become learning managers, learning architects or entrepreneurs of learning.
- Professional control and autonomy so that teachers, school administrators and communities can shape their own priorities within government policies.
- An increased capability in the education system based on understanding of and the capacity to implement pedagogies that achieve desired learning outcomes.
- Suitable professional learning opportunities for teachers and administrators so that they understand and work with increasing pressure for education's clients, users or customers to drive reform.
- A professional learning structure that orients both teachers' own and departmental or government imperatives towards the achievement of learning outcomes directed to long-term, strategic ends across social, economic, cultural and environmental responsibilities.