

The Australian economy needs an education revolution

New Directions Paper on the critical link between long term prosperity, productivity growth and human capital investment



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New Directions Paper on the critical link between long term prosperity, productivity growth and human capital investment



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Executive Summary

Productivity was driven by the industrial revolution in the 19th century and the technological revolution in the 20th century. In the 21st century, a human capital revolution will drive productivity growth.

That's why Labor is now calling for an education revolution in Australia.

The length and stability of the current period of economic growth is substantially the result of the two waves of economic reform introduced by the Hawke and Keating Governments in the 1980s and 1990s. The first wave of reform in the 80s opened up and internationalised the Australian economy. The second wave of reform in the 90s implemented wide ranging changes centred around national competition policy.

Labor Governments initiated and implemented those first two waves of reform, and it is a Federal Labor Government that will bring about a third wave – centred on investment in human capital.

In this paper, Labor argues that human capital investment is at the heart of a third wave of economic reform that will position Australia as a competitive, innovative, knowledge-based economy that can compete and win in global markets.

We need to set for ourselves a new national vision – for Australia to become the most educated country, the most skilled economy and the best trained workforce in the world.

The argument advanced in this policy paper is twofold:

- First, Australia's long term prosperity can only be guaranteed by long term productivity growth.
- Second, this productivity growth is best underpinned (consistent with the OECD consensus) by a large scale, sustained investment across the human capital spectrum.

This paper further argues that Australia faces a mounting crisis:

- Productivity growth has been falling. Benchmarked against the United States economy, Australia's labour productivity fell back from a peak of 85 per cent to just 79 per cent between 1998 and 2005, almost completely losing the relative productivity gains of the 1990s.
- National investment in education in Australia has not been keeping up with the rest of the world. Since 1995, Australia's public investment in tertiary education has gone backwards by 7 per cent, compared with an average increase by other OECD countries of 48 per cent. Australia is the only nation that has cut its public investment in tertiary education.

On these two measures, the data is unequivocal, disturbing, and demands an urgent policy response.

Finally, this paper argues that, if Australia is to turn its productivity performance around as well as enhance workforce participation, the Australian economy now needs an education revolution – across early childhood education, schools, TAFE colleges, universities and research as well as programs for mature age workers:

- A revolution in the quantity of our investment in human capital.
- A revolution in the quality of the outcomes that the education system delivers.

1. Introduction

The Australian economy has enjoyed a long period of continued economic growth and prosperity dating back to the period of the previous Labor Government. But economic conditions are ever changing. The conditions that created the prosperity we have enjoyed in recent years will not guarantee long term prosperity. If we are to have high standards of living into the future, we must adapt to changing global conditions.

The resources boom that has done so much to increase prosperity in recent years will at some time come to an end. The rise of China and India as economic superpowers brings great opportunities to Australian exporters. But it also brings increasingly intense competition to the global economy, not just in manufacturing, but also in services and knowledge industries. We cannot allow Australia to simply become China's quarry and Japan's beach – we must have a diverse economic base.

Australia's open economy, the result of past reform and the source of much past growth, exposes us to these new competitive pressures and the need for accelerated productivity growth. At the same time, Australia's changing demographics threaten to reduce workforce participation, while putting increased pressure on public finances.

Current policy settings are not enough to prepare Australia for the challenges that lie ahead. Sound macroeconomic management and open and competitive markets are prerequisites for sustained growth. However, there are other critical elements for ensuring that Australia continues to build future prosperity, focused on increasing productivity growth.

Australia's productivity growth has declined in recent years:

- Benchmarked against the United States economy, Australia's labour productivity fell back from a peak of 85 per cent to just 79 per cent between 1998 and 2005, almost completely losing the relative productivity gains of the 1990s.
- Labour productivity growth fell from an average annual 3.2 per cent to 2.2 per cent in the latest five year period (1998-99 to 2003-04) compared to the previous five year period.
- During the same period, multifactor productivity growth fell from 2.1 to 1.0 per cent.

A substantial and growing body of international research shows that investment in human capital – in educational programs from early childhood through to mature age workers – offers substantial social and economic returns for economies as well as for individuals.

This research presents a significant challenge for Australia. Australia's quantum of national investment in education at 5.8 per cent of GDP is behind 17 other OECD economies. Australia's investment in early childhood education is just 0.1 per cent of GDP, compared to an OECD average of five times that amount at 0.5 per cent.

In many areas of educational attainment, Australia also falls short of its competitors and its potential. According to the World Economic Forum's annual report on global competitiveness, Australia's science and maths education ranking overall is now 29th in the world, behind nations like Singapore, France, India, the Czech Republic and even Tunisia. In areas like early childhood, Australia's education outcomes are falling well behind other nations. This fact is especially disturbing, given the strong evidence that investment in early childhood learning offers the greatest dividends. In other areas such as schools, universities and research, we are not doing as well as we could.

As Australia becomes more integrated with an intensely competitive global economy, we must find new sources of competitive advantage. Our investment in human capital is essential for creating an innovative, productive workforce that can adapt to a rapidly changing world. The successful advanced economies of the future will be those that can add most value, through human effort and ingenuity, to their traditional strengths in every sector.

More than anything else, it is strong productivity growth and high levels of workforce participation that will make Australia competitive in the first decades of the twenty first century. But no policy is more important than Australia's investment in human capital – the education, skills and training of our workforce and our people.

This paper argues that with new education policies, Australia's future workers will be able to work smarter, not just harder. That will allow us to build businesses that can compete in global markets, and win. It will give us the productivity growth that can build our future prosperity.

These economic dividends to be derived from education are separate from the social dividends which flow from significant investment in this sector. A significant increase in investment in education will give Australians more fulfilling work, lifting participation rates and contributing to happier, healthier and more secure lives. It will also build a fairer society, providing greater life opportunities for all Australians.

Australia needs nothing less than a revolution in education – a substantial and sustained increase in the quantity of our investment, and the quality of our education.

This is required at every level of education from early childhood to mature age.

We need to set for ourselves a new national vision – for Australia to become the most educated country, the most skilled economy and the best trained workforce in the world.

This is our only secure pathway to a prosperous future in the unfolding global economy, to let all Australians realise their potential and give them the chance to get ahead.

2. The long term foundations of prosperity

2.1 The challenge of the next decade

Many factors influence a nation's long term prosperity. A nation's physical endowments, its capital base, its use of technology, and the size and skill base of its workforce determine its potential economic output. Governments play an important role in setting the conditions under which businesses combine the factors of production and the economy grows.

Sound macroeconomic management is a prerequisite for stable economic growth. Open markets and efficient regulatory frameworks promote economic activity and foster prosperity. But in the long run, an economy cannot reach its full potential unless it continually strives for consistent improvements to productivity and sustains high levels of participation in the workforce.

Australia is a prosperous economy. Australia's return to prosperity occurred on the back of a decade of extensive economic reforms implemented by the previous Labor Government during the 1980s and 1990s. Yet there is much evidence to suggest that Australia has not yet reached its potential. Further, there are reasons to question whether Australia can sustain its current status in the years ahead. Australia's prosperity has in recent years been reliant on unusually favourable external conditions.

It is estimated that, in 2006-07 alone, the surge in the terms of trade inspired by the resources boom will add \$55 billion to our national income, or \$3,066 per annum for each Australian.¹ The flow-on effects of the resources boom include higher wages, lower unemployment, higher company profits, and a tax 'windfall' for the federal government. The resources boom is chiefly responsible for an estimated \$283 billion increase to Federal Government tax revenue above its original estimates because of 'parameter variations' from 2002-03 to 2009-10.²

The challenge that Australia now faces is that the platform for economic prosperity in recent years has changed from high productivity growth, to the short term, boom-time prices for minerals and energy. In the second decade of the twenty-first century, Australia is likely to face moderating conditions in global resources markets. In the absence of the resources boom, Australia's economic fortunes will be determined by our underlying performance – i.e. productivity growth rates, which have been weak in recent years, and growing challenges to workforce participation arising from long term demographic change.

Demographic changes that have lifted participation rates in recent decades will have the opposite effect in coming years. As the post-war 'baby boom' generation moves into retirement, participation rates are expected to fall. This will have a profound effect on the age structure of the Australian workforce, and bring increased pressure on public finances. The Productivity Commission estimates that in the absence of policy responses, population ageing will cut per capita growth rates by as much as half.³

Other factors beyond the control of domestic policy will make this challenge more difficult. The global effect of the rise of China, India and other industrialising nations will be wide-reaching. Developed nations such as Australia will face increasingly intense competition in their domestic and overseas markets for both goods and services. By 2004, China ranked fourth in expenditure on research and development, behind only the US, the EU and Japan and is, on the basis of growth rates from 2000 to 2004, expected to rank second by the end of 2006.⁴

With these challenges ahead, it is important for Australia to reconsider the long term foundations of economic prosperity. Achieving sound economic management and fostering competitive markets are prerequisites for continued growth. Maximising participation in the workforce is an increasingly important ingredient of sustained growth. But economic research indicates that the most important enduring determinant of living standards is

¹ Calculated by Economics@ANZ, based on ABS statistics of the faster growth rate of gross domestic income ahead of gross domestic product, cited by ANZ Chief Economist, Saul Eslake, September 2006

² Calculated by Economics@ANZ calculations, cited by ANZ Chief Economist, Saul Eslake, December 2006

³ Productivity Commission (2005) *Economic Implications of an Ageing Australia*, Productivity Commission commissioned Study

⁴ OECD (2006) *Science, Technology and Industry Outlook 2006*, p.42

a nation's productivity.⁵ Understanding the nature and foundations of productivity is central to the challenge of sustaining prosperity into the future.

2.2 Macroeconomic stability: a prerequisite for growth

In recent decades, a broad international consensus has emerged among economists that macroeconomic policy is best suited to deal with short term economic goals of low and stable inflation, sustainable economic growth, and fostering job creation. When macroeconomic policy is successful in achieving these objectives, countries can sustain longer periods of economic expansion.

At a policy level, the philosophical differences in how these macroeconomic policies should be used to achieve economic stability have narrowed. As noted recently by the former Reserve Bank Governor Ian Macfarlane in his December 2006 Boyer Lectures entitled *The Search for Stability*:

"[T]hese days the macro-economic policy proposals of the two major parties are almost identical...both major parties support an independent Reserve Bank making interest rate decisions based on a 2-3 per cent inflation target. The current policy framework of inflation targeting and Central Bank independence has met with considerable success during its period of operation, and now enjoys public approval and bipartisan political support."

Former Reserve Bank Governor, Ian Macfarlane, December 2006
The Search for Stability, Boyer Lectures, ABC Radio National

Just as inflation targeting was implemented under a Labor government, it was subsequently formalised under the Coalition government. Similarly, both major parties have endorsed the principle that fiscal policy decisions should follow a medium term strategy. Australia first adopted a set of fiscal policy rules in 1984, with Labor's trilogy of budget rules which restricted taxation, spending and the budget deficit as a percentage of gross domestic product. The Coalition government adopted a rule-based approach in 1996, with its medium-term fiscal strategy of 'maintaining budget balance, on average, over the course of the economic cycle'⁶.

Labor's commitment to fiscal discipline is embodied in Labor's Budget Rules, which were released in 2006:

"Fiscal policy under a Labor Government will be guided by Labor's Budget Rules, which state that Labor will keep the budget in surplus, on average, over the course of the economic cycle. Labor will not increase taxation as a share of GDP, delivering budget surpluses through disciplined spending not higher taxation."

These rules are not radically different from the formal statement of the Government's medium term fiscal strategy – although Labor has argued that the Government's fiscal performance in recent years has placed an excessive burden on monetary policy for the overall maintenance of macroeconomic stability and low inflation. Labor believes that important structural reforms to fiscal policy are needed, but these changes primarily relate to making the Budget papers more transparent, making government departments more accountable for their use of public monies, and making sure that the Charter of Budget Honesty operates fairly.

As noted recently by the Chief Economist at ANZ Bank, Saul Eslake, Australia has a "bipartisan commitment to good economic management – both major parties endorse balanced budgets 'on average over the course of the cycle', central bank independence and a prominent role for competitive markets in allocating resources".⁷

While a broad economic and political consensus on macroeconomic policy settings has developed in recent decades, the economic debate is not over. It has simply shifted to longer term, structural policies – the microeconomic policies to encourage productivity growth.

⁵ 'Productivity isn't everything, but in the long run it is almost everything. A country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker'. Princeton Economist Paul Krugman, in Krugman (1992), *The Age of Diminished Expectations: US Economic Policy in the 1980s*, MIT Press, Cambridge

⁶ 2006-07 Budget Paper No. 1, Statement 1

⁷ In January 2007 presentation: *The Australian Economy: Presentation to Economics and Politics students from the University of Delaware*

3. Productivity

3.1 Why productivity growth must be our key economic priority

“Over long periods of time, small differences in rates of productivity growth compound, like interest in a bank account, and can make an enormous difference to a society’s prosperity. Nothing contributes more to reduction of poverty, to increases in leisure, and to the country’s ability to finance education, public health, environment and the arts.”

Alan Blinder and William Baumol 1993, *Economics: Principles and Policy*,
Harcourt Brace Jovanovich, San Diego⁸

The long term basis of economic prosperity is sustained productivity growth. Businesses that foster productivity growth stay competitive in the domestic and global marketplace, generating more wealth for the national economy. Employees that become more productive enjoy higher rates of pay, and by working smarter, can enjoy a better work/life balance.⁹ According to the Productivity Commission, the benefits of stronger productivity growth include better wages and conditions for the workforce, higher profits to shareholders and superannuation funds, and increased revenue (through taxation) to fund social and environmental programs.

The Productivity Commission¹⁰ has highlighted the impacts of small changes in productivity for the Australian economy in coming decades. If productivity growth rates of the 1990s (around 2.05 per cent a year) can be maintained in the four decades to 2044-45 (rather than the base case of 1.75 per cent) the Australian economy would be better off in cumulative GDP terms by \$4.2 trillion, highlighting the substantial long term effect of sustained productivity growth.

3.2 Sources of productivity growth

Productivity growth occurs when a business or economy produces more outputs for a given level of inputs. This means using inputs to production more intensively, more intelligently or more creatively. The two key measures of productivity are:

- **Labour productivity:** output per labour input (measured either by the number of employees or hours of work). Labour productivity improves either through capital deepening (increased use of capital) or by improving the efficiency with which inputs are combined (called multifactor productivity)¹¹.
- **Multifactor productivity:** is output per combined input of labour and capital, and it is generally regarded as a better measure of productivity.

There is a broad consensus in the official and academic literature that two important determinants of long term productivity growth and prosperity are the degree of openness of the economy (that is, to both internal and external competition) and the level and quality of human capital investment.

Increasing productivity occurs when businesses adopt more efficient production methods or improve the quality of output or in an economy when resources shift towards industries with higher levels of productivity¹². According to the Productivity Commission, achieving productivity growth comes in two broad ways¹³:

⁸ Quote accessed on January 18, 2007 from Productivity Commission’s Productivity Primer: <http://www.pc.gov.au/commission/work/productivity/primer.html#growth>

⁹ Australia’s lower growth rates in labour productivity since 2001 have been associated with greater growth in total hours worked, according to Bart van Ark, (March 2006) *The World’s Productivity Performance; How do Countries Compare?* Productivity Perspectives Conference, Canberra

¹⁰ Productivity Commission (2005) Op cit.

¹¹ Shanks, Sid and Zheng, Simon (April 2006) *Econometric Modelling of R&D and Australia’s Productivity*, Productivity Commission

¹² Shanks, Sid and Zheng Simon (April 2006) *ibid*

¹³ Productivity Commission’s Productivity Primer, op cit

- The first is by improving the way in which resources are organised in firms and industries to produce goods and services. That requires the right market incentives for resources to flow to the more efficient areas of the economy, and for businesses to organise themselves in the most productive way. In tangible terms, this means businesses working in competitive product markets so that productive businesses are rewarded with higher profits; factor markets promoting efficient allocation of resources; and employers and employees being encouraged to work cooperatively to organise production processes efficiently. Strengthening market incentives, deregulating industries, reducing the regulatory burden, promoting free international trade, and encouraging collective enterprise bargaining all contributed to Australia's stronger productivity growth in the 1990s.
- The second path for raising productivity is to improve the quality of production inputs themselves. This in particular means raising the quality of human capital by investing in the workforce because labour costs constitute around 60 per cent of business costs. Other ways to improve the quality of production inputs include raising the productivity of land through sustainable land use practices, particularly in the agricultural industries; raising the productivity of capital through technological innovations; raising the productivity of public capital (i.e. infrastructure) through new technologies and public sector investment.

As Australia looks to the future beyond the resources boom, the critical policy question is to identify which drivers of productivity present the greatest opportunities for future productivity growth.

In broad terms, market settings in Australia are competitive. Significant economic reforms in the 1980s and 1990s have strengthened incentives for businesses to be productive. There is scope for further pro-competitive reforms, but compared to previous changes such reforms *may* be more modest than those of the initial national competition policy reform wave. In contrast, the quality of *inputs* to production in Australia remains well below potential.

According to the Chairman of the Productivity Commission, Gary Banks¹⁴, Australia's 'productivity miracle' in the 1990s was primarily the result of economic reforms, such as reducing barriers to trade and National Competition Policy. Despite the enormous potential productivity gains from human capital investment, workforce skills are estimated so far to have played only a minor role in boosting productivity.

3.3 Human capital investment as a driver of productivity growth

The economic research suggests that technological innovations, improving public infrastructure and building human capital are where the greatest opportunities for further productivity grow lie. Banks identifies the best opportunities for improving productivity in "getting the best out of Australia's 'social infrastructure' – health, aged care and other community services" and "raising the performance and accessibility of our education and training systems – primary, secondary and tertiary – particularly given their importance in deepening Australia's human capital, on which innovation and economic growth will increasingly depend"¹⁵. As Banks' analysis makes clear, what is needed is not just a higher *level* of investment in education, but making sure that investment in education is used efficiently.

The crucial need for a strong base of knowledge, skills and expertise was acknowledged by the long-serving former Chairman of the US Federal Reserve, Alan Greenspan:

"Over the past half-century, the increase in the value of raw materials has accounted for only a fraction of the overall growth of US gross domestic product. The rest of that growth reflects the embodiment of ideas in products and services that consumers value. This shift of emphasis from physical material to ideas as the core of value creation appears to have accelerated in recent decades... Ideas are at the centre of productivity growth."

Alan Greenspan, February 2004
Remarks to the Stanford Institute for Economic Policy Research Economic Summit

¹⁴ Banks, Gary (August 2003) *Australia's economic 'miracle'*, An address to the 'welcome dinner' for the *Forum on Postgraduate Economics*, National Institute of Economics and Business, ANU, Canberra

¹⁵ Banks, Gary (August 2003) *Op cit*, p. 10

The economic and social dividends of human capital investment are arguably more substantial and enduring than investment in physical capital:

“First, investment in human capital contributes significantly to productivity growth. Second, there is clear evidence that human capital plays a key role in fostering technological change and diffusion. Third, human capital investment appears attractive relative to alternative assets, both from the individual and from the aggregate perspectives. Fourth, policies that raise the quantity and quality of the stock of human capital are compatible with increasing social cohesion.”

Angel de la Fuente and Antonio Ciccone, May 2002
Human Capital in a Global and Knowledge-Based Economy

Investment in human capital also increases the returns on investment in physical capital:

“Skills can directly raise workers’ output per hour worked. Secondly, there is a substantial body of opinion that skills in the workforce increase the rate of innovation through fostering the absorption and further development of technologies.”

Productivity Commission, 2002, *Skill and Australia’s Productivity Surge*

Just as investment in human capital drives productivity growth and participation in the labour market, it is also central to securing Australia’s future living standards by boosting economic growth. There is considerable evidence linking education and economic growth:

- An international review of the macroeconomic and microeconomic research relating to the link between education, earnings and productivity concluded that the human capital view correctly identifies a strong relationship between these¹⁶. The authors also noted that the relationship is not linear, reflecting the higher return on early education investments.
- OECD research shows that if the average level of education of the working-age population was increased by 1 year, the economy would be 3-6 per cent larger, and the growth rate of the economy would be up to 1 per cent higher¹⁷.
- A recent international study found that countries able to attain literacy scores 1 per cent higher than the international average will achieve living standards – measured by GDP per capita – that are 1.5 per cent higher than other countries¹⁸.

So whether it is through focusing on literacy levels, improving retention rates, or increasing the average number of years spent in education, the evidence suggests that more educated economies are wealthier economies. Countries that invest in education do better in achieving their potential economic growth rate.

Beyond economic goals, educational analysts also highlight that education creates other social benefits. It helps build social capital – societies with a strong commitment to education can also enjoy higher levels of civic participation in community and religious groups, greater social cohesion and integration, lower levels of crime and social disadvantage, and a more trusting, equitable and just society¹⁹. From the earliest age, education plays a crucial role in developing social, emotional, and other life skills.

Lifting productivity further in the next decade of twenty first century is the key challenge facing economic policy makers. And while there is a substantial consensus on the importance of productivity growth, a debate has opened up about the policies that can most effectively influence productivity growth. The Coalition Government

¹⁶ Krueger, Alan, and Mikhail Lindahl. (2001) “Education for Growth: Why and for Whom?” *Journal of Economic Literature* 39:1101-36.

¹⁷ OECD (2006) *Education at a Glance 2006*, p.157

¹⁸ Coulombe, Tremblay and Marchand, (2004) *Literacy scores, human capital and growth across 14 OECD countries*, Statistics Canada

¹⁹ See, for example, Robert D. Putnam (2004) *Education, Diversity, Social Cohesion and “Social Capital”* note for discussion for Meeting of OECD Education Ministers, Dublin.

sees one-sided changes to industrial relations laws as the primary tool to raise productivity²⁰. Federal Labor sees further reforms to enhance domestic and international openness of the Australian economy, in addition to greater investments in the quantity and quality of physical and human capital, as the most fertile ground for productivity growth. Labor's argument that one-sided industrial relations laws will not raise productivity has been supported by labour market economists and independent experts:

"From the Work Choices legislation, and the focus on individual contracts and AWAs, we tend to be sceptical about their productivity gains. The big gains in terms of productivity come from the move to enterprise agreements. You can actually have destructive behaviour in workplaces where every worker is on a contract, and is trying to compete against each other. What you find is a lack of trust. Workplaces that have a high level of trust tend to be the ones that are most productive."

*BIS Shrapnel Senior Economist, Matthew Hassan
Quoted in AAP report, 26 June, 2006*

The basic thesis of this paper is that Australia's current investment in human capital is inefficiently low, and in the long run Australia's productivity growth will fall behind that of other countries that are making greater investments. Australia must lift its productivity growth to sustain its economic prosperity and this is best achieved by improving our economic resources through investments in human capital. The priority of human capital investment was recognised in a statement signed by all Australian governments, Commonwealth and States, in February 2006 at the meeting of the Council of Australian Governments (COAG):

"A healthy, skilled and motivated population is critical to workforce participation and productivity, and hence Australia's future living standards... Skills development helps realise the potential of citizens, and of the nation."

Key Facts: Human capital investment as a driver of productivity growth

OECD research estimates that a one year increase in the workforce's average number of years of education can add 3-6 per cent to GDP and increase annual economic growth by as much as 1 per cent.

International research has shown a close relationship between higher literacy standards and economic growth, with a 1 per cent premium on average literacy scores linked to a 1.5 per cent higher level of per capita GDP.

3.4 Australia's growing productivity gap

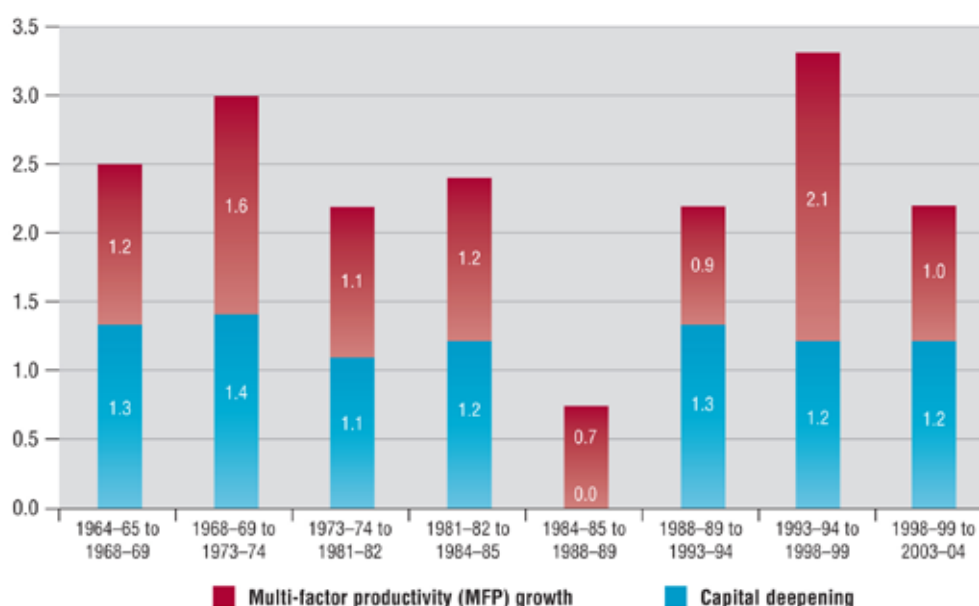
Given the strength of the long term relationship between productivity growth and living standards, we can best anticipate Australia's long term economic prospects by assessing its recent productivity trends. There has been an unusual divergence in the trends of living standards and productivity growth in recent years. This is best accounted for by the shift in the terms of trade resulting chiefly from the resources boom, which has raised national income faster than production. Such divergences last for a limited period of time before the relationship between productivity and living standards is re-established.

Australia's productivity growth has fallen back in recent years. Since the late 1990s, Australia has recorded weaker outcomes for measures of both labour productivity and multifactor productivity. In the five years from 1998-99 to 2003-04, Australia's annual labour productivity growth was just 2.2 per cent. By contrast, in the previous period from 1993-94 to 1998-99, labour productivity grew 3.2 per cent annually. Annual multifactor productivity growth between the earlier and later periods fell from 2.1 per cent to 1 per cent. While the even sharper decline

²⁰ See, for example, Treasurer Peter Costello's comments in an interview with Mark Riley 13 February 2005: "I can think of no single reform which would boost productivity in the Australian economy to the same extent as real, vigorous industrial relations reform."

in productivity since 2004 is unlikely to continue without some correction, it nevertheless indicates that there are no clear signs of a return to the strong productivity growth of the 1990s.²¹

Chart 1: Australian labour productivity growth



Source: Gary Banks, *Key Trends and Issues for the Day*, presentation to Productivity Perspective 2006 Conference, Productivity Commission

According to industry level analysis by Productivity Commission staff²², the slackening of productivity growth is widespread across the economy. A sector-based analysis of productivity growth recently showed that the three sectors that have had the sharpest falls in productivity in the latest productivity cycle are likely to have experienced a structural downshift in their productivity fortunes – construction, wholesale trade and electricity, gas and water. In each case, the productivity slowdown is related to declining output or use of an increased amount of labour to get the job done.

The outlook for productivity growth suggests a continuation of recent trends. In the 2006-07 Mid-Year Economic and Fiscal Outlook, the Commonwealth Treasury downgraded its long-run average projected productivity growth rate from 2 per cent to 1.75 per cent. One recent analysis also suggested that Australia faces lower labour productivity growth - averaging 2.3 per cent and lower multifactor productivity growth averaging 1.2 per cent a year²³. The working assumption of the Productivity Commission's 2005 report *Economic Implications of an Ageing Australia* was an annual labour productivity growth rate of 1.75 per cent up until 2044-45. According to another recent analysis of Australia's productivity performance²⁴, labour productivity is forecast to grow by 1.78 per cent a year in the twenty years to 2024. Whatever the measure, the projected productivity performance for the Australian economy for the future is too low to guarantee long term prosperity.

Another way of measuring our productivity performance, that reflects our competitive position in the global economy, is to benchmark productivity growth against other economies. Chart 3 shows that Australia was ranked 16th in the OECD in 2005, and that there is substantial room for improvement in Australia's productivity performance.

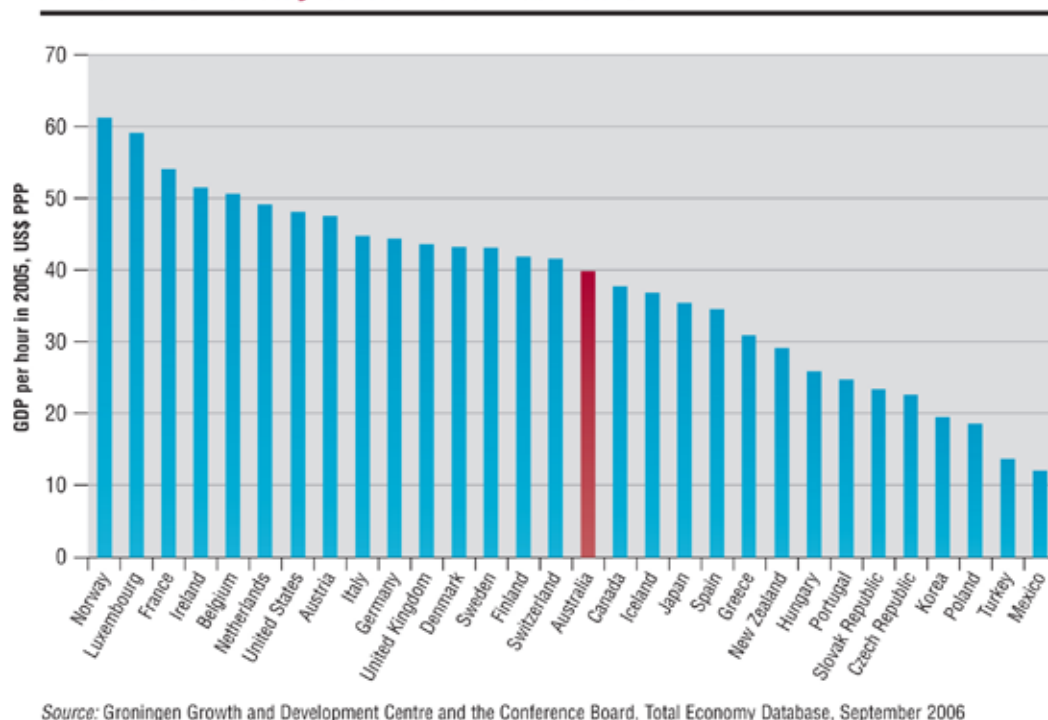
²¹ For further discussion of the recent sharper productivity slowdown, see comments by RBA Governor, Glenn Stevens in *Economic Conditions and Prospects: Address to the Australian Business Economists and the Economic Society of Australia*, 11 October 2006.

²² Parnham, Dean and Wong, Marn-Heong (2006) *How Strong is Australia's Productivity Performance?* Productivity Perspectives Conference, Productivity Commission

²³ Parnham, Dean and Wong, Marn-Heong (2006) *ibid*

²⁴ Revesz, John (March 2006) *Forecasting Productivity Growth: 2004 to 2024* Department of Communications, Information Technology and the Arts

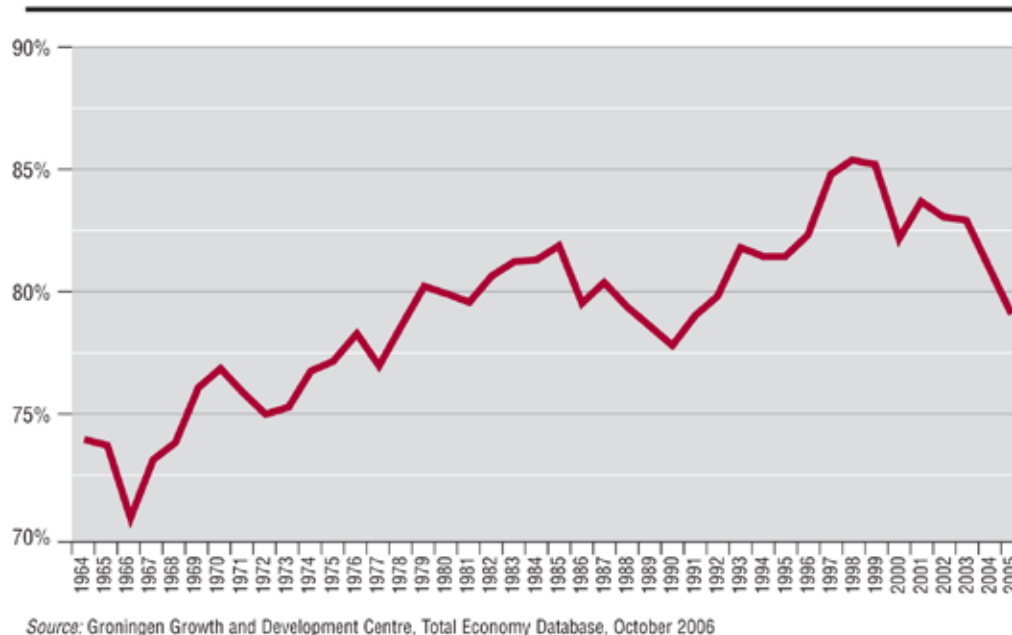
Chart 2:
Chart 3: Productivity levels in OECD countries



Between 1998 and 2005, Australia's level of labour productivity – benchmarked against the United States economy - fell back from a peak of 85 per cent to just 79 per cent. This reflects a reversal of a trend improvement against the United States over most of the second half of the twentieth century, and a significant surge during the 1990s. In comparative terms, Australia has now almost completely lost the relative productivity gains of the 1990s.²⁵

Chart 3:

²⁵ Commonwealth Treasury, "Comparing Australian and US Productivity", *Economic Roundup*, Winter 2005.

Chart 2: Australian labour productivity as a percentage of US

Australia has been insulated from this underlying deterioration in its economic performance in recent years. The resources boom has masked the impact of slower productivity growth on employment and living standards but Australia will not be able to escape the consequences of falling productivity over the longer term. If productivity growth does not pick up, falling international competitiveness will have major impacts on profits, employment, living standards and Australia's place in the global economy.

If Australia is to turn around its declining productivity growth, we need first to understand why our recent productivity performance has been disappointing. In simple terms, Australia's productivity growth has slipped back towards its long run average from its peak in the 1990s because of the absence of new drivers of productivity growth. The economic reforms of the 1980s and 1990s, and more intense use of technological innovations gave a once-off boost to the size of the economy, but now further productivity drivers are required if Australia is to recover its productivity momentum.

Key Facts: Australia's growing productivity gap

Australia's annual labour productivity growth fell from 3.2 per cent to 2.2 per cent between the periods 1993-94 to 1998-99 and 1998-99 to 2003-04, while multifactor productivity growth fell from 2.1 per cent to 1 per cent.

Australia's productivity level lags 15 other OECD countries, and benchmarked against the United States, Australia's productivity level fell back from a peak of 85 per cent in 1998 to 79 per cent in 2005.

4. Australia's investment in human capital

4.1 Australia's overall education outcomes

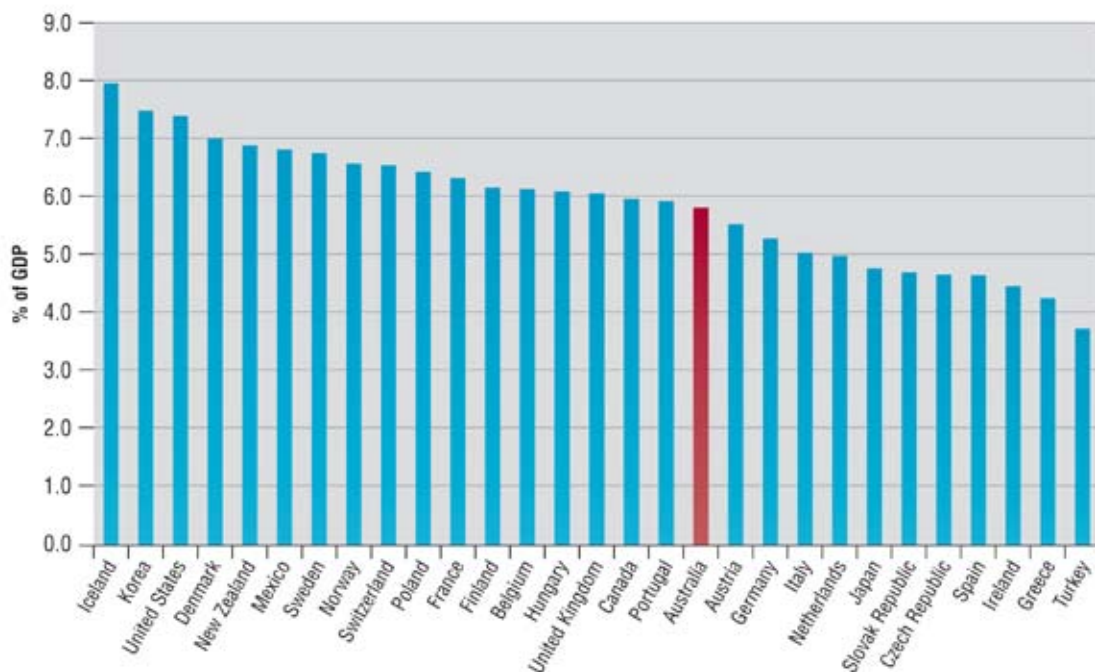
A significant constraint on Australia's productivity growth in recent years has been under-investment in education. While other nations have substantially increased their investment in human capital formation during recent years, in the past decade Australia has followed a different path.

In simple terms, *human capital* comprises human health, skills, and motivation, all of which are required for productive work²⁶. The Australian Bureau of Statistics, which measures human capital through a 'lifetime labour income approach', calculates that Australia's stock of human capital is worth \$4.5 trillion²⁷.

Australia invests in its human capital through its education system, which includes: early childhood learning, primary and secondary education, skills and vocational education, universities, and research. Using two of the broadest measures of education investment and outcomes, Australia ranks well behind many of its competitors:

- One critical measure of human capital investment is a country's overall investment in education as a share of GDP. Australia's overall investment in education is 5.8 per cent of GDP – behind 17 other OECD economies²⁸.

Chart 4: Total education spending as percentage of GDP in OECD countries



Source: OECD in Figures 2006-07 and OECD Education Outlook 2006

- While Australia's overall investment in education has increased in the past decade, as Chart 5 shows, Australia's education system now relies more on private financing than all other OECD countries except for the United States, Japan and South Korea. More than half of the cost of tertiary education is met

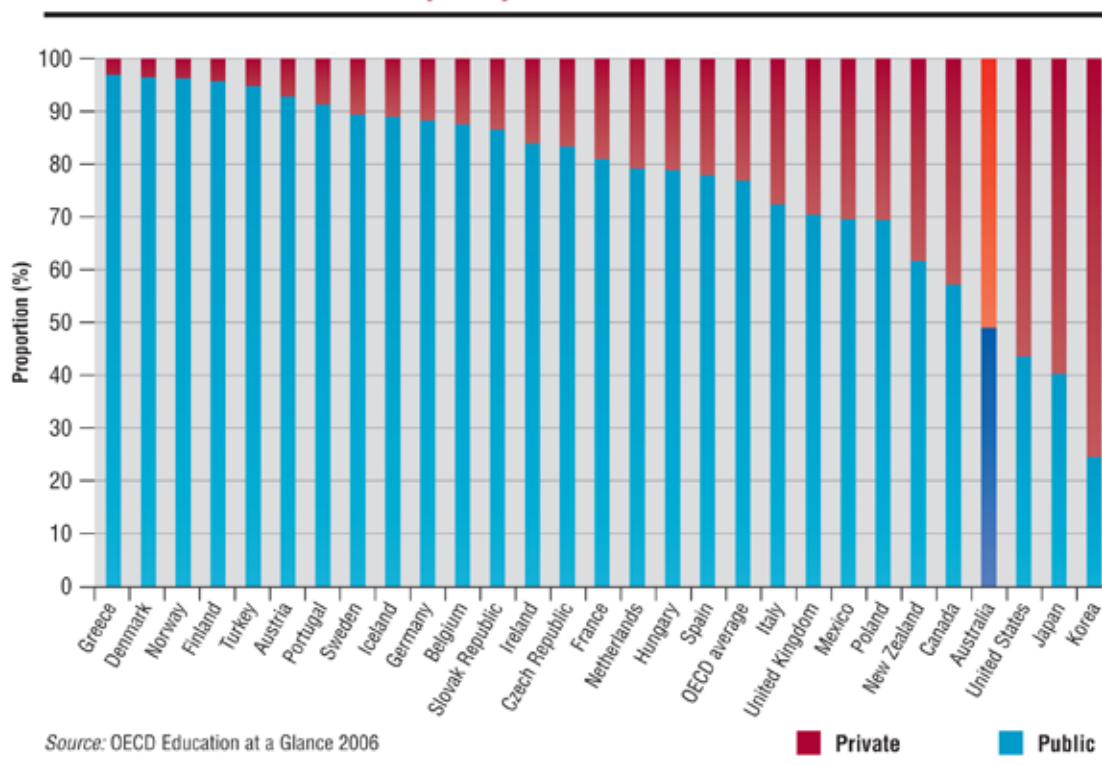
²⁶ Government of South Australia: Department of Further Education, Employment, Science and Education: http://www.innovation.sa.gov.au/sti/glossary/glossary_of_terms Accessed: 17 January 2007

²⁷ Australian Bureau of Statistics (February 2004) *Measuring the Stock of Human Capital for Australia*, Catalogue 1351.055.001

²⁸ OECD, (2006) *Education at a Glance 2006*, p.205

privately – at 52 per cent, compared with 35 per cent in 1995. Even in the United States – where private finance plays an even greater role – there is a substantially higher level of public investment in universities than in Australia.²⁹

Chart 5: Public and private expenditure on tertiary education institutions in OECD countries (2003)

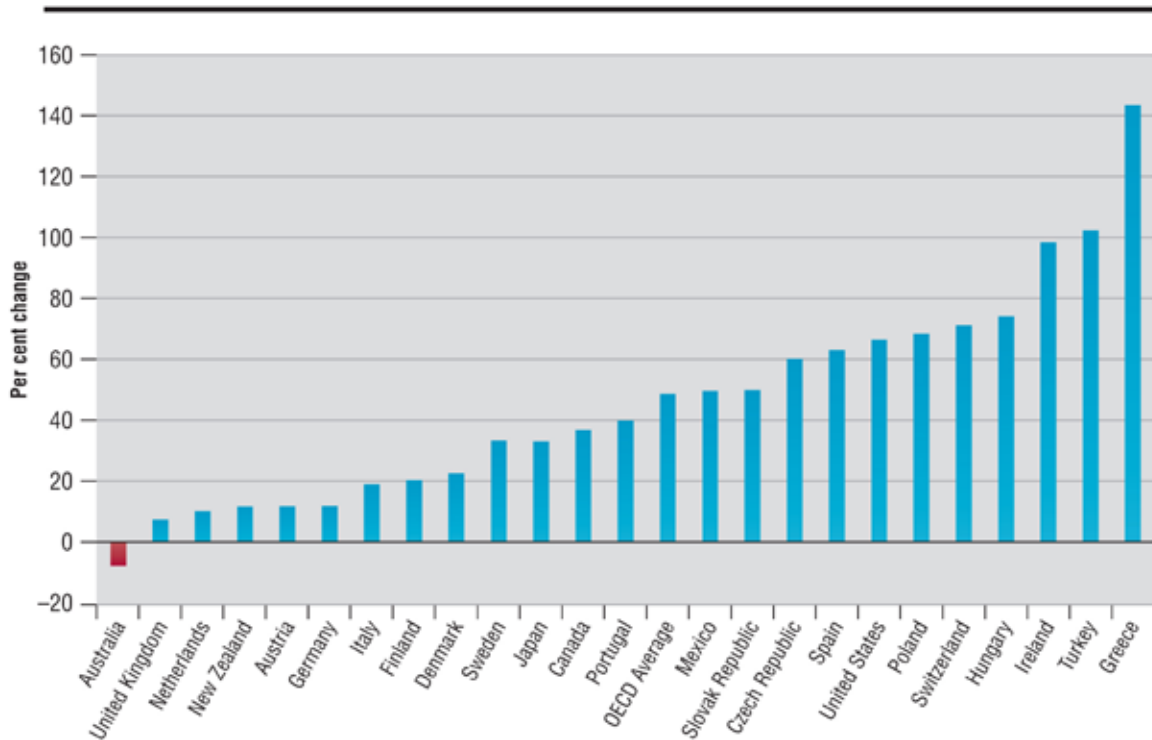


- The relatively low level of public investment in education, and the greatly increased reliance on private finance, is in part explained by the large reductions in education spending implemented by the Commonwealth Government. As Chart 6 shows, Australia is the only OECD nation that has reduced its public investment in tertiary education in the past decade. While other nations have on average increased their public investment in education by 48 per cent, in Australia it has been reduced by 7 per cent. The Commonwealth's policy of reducing public investment in education is so unusual that it has attracted comment from the OECD:

"It is notable that rises in private educational expenditure have not generally gone hand in hand with cuts (in real terms) in public expenditure on education at the tertiary level or at the primary, secondary and post-secondary non-tertiary level... In fact, many OECD countries with the highest growth in private spending have also shown the highest increase in public funding of education. This indicates that increasing private spending on tertiary education tends to complement, rather than replace, public investment. The main exception to this is Australia, where the shift towards private expenditure at tertiary level has been accompanied both by a fall in the level of public expenditure in real terms and by a significant decrease of public subsidies provided to tertiary students."³⁰

²⁹ According to OECD Education at a Glance 2006 (2006, p. 206), public investment in tertiary education is 0.8 per cent of GDP in Australia and 1.2 per cent of GDP in the United States. According to the Business Council of Australia, in its 2002 analysis *Higher Education in Australia: Developing a New Data Framework and International Comparisons and Issues*, this disparity also occurs at the institutional level, with the University of Michigan having revenues 3.7 times those of the similar sized University of Melbourne.

³⁰ OECD (2006) *Education at a Glance 2006*, p.217

Chart 6: Increase in public expenditure on tertiary education since 1995 in OECD countries

Source: OECD Education at a Glance 2006

- Australia's inadequate investment in education is affecting outputs. The World Economic Forum's most recent annual report on global competitiveness reports that Australia's education ranking overall is below competitor countries like Singapore, Malaysia and Taiwan. Science and maths education levels lag even further behind, with Australia ranked 29th globally, behind countries like Singapore, France, India, the Czech Republic and even Tunisia. Similarly, the international tests conducted for the Trends in International Mathematics and Science Study (TIMSS) found that 15 countries outperformed Australia's Year 4 maths students and 13 countries outperformed Australia's Year 8 students³¹. Australia's maths and science education performance has also been criticised by scientists, academics, and industry organisations for eroding Australia's scientific knowledge base, with long term implications for Australia's future research and innovation capacity³².

³¹ See Banks' 2005 address, *op cit*, for further discussion.

³² See comments by CSIRO chief of mathematical and information sciences Murray Cameron, President of the Australian Deans of Science John Rice and Engineers Australia president Rolphe Hartley in *20 years to Fix Science*, The Australian, 17 January 2007.

Table 1: Quality of maths and science education, top 30 countries

Rank	Country/Economy	Rank	Country/Economy	Rank	Country/Economy
1	Singapore	11	Romania	21	Slovak Republic
2	Finland	12	Malaysia	22	Canada
3	Belgium	13	Hungary	23	Korea
4	Switzerland	14	Japan	24	Serbia and Montenegro
5	France	15	Netherlands	25	New Zealand
6	Hong Kong	16	Ireland	26	Lithuania
7	India	17	Israel	27	Austria
8	Czech Republic	18	Estonia	28	Indonesia
9	Tunisia	19	Barbados	29	Australia
10	Taiwan, China	20	Denmark	30	Cyprus

Source: World Economic Forum *Global Competitiveness Report 2006*

*Respondents were asked about maths and science education in their country's schools
(1.0 = lag far behind most other countries, 7.0 = are among the best in the world)

Key Facts: Australia's overall education outcomes

Australia's overall investment in education as a share of GDP is 5.8 per cent – behind 17 other OECD economies.

More than half of the cost of tertiary education is met from private sources – with dependence on private sources leaping to 52 per cent from 35 per cent in 1995.

Since 1995, Australia has been the only OECD country to cut public investment in tertiary education – with a 7 per cent reduction in investment compared with an average increase by other OECD countries of 48 per cent.

The World Economic Forum's latest annual report ranked Australia's science and maths education levels 29th in the world, behind most developed countries and even some developing nations.

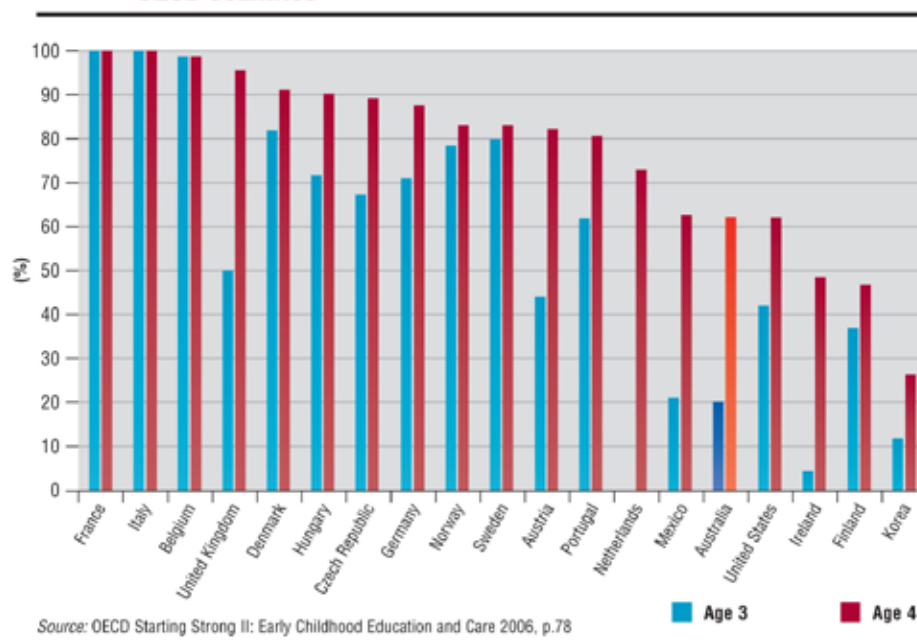
4.2 Early childhood

International comparisons show that Australia's early childhood education performance is poor.³³ While Australian children at age 6 have comparable participation in primary education to their OECD country peers, and Australian children aged 5 have comparable participation rates in education (although in primary, not pre-primary school, in contrast to the OECD norm), Australian children aged 3 and 4 are receiving less educational help at an age that is critical for neurological development and early learning. In 2005:

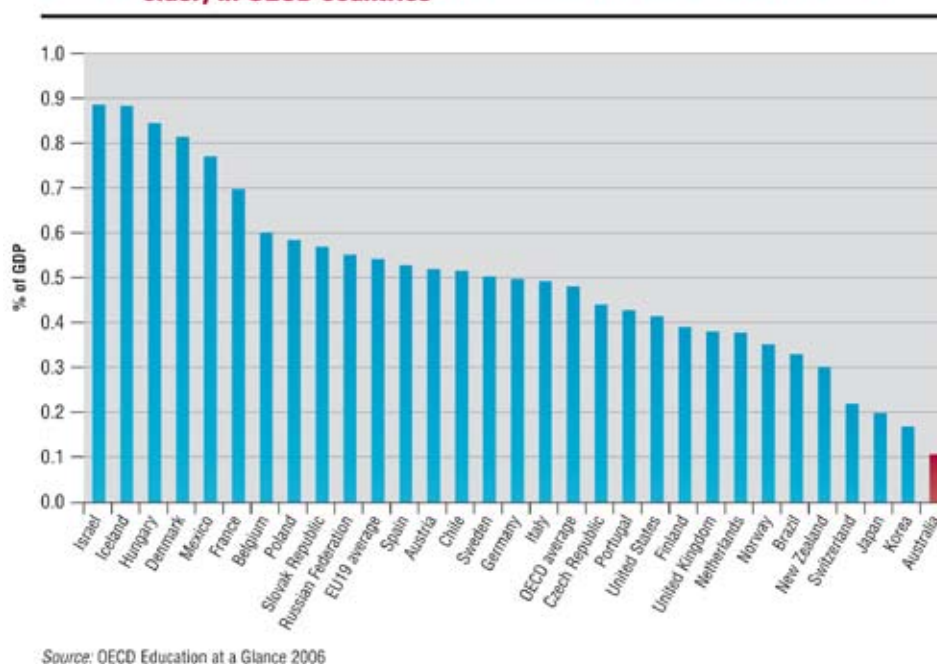
- Four in five Australian children aged 3 did not receive any pre-primary education – one of the lowest results among surveyed countries.
- More than one-third of children aged 4 did not receive any pre-primary education – again leaving Australia near the bottom of the league table³⁴.

³³ OECD (2006) *Starting Strong II: Early Childhood Education and Care*, p78

³⁴ OECD (2006), *ibid*.

Chart 7: Enrolment rates in pre-primary or early development programs in OECD countries

The low level of participation in early childhood education for under-5 year olds is primarily explained by Australia's very low level of investment in early childhood learning. According to the OECD, Australia spends just 0.1 per cent of GDP on pre-school education, compared with an OECD average of 0.5 per cent³⁵. While there are difficulties in making cross-country comparisons because of differences in the services provided for young children, it is clear that Australia is behind in its investment in early childhood learning.

Chart 8: Expenditure on pre-primary education (for children 3 years and older) in OECD countries

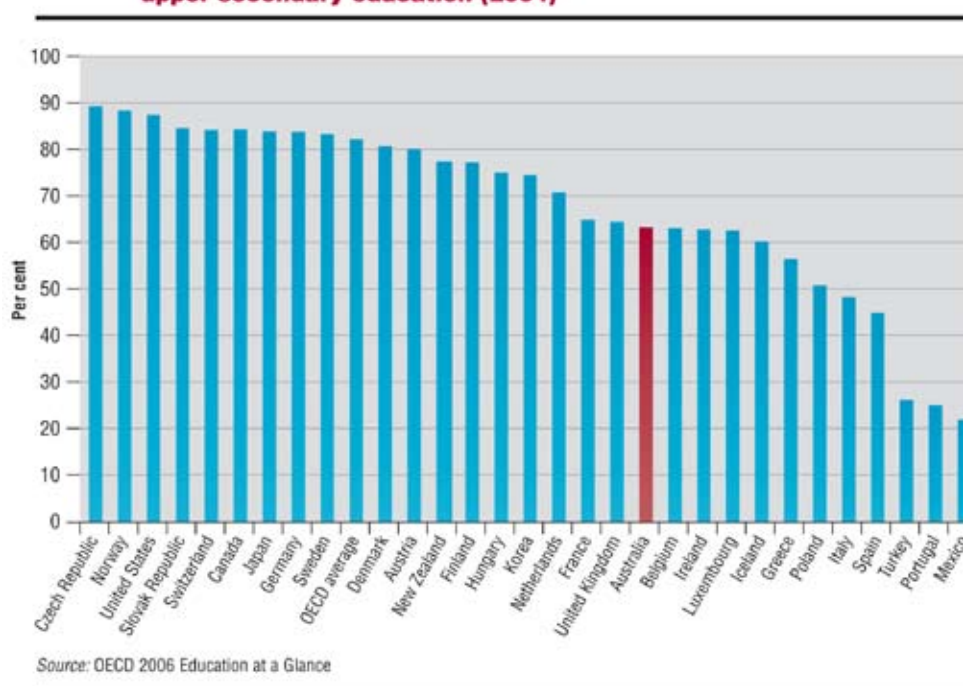
³⁵ OECD, (2006) *Education at a Glance 2006*, p207

4.3 School age children

A wide range of data indicates that much more can be done for Australia's school age children to reach their potential. Australia has one of the lowest levels of retention for secondary school students. According to ABS data³⁶, Australia's school education surged in the 1980s and 1990s, with school retention rates almost doubling from 38.8 per cent in 1980 to 74.4 per cent by 2000. But after peaking in 2004 at 77.2 per cent, the long term increase in the retention rate has now slipped back, falling to 76.5 per cent in 2005. As the Commonwealth Treasury has noted, while Australians have increased their educational attainment in recent decades, that has only brought us up to the OECD average.³⁷

The rising share of the Australian population completing high school (described in OECD analysis as 'upper secondary education') is reflected in the higher attainment levels among younger age cohorts. For example, 77 per cent of 25-34 year olds have finished high school compared with only 62 per cent of 45 to 54 year olds. But both of these outcomes remain low by OECD standards. While Australia's high school completion rate for the younger cohort was above that of a range of Southern European countries, it was well behind leading economies in East Asia, North America, Scandinavia and Continental Europe, suggesting that increasing school retention rates present a major opportunity for policy makers to improve Australia's education outcomes.

Chart 9: Proportion of 25–64 year olds that have attained at least upper secondary education (2004)



The consequences of low retention rates include restricted access to further educational opportunities, reduced participation and higher rates of unemployment. The Dusseldorp Skills Forum Report, *How Young People are Faring 2006* reports that nearly 30 per cent of school leavers, 26 per cent of 18 year olds, 24 per cent of 19 year olds and 23 per cent of young adults are not fully engaged in learning or work.³⁸

Around one in ten students also suffer a serious level of educational disadvantage, according to the 2004 *National Report on Schooling in Australia*:

- Around 7 per cent of all Year 3 students do not meet relevant reading, writing and numeracy

³⁶ See ABS (May 2006) *Schools Catalogue* 4221.0, table 11

³⁷ Gene Tunny, 'Educational attainment in Australia', *Treasury Roundup* 2006

³⁸ Dusseldorp Skills Forum (November 2006) *How Young People are Faring 2006: Key Indicators*

benchmarks.

- Around 10 per cent of Year 5 primary school students do not meet each of the literacy benchmarks.
- Around 10 per cent of Year 7 students are below the benchmark level for reading and more than 8 per cent achieve below the benchmark level for writing. Nearly 20 per cent of Year 7 students are not meeting the benchmark levels.

4.4 Skills and vocational education

The growing problem of skill shortages in many occupations has focused attention on Australia's vocational education and training system in recent years. Skill shortages have become a significant economic issue because of the consequences of significant shortages – including the delay of major infrastructure projects, increased costs and upward pressure on interest rates. Among several warnings that the Reserve Bank has made concerning skill shortages, the Bank warned in November 2006 that, “shortages are widespread across most industries and skill levels”, adding significantly to cost pressures.

According to estimates from Australian Industry Group in 2006, Australia will need 270,000 more skilled workers over the next ten years. Most of these workers will need to be trained at TAFE colleges but, since 1998, 300,000 people have been turned away from TAFE colleges.

The shortage of skilled workers appears to reflect a long term under-investment in vocational education and training. VET funding is lower in real terms than it was in Labor's last year in office, 1996, as a result of a decision by the Howard Government in 1997 to reduce funding to Australia's principal vocational education system, TAFE. The number of traditional trade apprentices actually dropped between 2000 and 2003.

In addition, in the period since 1996, vocational education and training policy has developed separately from policy for higher education, with both suffering from inadequate resourcing. This policy gap has contributed to Australia not training enough high level technicians and associate professionals needed for a changing economy.

4.5 University education

Since 2001, almost 150,000 eligible applicants have been turned away from universities³⁹ - and Australia does not have plans to dramatically increase participation in tertiary education to boost Australia's human capital.

Australia has been the only developed country to reduce its public investment in tertiary education over the last decade. Since 1995, Australia's public investment in universities has gone backwards by 7 per cent, compared with an increase by other OECD countries of 48 per cent. The university sector has experienced especially significant reductions in public investment in the past decade, since higher education outlays were initially reduced by \$1.8 billion in 1996. The Australian Vice Chancellors' Committee has frequently raised concerns about the impact of financial constraints on the quality of teaching and the educational outcomes for graduates. These constraints are reflected in the fact that student fees and charges that accounted for 11 per cent of revenue in 1994, contributed 22 per cent by 2005, while university dependence on international fee income increased to 15 per cent of total revenue, an all-time record.

As a result of substantial fee increases, university students now face the prospect of a large, long-lasting debt burden after they undertake their studies. Students are now paying around \$20,000 for a science degree, \$40,000 for a law degree and almost \$15,000 for an arts degree. Since 1996-97, the debt burden for university students has more than tripled from \$4.5 billion to nearly \$13 billion in 2005-06. As public investment in tertiary education has fallen, universities have had little option but to sharply increase course fees, creating a growing disincentive to study for those who can least afford the debt burden.

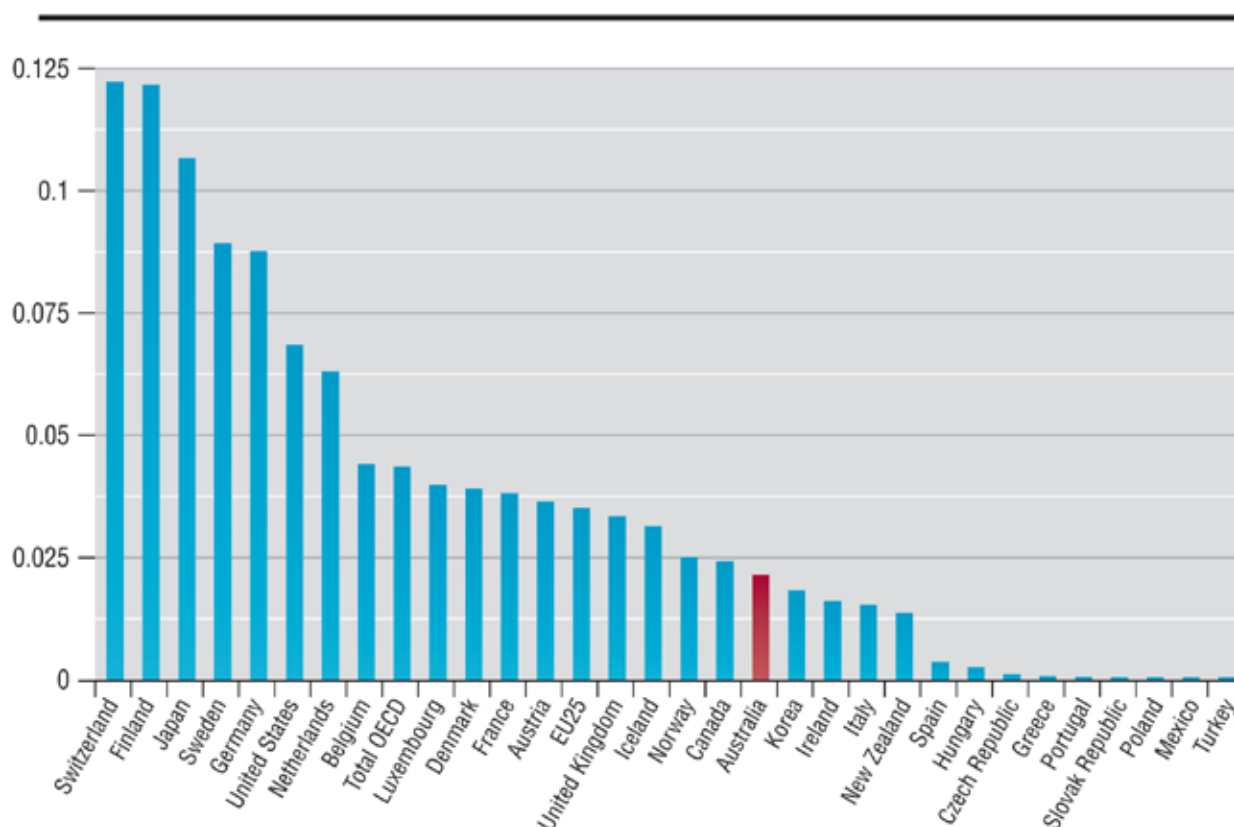
³⁹ Australian Vice-Chancellors' Committee (2006) *Survey of Applications for Undergraduate University Courses*, p.15

4.6 Research

A critical driver of a nation's research capacity is the strength of its academic institutions. Universities, as research hubs with major research personnel resources, are critical to building Australia's research capacity. Public sector leadership in research is particularly important in Australia, whose remoteness and lack of scale work against its development into a global centre for research and innovation.

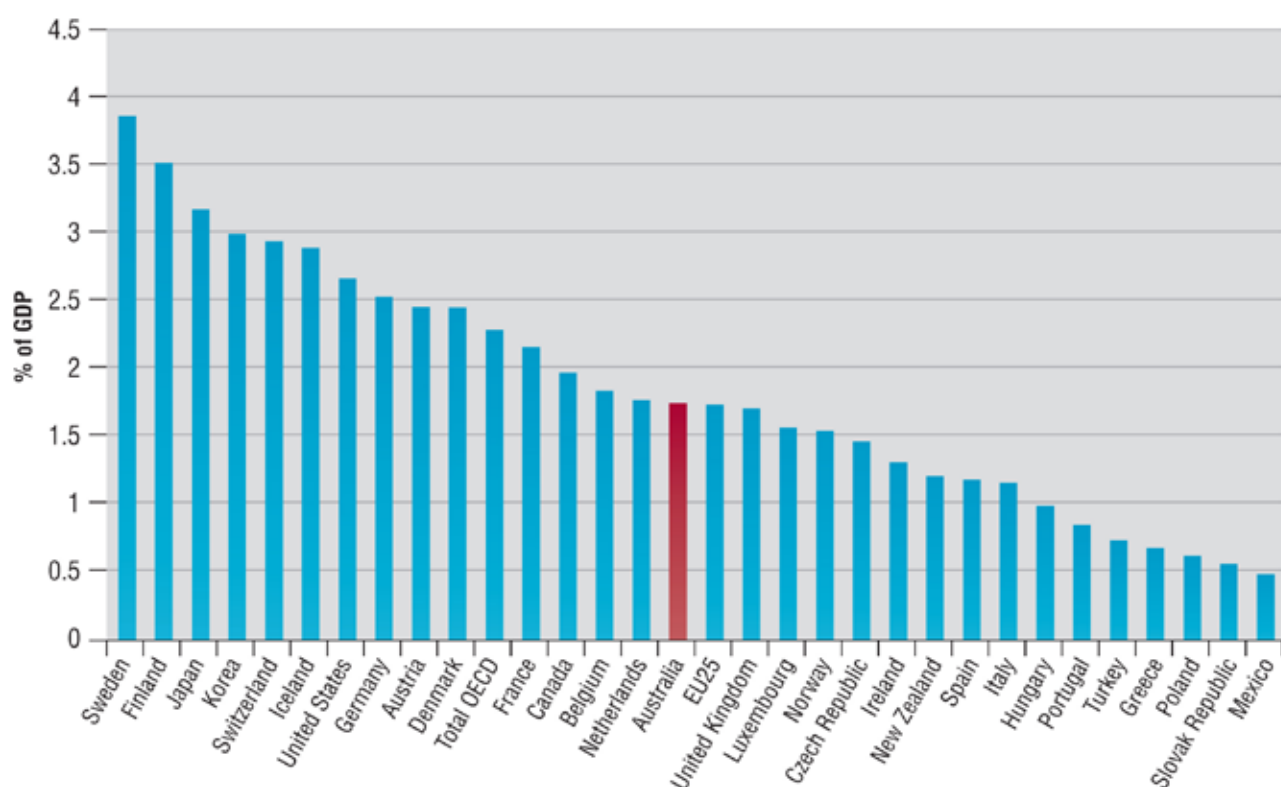
Many international surveys suggest that by world standards, Australia's university sector is not driving innovation as well as in many competitor nations. Such surveys, which measure research output (but teaching and graduate outcomes as well) show that Australia's universities are poorly rated compared with their counterparts in North America, Europe and East Asia. The 2005 Times Higher Education Supplement, for example, rated only one Australian university in the world's top twenty – the University of Melbourne (at 19th place). According to the Shanghai Jiao Tong University's Institute of Higher Education ranking system, Australia has two universities in the world's top 100 – the Australian National University and the University of Melbourne. In this survey, most of Australia's top 16 universities did not even rank in the top 200. Likewise, Australia's research output, measured by number of patent families per thousand capita population, is very low by international standards.

Chart 10: Number of patent families per thousand capita population in OECD countries



Source: OECD Main Science and Technology Indicators 2006

Significant under-investment in Australia's research capacity has played a crucial role in Australia's poor research outcomes. Investment in research and development in other OECD countries is around a quarter higher than in Australia, which invests only 1.77 per cent of GDP.

Chart 11: Gross domestic expenditure on R&D in OECD countries

Source: OECD Main Science and Technology Indicators 2006

The Prime Minister's Science, Education and Innovation Council Working Group on Asia has highlighted continuing inadequacies in Australia's investment in research infrastructure on a scale to enable Australia to be internationally competitive in research:

"The universities need substantial funding to address their global competitiveness and capture opportunities. They need this funding to build world class infrastructure to attract the best researchers in their field..."

The Australian Vice-Chancellors' Committee⁴⁰ has recommended that Australia pursue a national innovation strategy that includes, among other targets, the goal of increasing Australian investment in research and innovation to 2 per cent of GDP by 2010 and to 3 per cent of GDP by 2020. The Commonwealth Government has not adopted this strategy.

⁴⁰ AVCC Submission to the Productivity Commission Research Study on Public Support for Science and Innovation, August 2006.

5. The case for change: The economic value of human capital investment

There is a clear correlation between Australia's declining productivity growth and evidence of Australia's under-investment in human capital formation. There is a compelling case for change. Continued under-investment in education across the spectrum is likely to further constrain the development of Australia's human capital. For the nation, this will mean that productivity growth continues to lag behind competitors, workforce participation rates will be held back and the economy will not expand at its potential growth rate. For individuals, it will mean lower incomes, less secure employment, and fewer career opportunities.

There is another way forward for Australia. A fresh commitment to invest in education and build human capital offers substantial benefits for the national economy and for individuals. It therefore must be central to Australia's economic strategy for sustaining prosperity in coming decades. There is now incontrovertible evidence that education should be understood as an economic investment and not simply a social expenditure.

There is compelling evidence of a close relationship between increased human capital formation and higher productivity growth. Two recent Australian studies have also quantified this link:

- Access Economics has calculated that if the Australian workforce had just 0.15 years of extra education and training – achieved by an increase of 50,000 students staying at school or in apprenticeships – we could increase productivity in the Australian economy by 0.62 per cent and economic growth by 1.1 per cent by 2040⁴¹.
- Likewise, ANU economist Steve Dowrick estimates that if Australians had one further full year of extra schooling (as happens in the United States and Scandinavian economies), this would boost economic growth by 0.3 percentage points and boost productivity growth by at least 0.3 percentage points every year⁴².

Beyond these studies, there is increasing consensus across Australia of the central importance of greater human capital investment.

In recent years, there has also been an increasing recognition of human capital and education's contribution to workforce participation. People with better education and training tend to participate in the workforce for longer and are more able to adapt to change in the workplace. As Chart 12 shows, Australians with post-school or degree qualifications have longer working lives than those with no post-school qualifications. With greater earning potential both through their life and towards the end of their careers, people with more years in education are less likely to be discouraged from looking for work and more likely to stay in work longer. Access Economics estimates that increasing average levels of education by 0.15 years would boost the labour force participation rate by 0.48 per cent⁴³. With a greater proportion of the population in work, countries like Australia will be able to better manage the significant challenges of demographic change.

⁴¹ Access Economics (May 2005) *The Economic Benefit of Increased Participation in Education and Training*

⁴² Dowrick, Steve (April 2002), *Investing in the Knowledge Economy: implications for Australian economic growth*, Paper prepared for Melbourne Institute's Economic and Social Outlook Conference.

⁴³ Access Economics (May 2005) *op cit*

The growing consensus on the economic imperative of investing in human capital

Increasing the workforce's level of education by 0.15 years has been estimated by economists to boost productivity by 0.62 per cent, workforce participation by 0.48 per cent, and economic growth by 1.1 per cent by 2040.

An additional year's schooling could boost productivity and economic growth by 0.3 percentage points or more.

"A high quality and responsive education system is vital to increasing skills which, in turn, boost labour force participation and productivity."

Commonwealth Treasury, 2006-07
Budget Paper 1, Statement 1

"So education is increasingly becoming the 'engine room' of modern economies. If we get this part of the economy right, most other things ought to fall into place, because increased investment in education boosts both productivity...and participation."

Access Economics, May 2005 "The Speed Limit: 2005 – 2025"
Report prepared for the Business Council of Australia

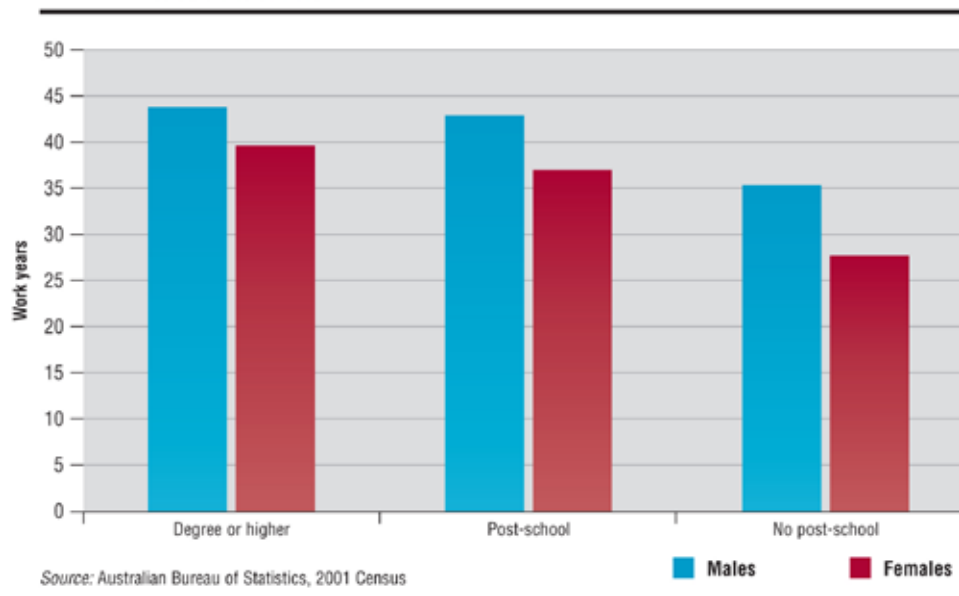
...[T]he demands of the 'information age' will put a particular premium on post-school training, to acquire necessary high-level generic and specific skills (Banks 1998; see also West 1998). However, primary and secondary education is clearly the bedrock on which any subsequent learning is based. It is difficult to overstate the economic importance of quality school education."

Productivity Commission Chairman, Gary Banks, September,
Comparing school systems across Australia, 28 September 2005

"People with higher levels of educational attainment and skills have higher participation rates and tend to stay in the workforce for longer. Raising the average level of educational attainment (and ongoing skill development) can also deliver higher levels of productivity."

Business Council of Australia, 2006
"Locking in or losing prosperity: Australia's choice, p. 26

Chart 12: Average years of workforce participation by qualification level in Australia



Moreover, the benefits of education go well beyond the macro economic benefits of boosting productivity, participation, growth and living standards. Individuals also benefit greatly from increasing their levels of education and training. Increased skills and education help individuals to better their own lives, to broaden their employment options and find more satisfying work, enjoy greater job security and earn more money⁴⁴. Purely financial cost/benefit analysis of investment in education shows that the dividend is substantial and that money invested in education is a wise investment⁴⁵.

Key Facts: The case for change

Increasing the workforce's level of education by 0.15 years has been estimated by economists to boost productivity by 0.62 per cent, workforce participation by 0.48 per cent, and economic growth by 1.1 per cent by 2040.

An additional year's of schooling could boost productivity and economic growth by 0.3 percentage points or more.

⁴⁴ According to the OECD, those who had not completed secondary education earned about 15 per cent less than those who do. Those who complete tertiary studies are on average paid almost 50 per cent more. OECD (2004) *Education at a Glance*, OECD Indicators 2004

⁴⁵ Heckman, James (1999) *Policies to Foster Human Capital*, NBER Working Papers 7288, University of Chicago Department of Economics, p.8

6. Conclusion: Realising our potential

A growing body of evidence shows that long term economic outcomes are significantly influenced by levels of human capital. A new direction is emerging for advanced economies seeking sustained productivity growth and competitive advantage on the new global playing field. Investing systematically in the capabilities of our people, throughout the lifecycle, can multiply the opportunities to build on our existing economic strengths, and compensate for decline in traditional areas of economic activity.

To be 'good enough' is no longer acceptable for Australia's national performance. Australia cannot afford to be part of the trailing pack of nations - it must be up there with the leading handful in every major area. We cannot afford to waste the talent and potential of any Australian.

We must now embrace a new national vision – for Australia to become the most educated country, the most skilled economy and the best trained workforce in the world.

We will consult widely on our plans and work through partnerships with other governments and sectors to achieve these reforms. But we will not accept compromise in the opportunities or the quality of services offered to Australians.

Labor's commitment to lift the quantity of Australia's investment in education and the quality of education outcomes will make education one of the three main priorities of the Federalism agenda of a future Federal Labor Government.

The Commonwealth's primary role in Australia's education system is to provide national leadership. This means working cooperatively and creatively with the States and Territories and with the non-government sector to deliver better national outcomes and eliminate duplication and overlaps between the Commonwealth and the States.

In the period ahead, Labor will release a series of detailed policies aimed at giving effect to this vision.

Education is the platform on which our future economic prosperity will rest. It is the focus for our future aspirations. With a Labor government, it will be the first priority for investment and reform.

