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Professor McGaw returned to Australia at the end of 2005 from Paris where he had been Director for Education at the Organisation for Economic Co-operation and Development (OECD). He had previously been Executive Director of the Australian Council for Educational Research (ACER) from 1985 to 1998 and Professor of Education at Murdoch University in Perth Western Australia from 1976 to 1984.

Professor McGaw is a Fellow of the Academy of the Social Sciences in Australia, the Australian Psychological Society and the Australian College of Educators. He received an Australian Centenary Medal in 2001 and was appointed an Officer in the Order of Australia in 2004.


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Education pays for countries and individuals…

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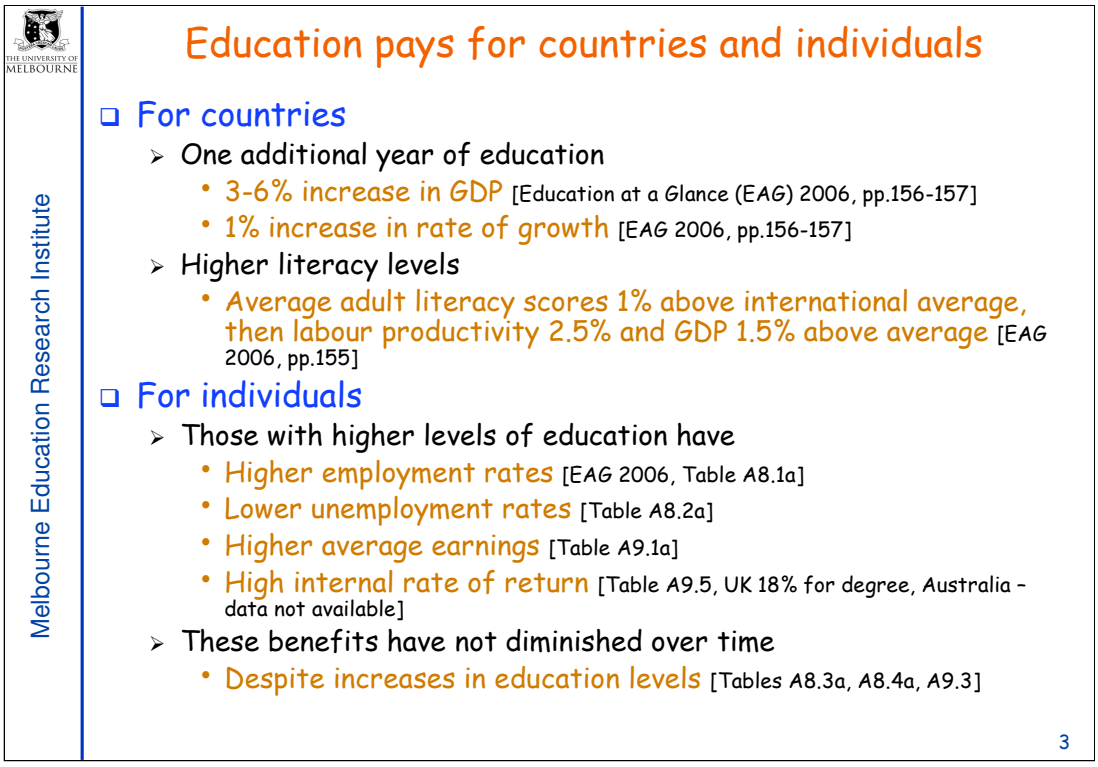

International comparative analyses undertaken by the Organisation for Economic Co-operation and Development (OECD) make clear the extent to which higher levels of education pay off for countries and individuals.

Studies of the payoff for countries focus on the relationship between the stock of education and the long-run level of GDP or the stock of education and the rate of growth of GDP. The general conclusion advanced by the OECD is that an increase of one year in the average level of education of the working-age population raises GDP by 3 to 6% and increases the growth rate by around 1%. There is some evidence that the pay-off diminishes as the average level of education rises above levels that many OECD countries exceed (OECD *Education at a Glance 2006*, p.157).

When measured levels of literacy are used as the indicator of human capital instead of years of education, similar relationships are found. Coulomb et al. report that a country able to attain literacy scores 1% higher than the international average will achieve levels of labour productivity and GDP per capita that are 2.5 and 1.5% higher, respectively, than those of other countries.

The benefits for individuals lie in higher employment rates, lower unemployment rates, higher average earnings and high internal rates of return. For example, the rate of return for an individual completing upper secondary education is 25% for males and 30% for females in the United Kingdom and 14% for males and 16% for females in New Zealand. The rates of return for those completing a university degree are 17% for males and 20% for females in the United Kingdom and 9% for males and 13% for females in New Zealand. Data for Australia are not available.


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Relatively high proportion in Australia fails to obtain sufficient education…

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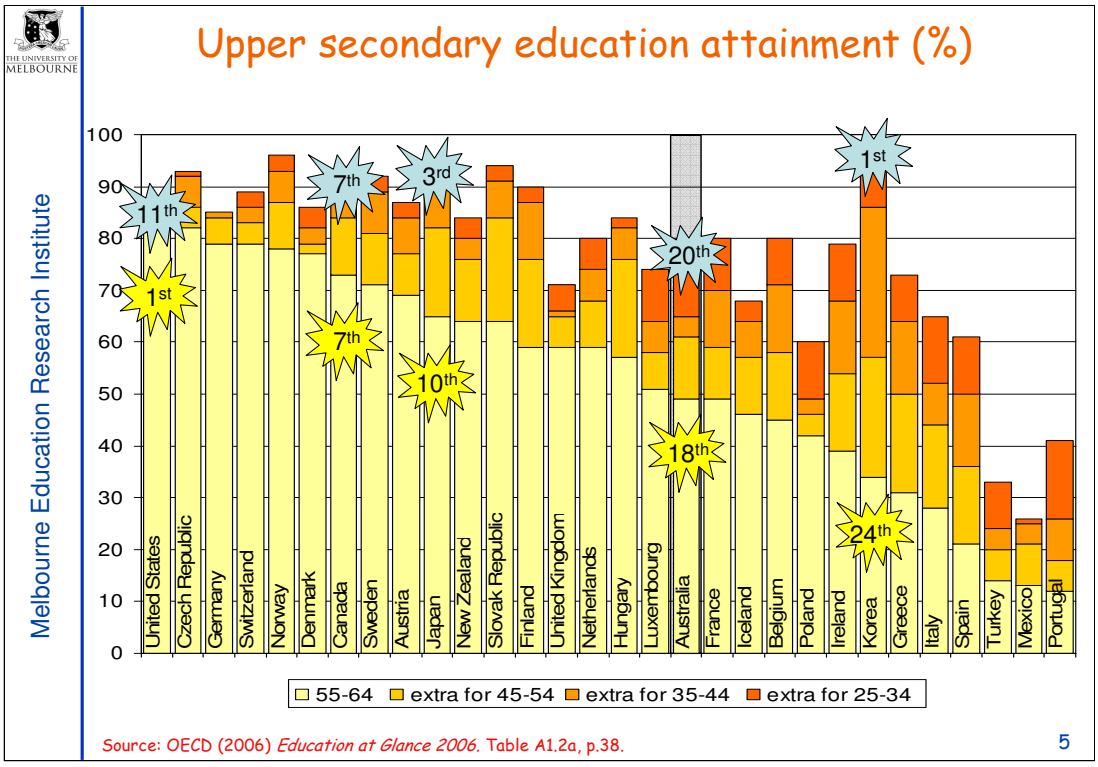


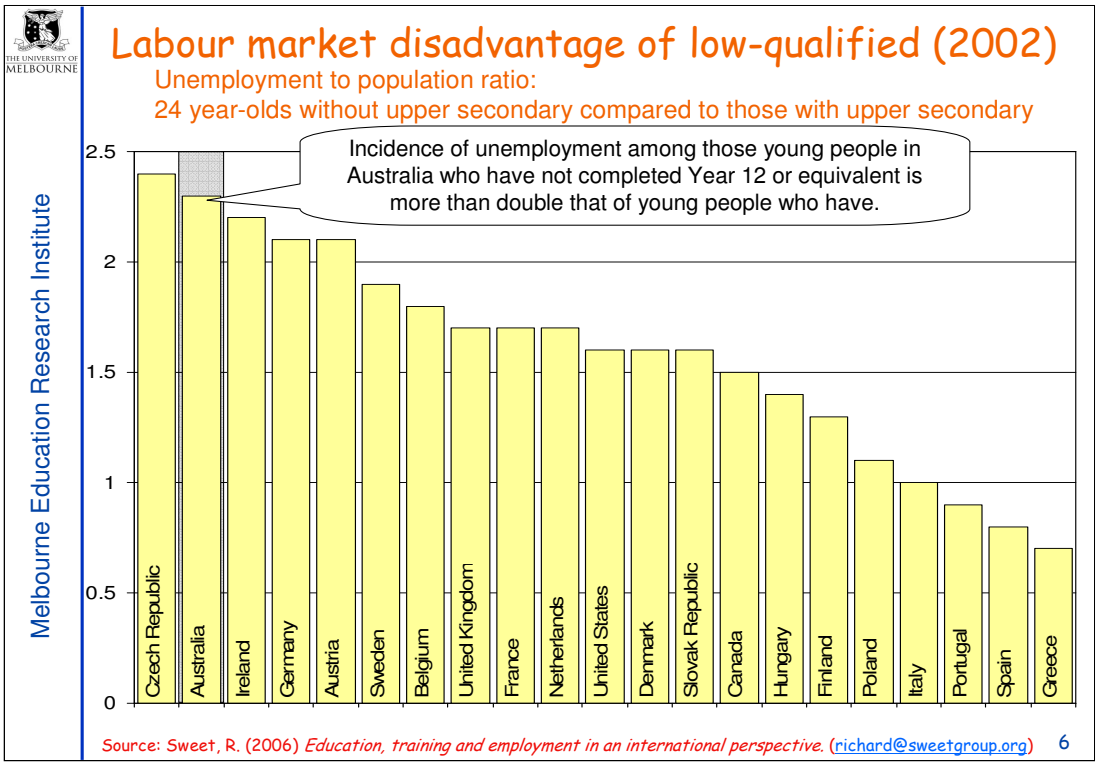
There are no internationally comparable data on trends in completion rates for upper secondary education but a picture for past decades can be obtained from the percentages of the population in different age brackets that have attained this level.

The percentage of 55-64 year-olds who have attained upper secondary education indicates completion rates 37-46 years ago. The picture is only approximate because some will have attained this level as adults, long after having left initial education, and also because some of the population will not have survived to this age-group. Younger groups provide corresponding pictures for more recent decades.

The figure above shows the attainment rates for 55-64 year-olds in OECD countries and, for successively younger age groups, the increase in the rate compared with the next oldest group. The rates for 25-34 year-olds reveal that, by 7-16 years ago, 17 of the 30 OECD countries had achieved attainment rates of 80% or higher. Australia was not among them.

The Republic of South Korea started from a low base but grew quickly, rising from 24th to 1st. Over the same period, Japan rose from 10th to 3rd. The US started from a high base but grew quite slowly, slipping from 1st to 11th. Australian rates have grown relatively slowly from a comparatively low base, with the rank slipping marginally from equal 18th to 20th. Meanwhile Canada held its ranking at 7th.

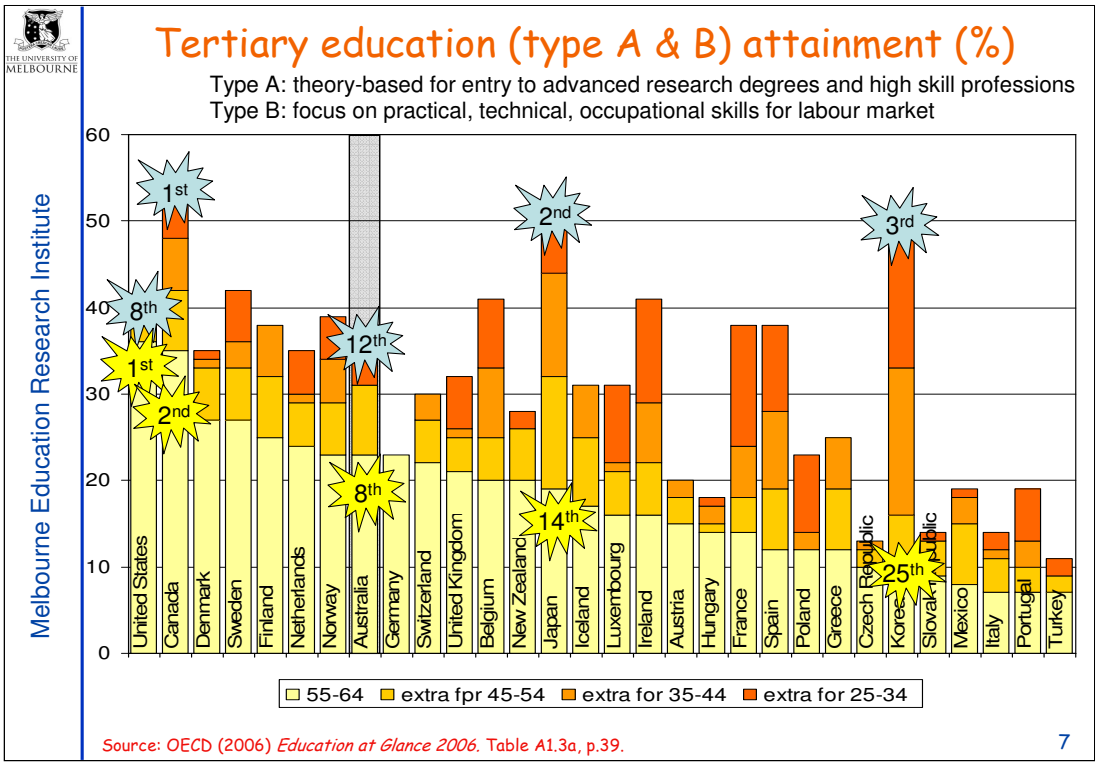
In the mid-1960s, South Korea had a GDP per capita equivalent to that of Afghanistan and behind all the countries of Latin America. South Korea is now a Member of the OECD, with a GDP per capita that just below the top two thirds of the Members. Education reform and a deep national commitment to education and skill development are recognised as key drivers of this remarkable economic growth.



The negative impact of failing to complete upper secondary education or its equivalent is evident in the labour market consequences, as Richard Sweet recently documented, as shown. Sweet concludes:

"There is normally an inverse relationship between the incidence of low qualifications and the penalty that those with low qualifications suffer in the labour market. In countries where nearly all complete upper secondary education, the cost of being one of the handful not to do so is normally high. Where many do not complete high school, the labour market consequences are generally less. However Australia seems to have the worst of both worlds: both a relatively high number of young people without an upper secondary qualification or better, and these young people being at a significant disadvantage in the labour market. The result … is that the penalty for not completing Year 12 or its equivalent is one of the highest in the OECD. The incidence of unemployment among those without Year 12 or its equivalent is more than twice that among those who have completed upper secondary education. … [I]n Australia's labour market, demand for skills and qualifications is high, and so the penalty for lacking these is substantial."

(See Sweet, R., 2006, Education, training and employment in an international perspective, Paper presented at a Brotherhood of St Laurence Seminar, New Transitions: Challenges Facing Australian Youth, Melbourne, August 2006.).



Trend data on completion of tertiary education can be estimated in same manner as that used earlier to estimate a trend for the completion of upper secondary education.

The figure above shows the attainment rates for 55-64 year-olds in OECD countries and, for successively younger age groups, the increase in the rate compared with the next oldest group.

Over the period, Canada rose from 2nd to 1st, Japan from 14th to 2nd and the Republic of South Korea from 25th to 3rd, while the US slipped from 1st to 2nd and Australia fell from 8th to 12th.

The rates are for the completion of either a tertiary type A or a tertiary type B qualification. These are defined in the Glossary to the OECD Education at a Glance 2006 which is available in full at www.oecd.org/edu/eag2006.

“Tertiary-type A programmes (ISCED 5A) are largely theory-based and are designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as medicine, dentistry or architecture. Tertiary-type A programmes have a minimum cumulative theoretical duration (at tertiary level) of three years’ full-time equivalent, although they typically last four or more years. These programmes are not exclusively offered at universities. Conversely, not all programmes nationally recognised as university programmes fulfil the criteria to be classified as tertiary-type A.”

“Tertiary-type B programmes (ISCED 5B) are typically shorter than those of tertiary-type A and focus on practical, technical or occupational skills for direct entry into the labour market, although some theoretical foundations may be covered in the respective programmes. They have a minimum duration of two years full-time equivalent at the tertiary level.”

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Australia spends relatively less on education and requires a relatively high private contribution…

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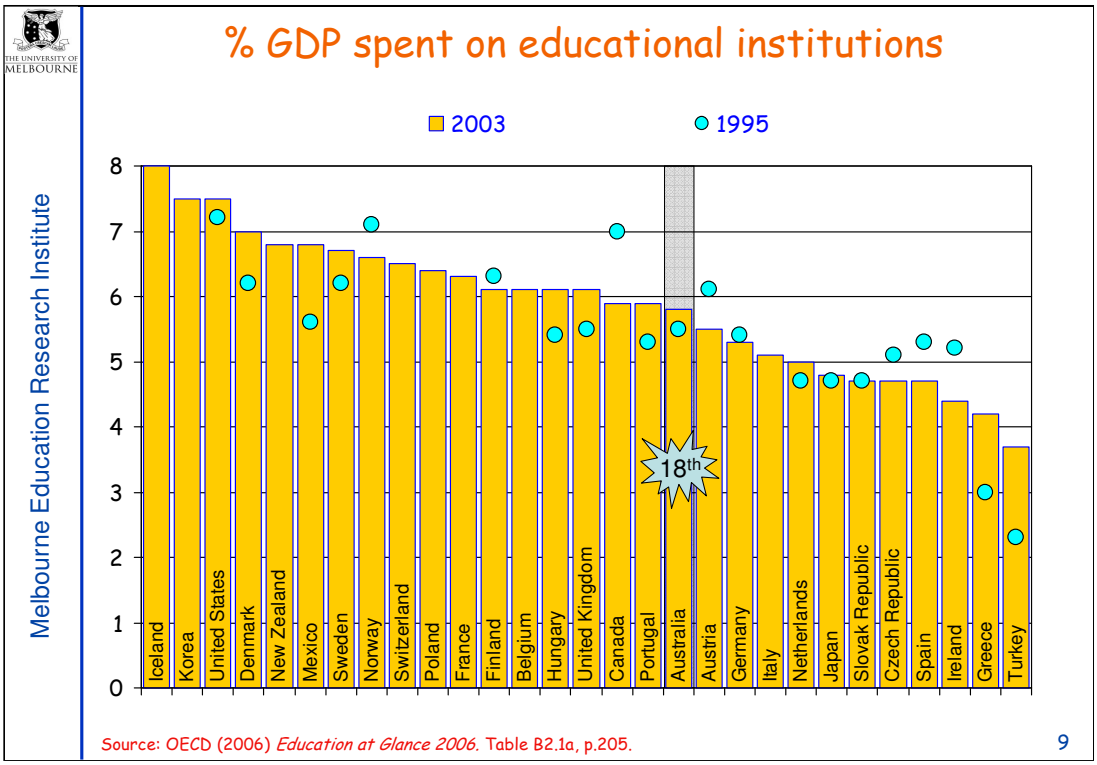
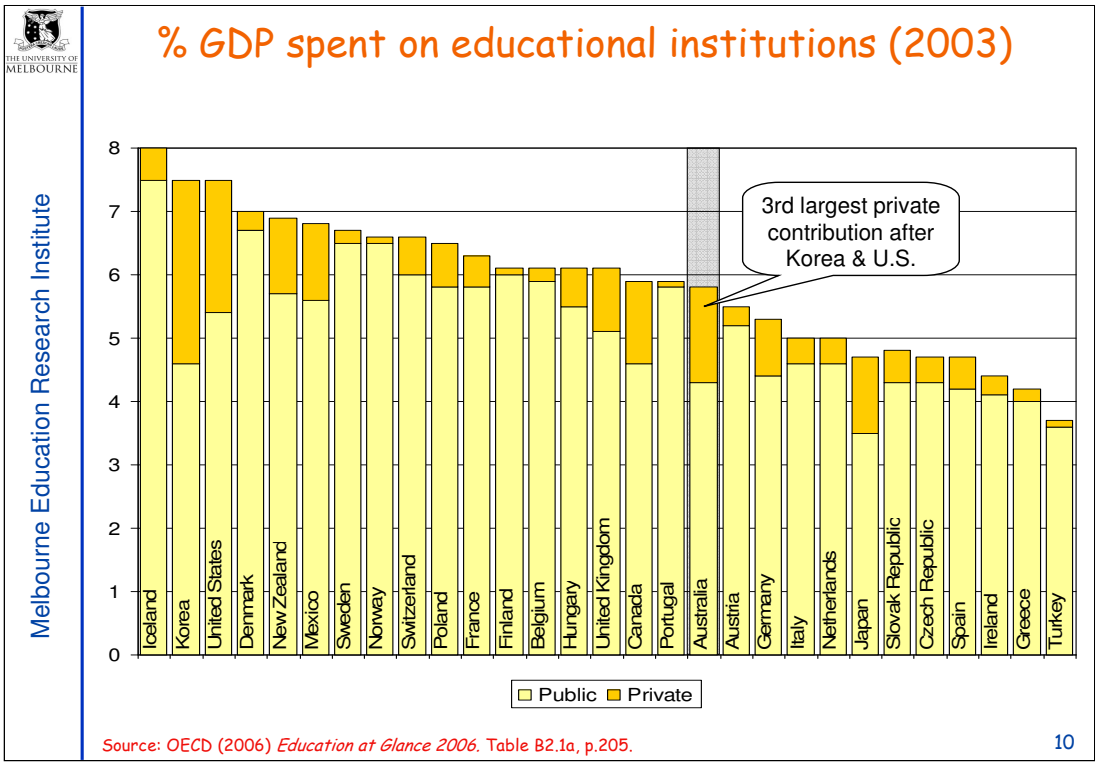


Australia ranked 18th among the 30 OECD countries in the percentage of GDP spent on education in 2003, the latest year for which comparable data are available. Australia spent 5.8% or GDP, compared with 8% in Iceland, 7.5% in Korea and the United States and 7% in New Zealand.

Among the 21 countries for which data are also available for 1995, Australia was one of 13 that increased the percentage of GDP spent on education between the two years.



While Australia ranked 18th among the 30 OECD countries in the percentage of GDP spent on educational institutions in 2003, it ranked 3rd in the proportion of the expenditure drawn from private sources. Of the total of 5.8%, 4.3% was provided from public funds and 1.5% from private funds.

Only the Republic of South Korea (with 4.6% from public funds and 2.9% from private funds, yielding a total of 7.5%) and the United States (with 5.4% from public funds and 2.1% from private funds, also yielding a total of 7.5%) depended to a greater extent on private funding of educational institutions.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Benefits flow to the more advantaged to a greater extent than in many other countries…

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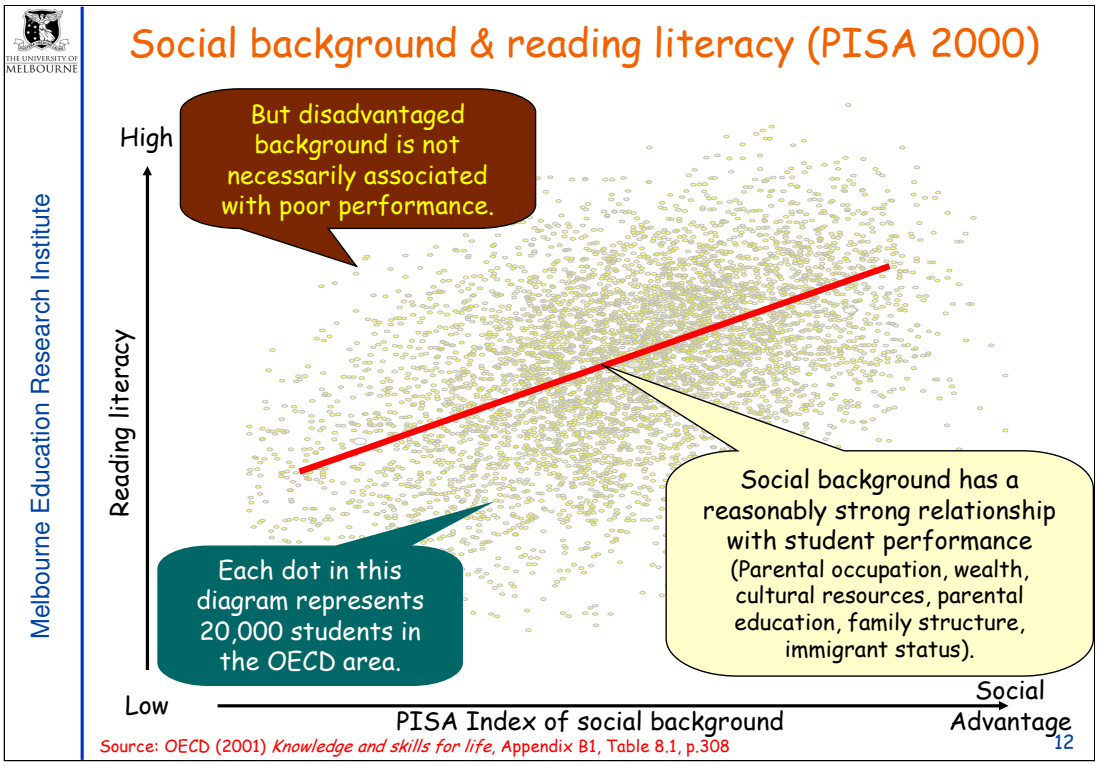


The evidence above on the equity of the outcomes of education systems is drawn from the OECD's Programme for International Student Assessment (PISA) for which details are available on www.pisa.oecd.org.

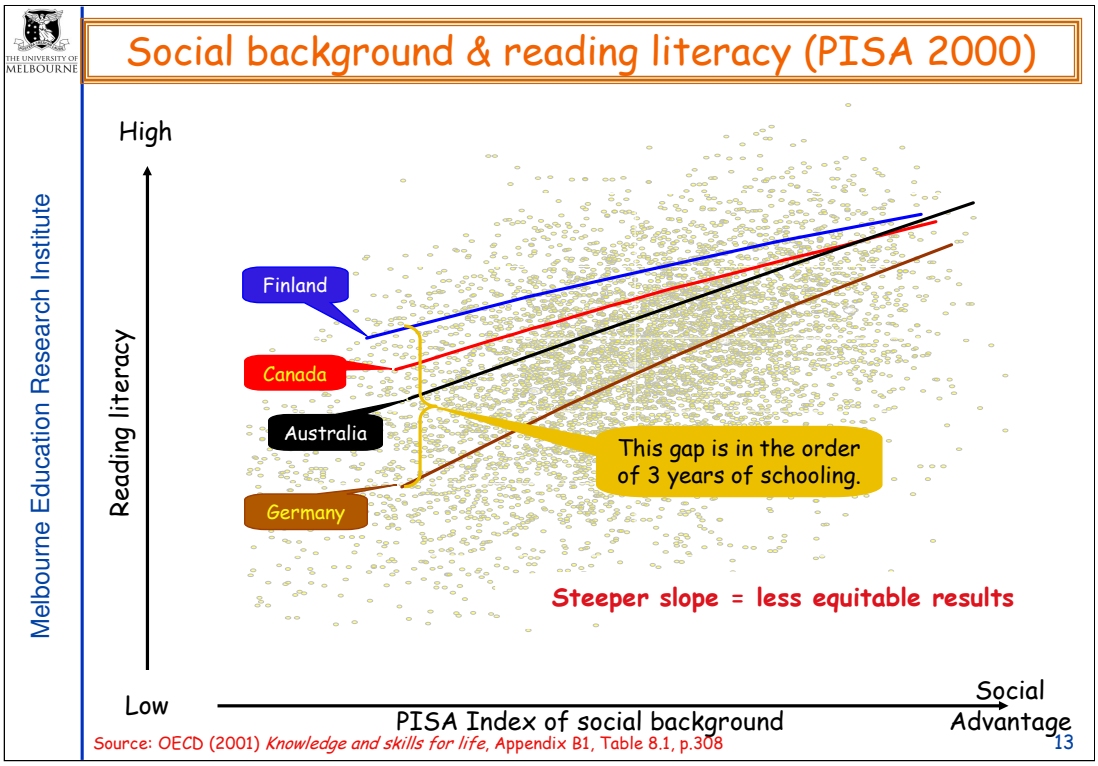
The 15-year-olds involved in PISA complete a questionnaire that collects information important for the interpretation and analysis of the results. Students are asked about characteristics, such as gender, economic and social background, and activities at home and school.

The information on economic and social background – parents' education and occupation, cultural artefacts in the home – permit the construction of an index of social background that ranges from socially disadvantaged to socially advantaged. This scale is comparable across countries.

The relationship between social background and reading literacy in PISA 2000 is shown in the figure above in which the results of the 265,000 15-year-olds in the sample on both variables are plotted. The correlation is relatively high (around 0.45) indicating quite a strong relationship between the two variables. The slope of the regression line that summarises the relationship is quite steep, indicating that increased social advantage, in general, pays off with considerable increase in educational performance.

It can, nevertheless, be seen that there are many exceptions – socially advantaged individuals who do not perform well (towards the bottom-right of the graph) and students from disadvantaged backgrounds who perform well (towards the top-left of the graph).

This result has been long established in research in many individual countries and it can lead to a counsel of despair. If the relationship between social background and educational achievement is so strong, education can seem to be impotent, unable to make a difference. There is other research evidence that provides assurance that schools can make a difference to the life chances of their students but the PISA also provide additional insights because it is possible to compare regressions lines of the type above for individual countries.

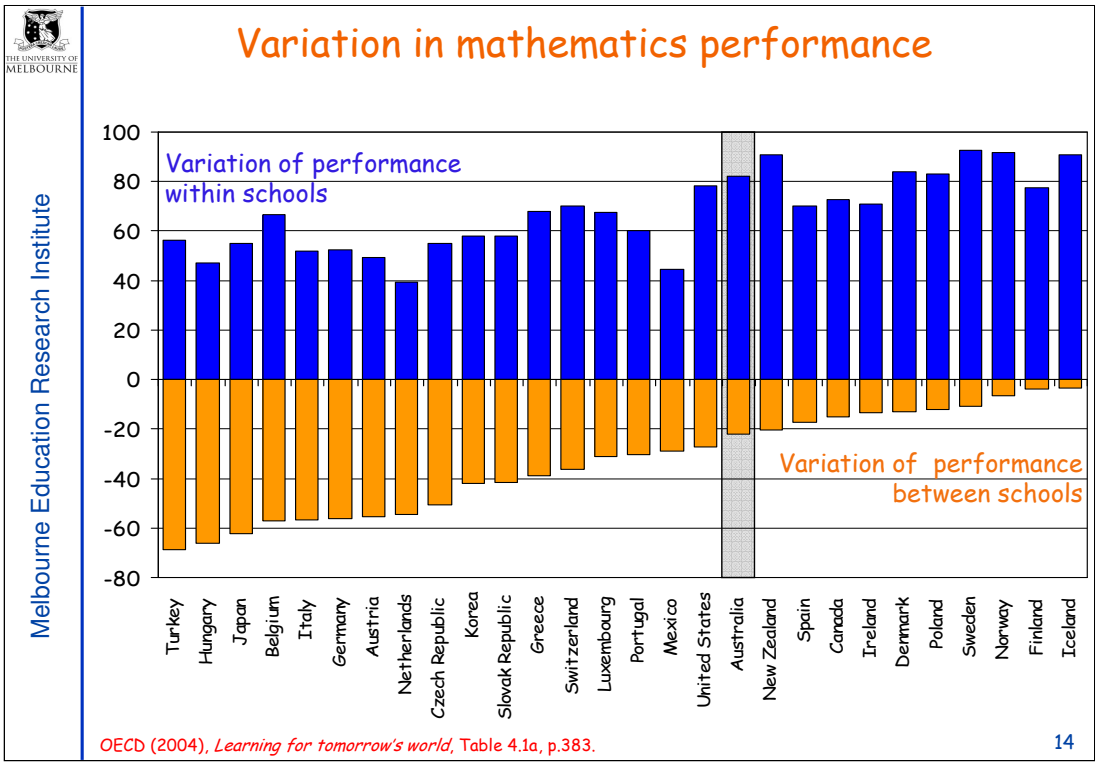


An examination of the relationship between social background and educational achievement country-by-country reveals marked differences among countries. The figure above shows the results for four countries. The lines for Finland and Canada are significantly less steep than the one for the OECD as a whole which was shown in the previous slide. Increased social advantage in these countries is associated with less increase in educational achievement than in the OECD as a whole. The results in these countries are more equitable than those of the OECD overall. Students differ in achievement but not in a way that is so substantially related to their social background.

The lines for Australia and Germany are both significantly steeper than the one for the OECD as a whole, as are those for the US and the UK which are not shown in the figure above. In all of these countries, social background is more substantially related to educational achievement than in the OECD as a whole. Their results are inequitable in the sense that differences among students in their literacy levels reflect to a marked extent differences in their social background.

The differences between these four lines at the left-hand end are substantial. Socially disadvantaged students do very much worse in some of these countries. The gap in educational achievement between similarly socially disadvantaged students in Germany and Finland represents around three years of schooling. Similarly disadvantaged students in Australia fall about half-way between, around 1½ behind their counterparts in Finland.

More detailed analysis of the German data shows the pattern to be strongly related to the organisation of schooling. From age 11, students are separated into vocational and academic schools of various types on the basis of the educational future judged to be most appropriate for them. Students from socially disadvantaged backgrounds generally end up in low-status vocational school and achieve poor educational results. Students from socially advantaged backgrounds are directed to high-status academic schools where they achieve high-quality results. The schooling system largely reproduces the existing social arrangements, conferring privilege where it already exists and denying it where it does not.



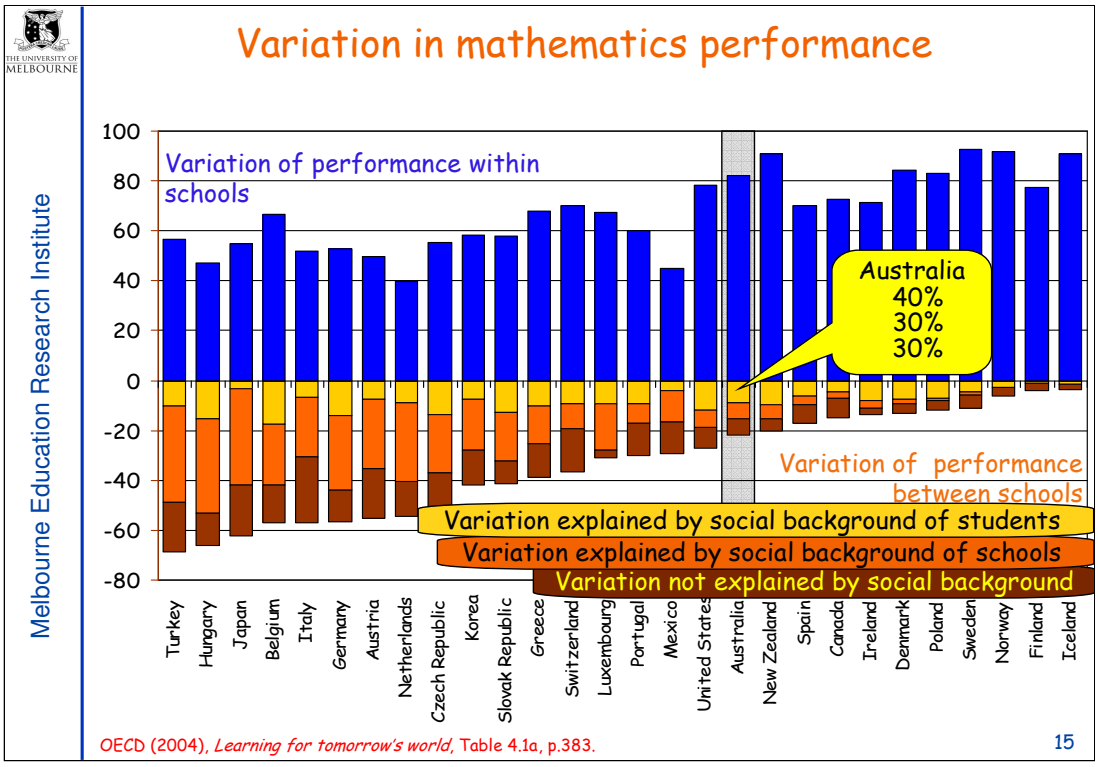
The figure above divides the variation in student performance in mathematics in PISA 2003 for each country into a component due to differences among students within schools, shown above the zero line, and a component due to differences between schools shown below that line.

In Iceland, Finland and Norway there is very little variation in scores between schools. For parents in these countries, choice of school is not very important because there is so little difference among schools.

Among the countries in which there is a large component of variation between schools, there are some in which this occurs by design. In Hungary, Belgium and Germany, for example, students are sorted into schools of different types according to their school performance as early as age 12. The intention is to group similar students within schools differentiated by the extent of academic or vocational emphasis in their curriculum. This is intended to minimise variation within schools in order then to provide the curricula considered most appropriate for the differentiated student groups. It has the consequence of maximising the variation between schools.

In some other countries, the grouping of students is less deliberate but, nevertheless, results in substantial between-school variation. In Japan, for example, 53 per cent of the overall variation is between-schools. In Korea, 42 per cent is between schools. In Australia, 20 per cent is between schools.

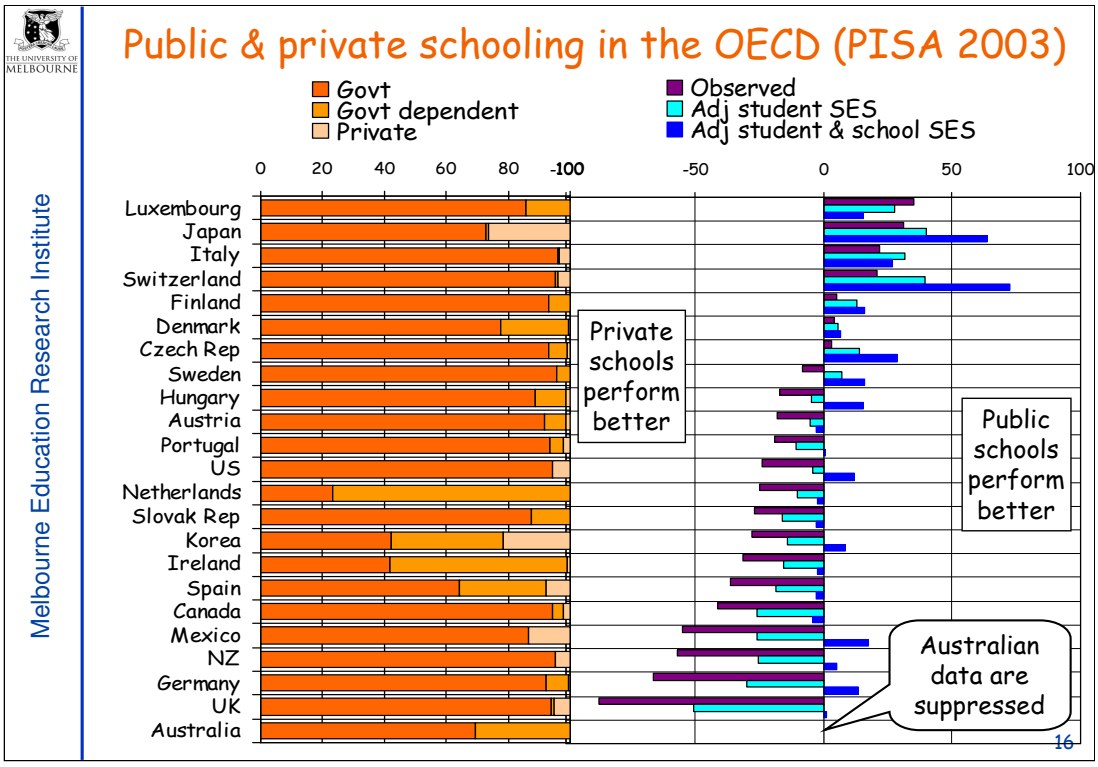
For Poland, in PISA 2000, 63 per cent of the variation in reading was between-schools whereas in PISA 2003 in mathematics only 13 per cent was between schools. This remarkable difference was due to a reform in which early streaming of students into schools of different types was abandoned in favour of comprehensive schools for students up to the age at which PISA measures their performance. (Not only was the between-school variation reduced. Poland was the only country to improve its average performance significantly on all measures used in both PISA 2000 and PISA 2003. It did so largely by raising the achievement levels of its poorer performing students.)



A further way in which to examine equity is to determine the extent to which the variation between schools can be explained in terms of differences in the social backgrounds of the students. This is done in the figure above, with the between-school variation subdivided into three components: (a) variation that can be accounted for in terms of the social backgrounds of the individual students in the schools; (b) variation that can be accounted for in terms of the average social background of the students in the schools; and (c) variation that cannot be accounted for in terms of the social backgrounds of the students.

The first indicates the impact of students' own social backgrounds on their educational outcomes, the second the impact of the company they keep in school. In Australia, 70 per cent of the variation between-schools can be accounted for in terms of differences between schools in the social background of their students – 40 per cent individual social background and 30 per cent the average social background of students in the schools.

Where differences in social background account for a large percentage of the between-school variation, this suggests that the educational arrangements in the country are inequitable. Where much of the account derives from the social background of other students in the school, it suggests that there is a benefit for advantaged students in keeping company with similarly advantaged students but a compounded disadvantage for disadvantaged students keeping company with others like themselves. That suggests an impossible policy conundrum for those who might want different groupings to ameliorate the influence of social background on disadvantaged students because it implies that reduction in disadvantage for them could only be won by a reduction in advantage for the advantaged. Additional analyses of the PISA 2000 data for Austria, however, offer a more encouraging conclusion. These analyses suggest that "that students with lower skills benefit more from being exposed to clever peers, whereas those with higher skills do not seem to be affected much. Social heterogeneity, moreover, has no big adverse effect on academic outcomes. These results imply considerable social gains of reducing stratification in educational settings" (Schneeweis & Winter-Ebmer, Peer effects in Austrian schools. Working Paper No. 0502, Department of Economics, Johannes Kepler University of Linz, Austria 2005, p.2).



Enrolment data for public and private schooling in OECD countries are provided in OECD's annual publication, Education at a Glance. In these data, as shown in the left-hand panel in the figure above, three categories of schools are distinguished:

Government schools (funded and managed by government agencies)
- Government dependent schools (private managed but with some government finances)
- Private (privately managed and fully privately funded).

In the Netherlands, there are no fully private schools but almost 80 per cent of students attend government-dependent private schools. These schools receive full public funding on the same basis as government schools and do not charge fees in addition. They thus differentiate themselves from the public sector and from each other on the basis of values, faith-commitment, or pedagogy but not resources. In the United States, there are no government-dependent schools (except for a few private schools accepting students with public vouchers). Schools are either publicly funded and run or privately funded and run. In Australia, there are only a small number of private schools. Virtually all schools are either government or government-dependent.

The right-hand panel above shows the difference between PISA 2003 mathematics means scores for government and other schools. When the difference is positive, government schools have a higher mean, as in Luxembourg, Japan, Italy, Switzerland, Finland, Denmark and the Czech Republic (the dark purple bars). Once differences between the school systems in the social backgrounds of their students and the schools have been taken into account, there is no remaining significant overall superiority of non-government schooling in any country (the dark blue bars). The observed superiority of non-government schools in the base data appears to be due to the students they enrol rather than what they do as schools.

Whether this is the case in Australia is unknown since the information distinguishing government and non-government schools in the Australia database is suppressed before it is submitted for international analysis. That practice should be changed.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How might Australia spread the benefits more equitably...

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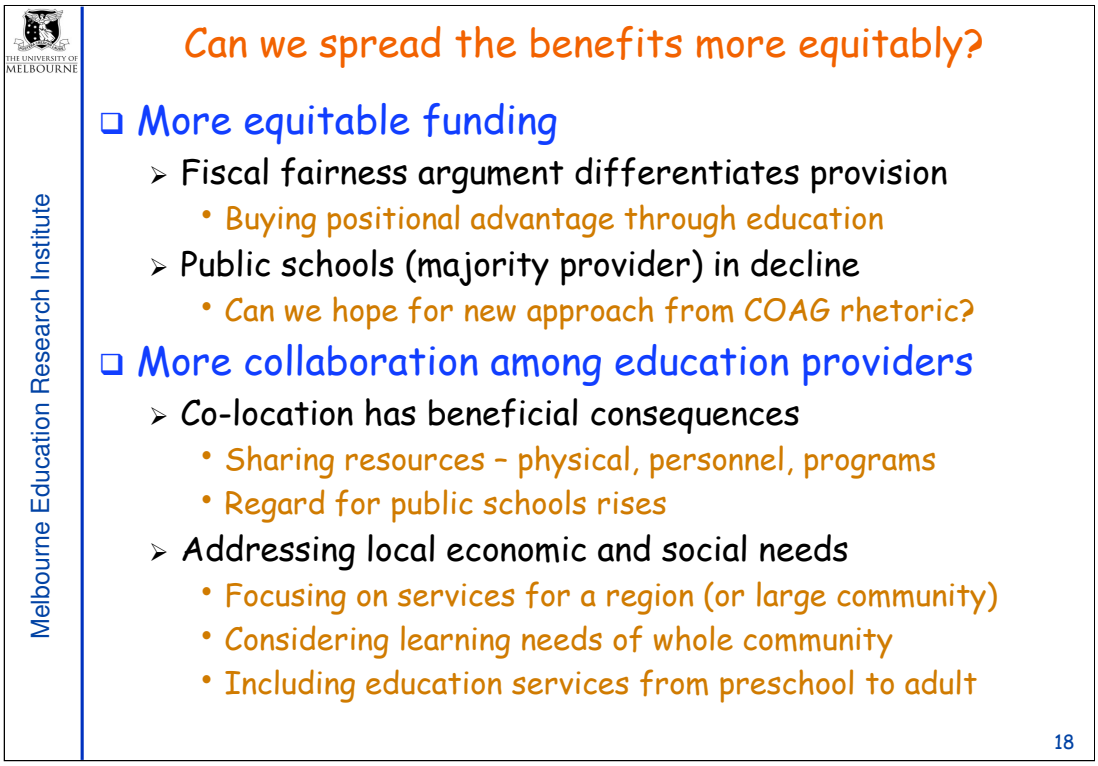

Australia has a unique mix of public and private schooling, with a continuing drift from the public to the private sector, though the public sector is still the majority provider. The private sector is substantially supported from public funding on the grounds of 'fiscal fairness', that is that public expenditure should provide for at least some of the costs of whatever form of education taxpayers choose for their children. This does have the significant consequence that those with the personal resources to do so can buy what they expect to be 'positional advantage' for their children through what they believe to be a superior education. (Whether it is superior or not, we do not have the data to say.)

While retaining the public/private mix that Australians have generally come to accept, if not expect, are there ways of ensuring quality in the public sector. One way would be to increase funding levels. The COAG national reform agenda suggests creative new forms of collaboration between State and Federal governments but they may not be realised.

In the meantime, there are some encouraging new forms of collaboration among education providers. Co-location of government and non-government schools, most notably in green-fields developments of new communities, has maintained school and system identities while sharing expensive facilities (e.g. libraries, science laboratories) and programs (e.g. foreign language and advanced science classes). In these cases, the public schools are typically in demand and not in decline as others around them often are.

More extensive collaboration on the provision of education services, from preschool to adult, is being used to address regional economic and social needs as well (e.g. seeking ensure that those living in the region have the skills to take advantage of new jobs emerging in the region rather than see them filled by others commuting in from more advantaged regions.

[In the interests of full disclosure, I report that I am currently engaged by Delfin Lend Lease as a consultant for 3-4 days per month to help with the further development of the education services model used for the development of Delfin communities. Co-operation among public and private providers at all levels of education is one feature of the model.]

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The whole storyline…

Education pays off for countries and individuals.

Australia has lower participation rates in upper secondary and tertiary education than other OECD countries with which it competes.

Australia commits less of its wealth to education than most other OECD countries and requires a higher private contribution than all but two.

Australian school education is high average quality but social background is more strongly related to educational achievement than in many OECD countries, including Finland, Canada, South Korea.

There are relatively large differences in educational achievement among schools in Australia, with 70% of the differences attributable to differences in social background of students.

If Australia genuinely wants to make the boom pay for everyone, we need more equitable funding of public schools and new forms of collaboration among schools and with other education providers.

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Thank-you

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