Making the Grade

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In the field of primary and secondary education, progressives in Australia have generally adopted a conservative approach to reform. This would be entirely justifiable if our schools were performing well. But troubling new evidence suggests that literacy and numeracy scores have stagnated or fallen since the 1970s – despite a doubling of resources. While it is difficult to be sure of the reasons for this decline, one possibility is a fall in teacher quality. In this environment, Australian Labor should be more open to new reforms being favoured by social democrats in Britain and the United States: publishing test results, promoting healthy competition between schools and finding new ways to attract and keep the best teachers.

The most straightforward way of answering how Australian schools have performed in recent decades is to see how the literacy and numeracy standards of Australian students have fared over the past quarter of a century. For comparable data on literacy and numeracy, we can use tests conducted since 1975 by the Australian Council for Educational Research (ACER), as part of its Longitudinal Surveys of Australian Youth. The tests covered a representative sample of Australian pupils in both government and non-government schools. Students are tested at age 14 and are then followed until they are well into their 20s.

How well students perform in these literacy and numeracy tests turns out to be a good predictor of a number of life outcomes. When ACER contacted those who took the tests a decade later (when they were in their mid- or late-20s), they found that those who performed well in the tests were more likely to have completed school, more likely to be employed and tended to have higher hourly wages.[1] These literacy and numeracy scores clearly do not measure everything that is important about education, but neither can they be dismissed as meaningless.

Most importantly for present purposes, these scores were designed to be comparable over time, with common items in successive tests making it possible to scale the test.

In this sense, they are quite unlike most Australian tests – such as statewide tests in Grade 3, 5, 7, 10 and 12 – which are not generally designed to be comparable across years.

This allows us to compare the scores of 14-year-olds in 1975 and 1998 (the most recent test for which the comparison can be made). Over this period, mean scores for literacy and numeracy either stayed constant or fell, depending on the precise basis for comparison.[2] The evidence is clearer on median scores (the score of the typical student), which dropped sharply from 1975 to 1998.

One potential explanation for this finding is that there has been a change in students' characteristics. For example, students who come from non-English-speaking backgrounds tend to score lower on these tests, and more students in 1998 came from non-English-speaking backgrounds than in 1975. On the other hand, students with well-educated parents tend to do better, and students in 1998 had more highly educated parents than the 1975 cohort. So it is difficult to predict how demographics would affect the overall trend.

What would the change have been if there had been no shift in students' demographic characteristics? Using data from the 1975 and 1998 tests, my Australian National University colleague, Dr Chris Ryan, and I tested this hypothesis. We found that taking account of demographic changes did not make the drop go away. On the contrary, it accentuated it. Taking into account the demographic shifts between 1975 and 1998, the drop in both literacy and numeracy scores was about two and a half points.

One should remember that literacy and numeracy scores have fallen at a time when spending on education has risen. In today's dollars, government schools spent $3,141 per pupil in 1975. By 1998, real spending per pupil had more than doubled, to $6,770. Much of this change came through lower student/teacher ratios. Over this period, the number of students per teacher fell from 25 to seventeen in primary schools and from sixteen to thirteen in secondary schools.[3]

These facts on spending are important because they show that this is not a case of

declining outputs and declining inputs. Instead, it is a case of declining outputs despite rising inputs. In economic jargon, the productivity of our schools is falling. If we measure outputs in terms of literacy and numeracy scores of 14-year-olds students, Australia is getting less for its educational dollar now than it did in the 1970s.

As I argued earlier, we know that literacy and numeracy scores matter, that they are an important predictor of children's life outcomes. But they are only one measure of educational performance. Schools also teach students a wide variety of other skills – from science to socialising – that are not measured by literacy and numeracy tests. And we cannot know from these results whether schools are doing better or worse. What we do know is that on the criteria we can measure, schools today are not doing as well as they did in the 1970s.[4]

Perhaps not surprisingly, it is easier to chart the decline in educational performance of Australian schools than to explain it. Rather than attempting an exhaustive discussion here, I merely focus on one possibility: that there has been a decline in teacher quality.

In the US, a number of recent studies have shown that the number of high-ability people – especially high-ability women – entering the teaching profession declined sharply during the 1970s. Measuring ability either by standardised tests or by the selectivity of the university that the teacher attended, there appears to have been a sharp drop-off in the number of highly talented women entering teaching in this decade.[5]

In research I have conducted with Harvard professor Caroline Hoxby, we assessed two possible explanations for the decline.[6] The first possible explanation is that teacher quality fell as a result of diminishing gender pay gaps in the professions. In the 1960s, gender pay discrimination in the professions was rife (the same was true in Australia, at least until the 1969 and 1972 equal pay decisions). Significant gender pay gaps deterred many talented women from professions such as law, medicine or business and many instead chose to enter the teaching profession (where the gender pay gaps were smaller). A smart young female university graduate in the 1990s had many more labour market opportunities than she might have had in the 1960s. No-one

would propose reinstating gender pay discrimination today, but it is important to recognise the role that sex discrimination once played in pushing talented women into teaching.

Hoxby and I also explored another possible explanation for declining teacher quality: pay compression. At a time when pay gaps between high-performing and low-performing workers in other professions were growing, the pay gaps between teachers were shrinking. We found that a teacher who had attended a top-tier university earned a 60 per cent pay premium in the 1960s but no pay premium in the 1990s. Overall, we concluded that both factors – falling gender pay discrimination in the professions and pay compression within teaching – helped explain the decline in US teacher quality. In current research, I am exploring whether there has been a decline in teacher quality in Australia and, if so, what factors might account for it.

Over the last quarter of the twentieth century, the resources devoted to educating each student in Australian schools doubled. Yet literacy and numeracy standards stagnated or fell. Together, these findings suggest that Australia needs to think harder about ways of improving the productivity of its schools.

First, we should consider fostering healthy competition between schools, by providing parents with more information about how schools are performing. In most Australian states and territories, school-level test score information is very limited. This stands in sharp contrast to Britain and the United States, where these data are regarded as public information and detailed school-level results are reported annually.[7]

An oft-heard argument against the publication of school test-score results is that these reflect both school performance and student backgrounds. Parents, the argument goes, may erroneously judge a good school to be underperforming if it has a high percentage of students from disadvantaged backgrounds. This is an important argument, but one that is easily addressed. One solution is for schools to also report test-score information that is adjusted to take into account the socioeconomic composition of the student body (as was done in Victoria during the 1990s). Another alternative is to report to parents the test-score gain from one test to the next, since this is effectively a measure of the value added by a school.

Those who oppose the publication of test scores should remember who suffers most from an environment in which limited information is available about school performance. Affluent parents tend to have superior ways of finding out about school performance: they buy books that compare schools, they often have extensive social networks and they are generally more comfortable calling the school and arranging to speak with the principal. Keeping test scores secret punishes low-income parents most, since they have fewer alternative sources of information about schools in their area.

Second, progressive educational reformers should also be open to the notion of encouraging competition between local schools by creating opportunities for parents to move their children into better-performing schools. As the competition reformers of the early-1990s recognised, consumers are rarely well served by monopolies. This simple insight, which underpinned reforms to foster competition in the telecommunications, electricity and dairy sectors, suggests that suppliers will "lift their game" if they know that consumers have another option. For working families who are struggling to make ends meet, competition in these sectors has meant lower prices and improved quality.

Competition is not only about ensuring that students can move from low-performing to high-performing schools; it is about creating a set of incentives for all schools to perform at their best. There is no contradiction between competition between service providers and a vibrant exchange of ideas between those providers. Indeed, this combination neatly characterises one of the world's intellectual hubs: Silicon Valley. In Australian education, innovation and competition can work side-by-side.

Third, if it is the case that teacher quality has declined in Australia, then we should be open to unconventional solutions to attract and retain the best teachers. This may require a little ingenuity. Faced with a similar crisis, New York City recently embarked on a campaign to encourage professionals in other occupations to retrain as teachers, using slogans such as "Tired of diminishing returns? Invest in NYC kids", and "You remember your first-grade teacher's name. Who will remember yours?" They received so many applications that they were able to choose just the top 10 per cent to become teachers.

We should also consider whether the structure of teacher pay could be improved. Average salaries for Australian teachers are generally above the Organisation for Economic Co-operation and Development (OECD) country mean. But with public-school teachers generally reaching the maximum salary level after just ten years of service, teacher salaries flatten out much more quickly than their OECD counterparts.[8] In most states and territories, a starting teacher receives about $40,000, while the best and most experienced teachers receive about $60,000. It is difficult to think of another profession where the rewards for performance and experience are so low. This helps explain why the net migration inflow (immigrants minus emigrants) over recent years has been smaller for teachers than for any other professional occupation.[9]

Failing to reward performance affects not only the total pool of teachers, but also has a disproportionate impact on disadvantaged students. Those who suffer most are not children in rich neighbourhoods, whose schools will rarely have difficulty attracting good teachers – but those in struggling suburbs. Without incentives for the best teachers to work in the most needy schools, these areas will continue to attract teachers who are younger and less experienced.

For much of the twentieth century, the left in Australia favoured high trade barriers. Protectionism, it was thought, was the best way to protect jobs. Yet tariffs are regressive taxes, and sheltering monopolies behind tariff walls actually did more harm than good to low-income earners.[10] Under the government of Gough Whitlam in 1973, and under Bob Hawke in 1988 and 1991, it was Labor governments that finally consigned high tariff rates to the dustbin of history – in the process putting an extra $1000 into the pockets of an average Australian family.

Social democrats in Australia today face a similar rethink when it comes to education. The old producer-driven solutions have not worked. Our central focus must now be on better serving the consumers of education: young Australians. Getting the best out of our schools is the most promising way we know of to address our greatest social challenges: unemployment, poverty, inequality and indigenous disadvantage. If we block innovation in Australian education, those who suffer will be children in the most disadvantaged schools. By finding better ways to teach literacy, numeracy and

engender a love of learning, we can open doors to children for the rest of their lives.

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Endnotes

1. Marks, G. and Fleming, N., 1998. "Factors Influencing Youth Unemployment in Australia 1980-1994", Research Report 7. ACER: Melbourne; Marks, G. and Fleming, N., 1998. "Youth Earnings in Australia 1980-1994: A Comparison of three youth cohorts", Research Report 8. ACER: Melbourne.

2. Rothman, S. 2002. "Achievement in Literacy and Numeracy by Australian 14-year-olds, 1975-1998", Research Report Number 29, ACER: Melbourne. Note that the test cohorts differed slightly – the 1975 cohort was 14-year-olds, while the 1998 cohort was Grade 9 students. If we use the overlap group (14-year-olds in Grade 9), mean literacy and numeracy scores fell between 1975 and 1998. An alternative is to compare 14-year-olds (who will be in differing grades in 1975, but only in grade 9 in 1998). On this metric, mean literacy and numeracy scores for both groups were unchanged from 1975 to 1998. Using either method, median literacy and numeracy scores dropped by between 1 and 4 points.

3. Figures on spending and student/teacher ratios are from Burke G. and Spaull A., 2001. "Australian schools: participation/ funding 1901-2000" *Year Book Australia 2001*. ABS: Canberra. Expenditure figures are for 1974 (assigned to 1975) and 1999 (assigned to 1998), and are converted to 2004 dollars.

4. Similar evidence can be found in the International Mathematics Studies, which showed a steady decline in the mathematics test scores of 13-year-olds between 1964 and 1978, and between 1964 and 1994: Afrassa, T. and Keeves, J., 1999. "Changes in students' mathematics achievement in Australian lower secondary schools over time" *International Education Journal*, 1(1):1-21.

5. Sean P. Corcoran, William N. Evans and Robert M. Schwab, 2004. "Changing Labor Market Opportunities for Women and the Quality of Teachers, 1957-2000", *American Economic Review* 94(2); Marigee, P. Bacolod, 2001, "The Role of Alternative Opportunities in the Female Labor Market in Teacher Supply and Quality: 1940-1990". UCLA Department of Economics, Mimeo.

6. Hoxby, C. and Leigh, A., 2004. "Pulled Away or Pushed Out? Explaining the Decline of Teacher Aptitude in the United States" *American Economic Review* 94(2): 236-240; Hoxby, C. and Leigh, A., 2005. "Wage Distortion", *Education Next*, Spring, 50-56.

7. See for example http://www.dfes.gov.uk/performancetables/(UK) and http://www.doe.mass.edu/mcas/results.html (Massachusetts, US). I have chosen Massachusetts because it is known as one of the most progressive states in the US. A glance at the education website of any other US state will reveal similar data.

8. O'Reilly, B., "Education and Training: How does Australia Compare Internationally?" in Australian Bureau of Statistics, *Year Book 2002,* ABS, Canberra, 2002. See also Australian Bureau of Statistics, "Education – Educational Attainment: Education and Training: International Comparisons" in *Australian Social Trends 2002*, ABS, Canberra, 2002. These cross-country comparisons take into account differences in purchasing power.

9. Birrell, B., Rapson, V., Dobson, I. and Smith, T., 2004, *Skilled Movement in the New Century: Outcomes for Australia*, Centre for Population and Urban Research, Monash University, Melbourne, p.14.

10. Tanner, L., 1999. *Open Australia*. Sydney: Pluto Press