



THE HENRY PARKES ORATION 2023

# VALUING REGIONAL EDUCATION

An economic as well as social imperative

**Professor the Hon. Adrian Piccoli**

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## Acknowledgements

I would like to acknowledge the traditional custodians of this land that we are meeting on today. I would also like to pay respect to the Elders past, present, and emerging, of the Jukemba, Kamilaroi and Bundjalung nations and extend that respect to other Aboriginal people present.

I would also like to acknowledge Ian Thom and the Henry Parkes Foundation for inviting me to present the 2023 Henry Parkes Oration. I am very proud to have followed in the footsteps of one of the most significant Australians as the NSW Minister for Education.

We know the commitment that Sir Henry Parkes had for education and particularly the right of every Australian, wherever they live or whatever background to have access to the highest-quality education. What is often these days referred to as ground-breaking aspirations for educational outcomes in Australia were being championed more than 100 years ago by Sir Henry Parkes. We stand on the shoulders of giants.

## Background

Before I begin, I would like to also acknowledge my good friend Professor Richard Holden from the UNSW School of Economics. In the three years I spent as the inaugural director of the Gonski Institute for education at UNSW I spent a lot of time with Richard talking about the economics of education.

So much of what happens in education is better explained by economists than by education academics. For example, why teachers choose, or don't choose to teach in a rural setting is best explained by behavioural economics yet has a profound impact on the learning outcome for students.

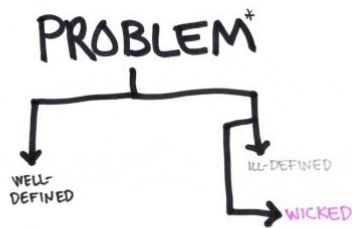
As I will discuss a little later, the education outcomes for students are highly correlated to not just their **social** circumstances but also their **economic** circumstances – hence 'socio-economic' circumstances. It could be argued that the best way to improve student outcomes at school is to improve the 'economy' in which they live – both their personal and family economy as well as their **community's** economy. Lift their socio-economic status and performance should lift.

Then there is the economic cost of the performance gap between rural and remote students and metropolitan students in Australia. While director of the Gonski Institute I commissioned Richard and Dr Jessie Zhang to calculate what that economic cost is. To that end, in today's presentation I draw significantly from their report titled, *The Economic Impact of Improving Regional, Rural & Remote Education in Australia: Closing the Human Capital Gap*.

Today I am going to talk about:

- The problem and how big the gap is
- Why remoteness is a challenge
- An example of some of the challenges faced by rural schools
- Some examples of what works to close the gap and what doesn't work
- What the gap costs the economy
- Why all this matters.

## Let's start with the problem



\* THORNDIKE, 1933: PROBLEM = WHERE THE ACTIONS NECESSARY TO ATTAIN GOAL(S) ARE NOT OBVIOUS.

Australia continues to face the enormous challenge of promoting access to high-quality education across all areas of the country.

Generally, students in regional and remote parts of Australia do not benefit from the same educational opportunities and experiences as their peers in urban areas. While differences in the educational outcomes of students are partly attributable to their different individual abilities, interests and motivations, there

remains an ongoing disparity in educational achievement between students in urban areas and students in regional and remote areas.

The evidence shows us that, across Australia, students living in regional and remote areas have consistently lower levels of engagement and achievement at school than those living in metropolitan areas.

Educational disadvantage in Australia is a systemic problem. In 2011 (and I am advised that they haven't changed substantially since then), the Review of Funding for Schooling, chaired by David Gonski, identified five major factors that can contribute to educational disadvantage in the Australian education system at the student and school level:

- socio-economic status
- Indigeneity
- English language proficiency
- disability
- remoteness.

These individual factors often interact in complex ways, and their interplay can therefore compound the effect of educational disadvantage.

More specifically to rural and remote education, The key findings of *Educational opportunity in Australia 2015*, a study of Australian education conducted by the Mitchell Institute, were that:

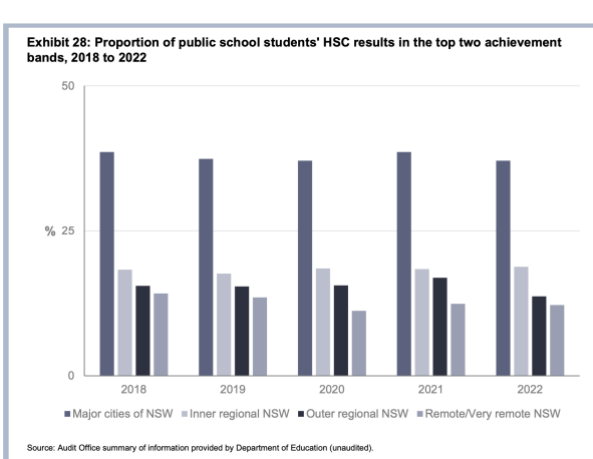
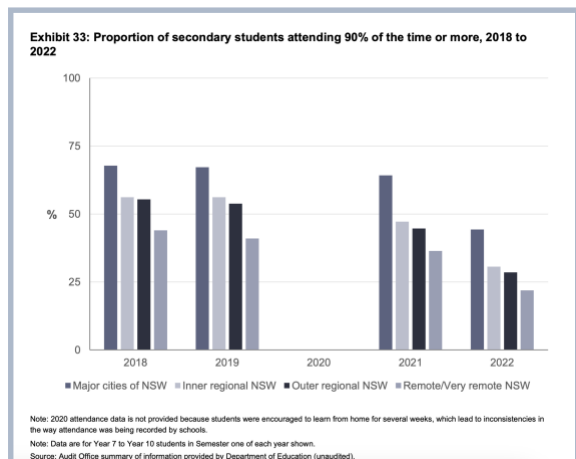
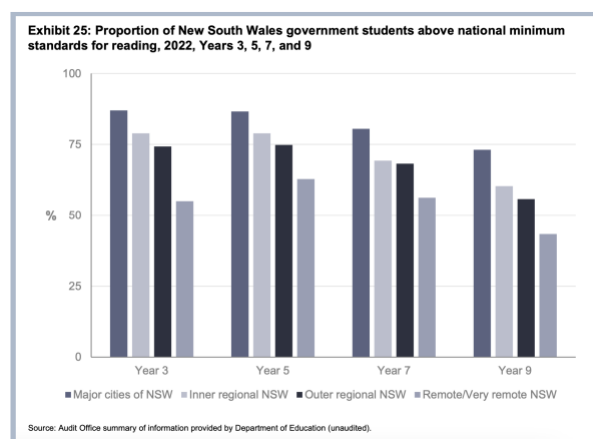
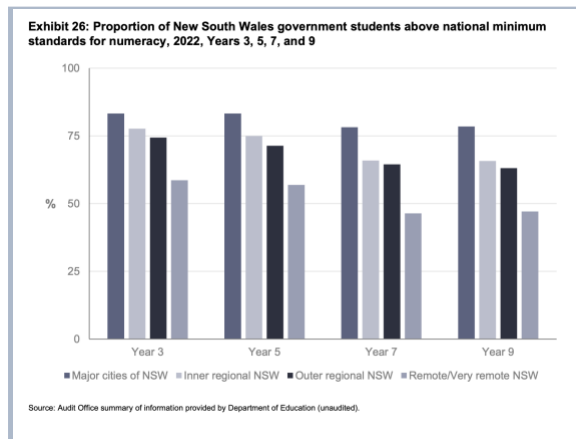
- the proportion of students in very remote areas who meet the criteria of certain educational milestones is between 19 and 48 percentage points lower than for the Australian population as a whole;
- students living outside major cities are less likely to catch up once they are off course;
- regional and remote students have lower access to education services compared with those living in major cities, attend school less frequently, and are less likely to enrol at university and more likely to drop out from university; and

- the attitude of remote students towards school on aspects such as belonging, self-confidence, purpose and perseverance are less positive than those of students in regional and metropolitan areas.

Notably, the difference between educational achievement in major cities and regional and remote areas *increases* during high school over the middle and senior school years. This difference grows substantially when comparing students in major cities and the most remote areas of Australia.

The discrepancy is there even in high-performing students. In 2016, the Grattan Institute published the report *Widening gaps: What NAPLAN tells us about student progress*, which demonstrated that the top-performing students at disadvantaged schools were up to two and a half years behind the top-performing students at advantaged schools.

The data also reflects a continuing relationship between rates of attendance, Year 12 or equivalent certification and the location of students across Australia. Student attendance rates continue to decline considerably in regional and remote areas, particularly in secondary education. The reasons for these gaps are multifaceted and may encompass any or a combination of the challenges faced by schools in regional and remote areas, many of which are educationally disadvantaged.



Indeed, in Australia the link between student background and educational achievement is stronger than those in other OECD countries with high-quality education systems.

### Why is remoteness a problem for students?

Regional and remote schools find it hard to offer a broad range of curriculum opportunities for their students because of low enrolments, smaller class sizes, and shortages of experienced teachers—particularly for specialist subjects in high school.

Location can also determine access to high-speed, cost-effective and reliable internet. Internet access is an issue not only for schools, but also for homes with school-aged children or for those who are

studying through distance education or home-schooling. As access is inherently more difficult to secure in regional and remote areas compared to urban zones, its availability, accessibility, and affordability for schools and communities in these areas is imperative to promoting access to education.

Remoteness can be a further barrier to school attendance and accessing secondary education where long distances must be travelled. Although boarding schools are an alternative for some regional and remote students, these are generally expensive and such arrangements can be socially and culturally incompatible with the lifestyles of students and their families in regional and remote parts of Australia.

### What about the socio-economic status (SES) of the student’s family and community?

Students from low socio-economic status (SES) backgrounds and who live in low SES areas are less likely to make progress at school. Research has demonstrated a general correlation between remoteness and educational disadvantage. That is, the more remote a student is the more educationally disadvantaged they are.

So, what does SES mean? The most basic measure of SES is based on the highest educational attainment of a child’s parents. There are other aspects to SES but that’s the main one. Research demonstrates that students whose parents have lower education levels tend to have a learning gap of 10 months by Year 3, which grows to two and half years by Year 9.

Even where two students have similar ability in Year 3, a student with parents with lower levels of education is less likely to consistently make progress than similarly apt students whose parents have a higher level of education.

Beyond the level of parental education, the environment of a student’s home and community are factors that can impact negatively upon their attendance and success at school. Factors include poor health and inadequate nutrition, family stress at home and the risk of homelessness; and outside of the home, the strength of the local economy, community well-being and the availability of employment opportunities.

These socio-economic factors are more profound in rural and regional areas of Australia. The bottom line is that low SES is a vicious circle. In the table below, for example, you can see it’s the country/regional electorates (green highlights) that have the lowest proportion of parents with higher levels of education.

**Educational attainment by NSW electorate:** The 93 NSW state electorates ranked by the proportions of people whose highest level of education is year 12, with country electorates highlighted in green, and those in western / southwestern Sydney in orange.

Persons with highest level of school completed Year 12						
Electorate	Party	Region	Number (2021)	2016-21 % change	Percentage (2021)	Rank
<b>NSW average</b>						
40,363 18.3% 56.9%						
North Shore	LIB	Northern Sydney	56,658	8.9%	82.6%	1
Vaucluse	LIB	Eastern/Inner Sydney	56,991	8.4%	81.8%	2
Willoughby	LIB	Northern Sydney	62,526	6.3%	80.3%	3
Sydney	IND	Eastern/Inner Sydney	75,400	4.5%	80.2%	4
Newtown	GRN	Eastern/Inner Sydney	60,280	5.9%	79.7%	5
Davidson	LIB	Northern Sydney	56,858	11.1%	78.8%	6
Walroonga	LIB	Northern Sydney	57,019	14.3%	78.5%	7
Coogee	ALP	Eastern/Inner Sydney	60,539	1.6%	78.4%	8
Balmain	GRN	Eastern/Inner Sydney	55,085	7.3%	77.8%	9
Ryde	LIB	Northern Sydney	67,756	12.2%	76.9%	10
Helfton	ALP	Eastern/Inner Sydney	67,635	26.0%	76.9%	11
Manly	LIB	Northern Sydney	56,399	14.2%	76.4%	12
Lane Cove	LIB	Northern Sydney	53,829	18.7%	76.4%	13
Epping	LIB	Blacktown-Parramatta	58,904	18.9%	76.0%	14
Parramatta	ALP	Blacktown-Parramatta	74,939	33.2%	75.5%	15
Strathfield	ALP	Eastern/Inner Sydney	68,019	14.7%	75.8%	16
Kellyville	LIB	North West Sydney	51,871	42.8%	75.1%	17
Summer Hill	ALP	Eastern/Inner Sydney	50,238	8.5%	75.1%	18
Dunsmuir	LIB	Eastern/Inner Sydney	52,919	8.0%	75.8%	19
Hornsby	LIB	Northern Sydney	51,326	12.9%	75.1%	20
Castle Hill	LIB	North West Sydney	51,073	12.2%	70.6%	21
Riveston	ALP	Blacktown-Parramatta	54,684	61.0%	69.7%	22
Kogarah	ALP	Southern Sydney	59,418	7.4%	69.6%	23
Rockdale	ALP	Southern Sydney	52,116	17.8%	69.5%	24
Wakehurst	IND	Northern Sydney	45,148	14.2%	69.4%	25
Manubra	ALP	Eastern/Inner Sydney	48,537	17.7%	69.5%	26
Pittwater	LIB	Northern Sydney	40,929	13.5%	65.8%	27
Oxley	LIB	Southern Sydney	46,216	11.7%	65.5%	28
Northern Hills	LIB	Blacktown-Parramatta	48,908	11.5%	64.9%	29
Cartersbury	ALP	Southern Sydney	50,830	12.7%	62.9%	30
Blacktown	ALP	Blacktown-Parramatta	46,760	19.3%	61.5%	31
Cronulla	LIB	Southern Sydney	39,550	16.6%	61.5%	32
Auburn	ALP	Blacktown-Parramatta	55,039	12.7%	61.3%	33
Miranda	LIB	Southern Sydney	41,353	18.0%	61.2%	34
Macquarie Fields	ALP	South West Sydney	43,685	37.6%	60.7%	35
Blue Mountains	ALP	North West Sydney	38,662	12.7%	59.9%	36
Newcastle	ALP	Hunter	38,873	24.3%	59.6%	37
Barkistown	ALP	Southern Sydney	45,761	16.6%	59.4%	38
Prospect	ALP	Blacktown-Parramatta	44,708	18.6%	59.3%	39
Leppington	ALP	South West Sydney	40,248	46.7%	58.9%	40
Heathcote	ALP	Southern Sydney	37,354	14.5%	58.5%	41
Monaro	ALP	Riverina & South East NSW	40,377	26.7%	58.5%	42
Holsworthy	LIB	South West Sydney	40,300	16.8%	58.2%	43
Granville	ALP	Blacktown-Parramatta	50,448	17.7%	58.1%	44
East Hills	ALP	Southern Sydney	40,337	17.9%	57.8%	45
Terigal	LIB	Central Coast	34,401	17.4%	54.0%	46
Keira	ALP	Illawarra Shoalhaven	38,837	17.3%	53.8%	47
Camden	ALP	South West Sydney	36,251	45.6%	53.6%	48
Liverpool	ALP	South West Sydney	39,922	14.9%	53.4%	49
Ballina	GRN	North Coast	35,398	32.9%	53.0%	50
Badgers Creek	LIB	South West Sydney	35,700	41.8%	52.9%	51
Londonderry	ALP	North West Sydney	38,436	78.0%	52.7%	52
Charlestown	ALP	Hunter	34,101	19.5%	51.4%	53
Wollongong	ALP	Illawarra Shoalhaven	34,574	16.5%	50.9%	54
Mount Druitt	ALP	Blacktown-Parramatta	39,091	11.7%	50.8%	55
Cabramatta	ALP	South West Sydney	39,514	8.7%	50.8%	56
Wallend	ALP	Hunter	35,094	20.4%	49.9%	57
Gosford	ALP	Central Coast	32,182	21.9%	48.8%	58
Campbelltown	ALP	South West Sydney	32,853	20.5%	48.7%	59
Fairfield	ALP	South West Sydney	38,626	12.0%	48.2%	60
Hawkesbury	LIB	North West Sydney	31,037	37.4%	47.1%	61
Goulburn	LIB	Riverina & South East NSW	30,611	23.1%	47.1%	62
Penrith	ALP	North West Sydney	32,211	19.8%	46.9%	63
Wollondilly	IND	South West Sydney	29,713	23.9%	46.5%	64
Kiama	IND	Illawarra Shoalhaven	29,585	25.9%	46.5%	65
The Entrance	ALP	Central Coast	29,371	18.1%	45.4%	66
Wagga Wagga	IND	Riverina & South East NSW	29,804	18.4%	45.3%	67
Tweed	NAT	North Coast	30,536	25.0%	45.0%	68
Coffs Harbour	NAT	North Coast	28,367	22.9%	43.8%	69
Lismore	ALP	North Coast	28,431	18.4%	43.5%	70
Port Macquarie	LIB	North Coast	27,967	33.3%	42.5%	71
Orange	IND	North West NSW	27,188	17.7%	42.3%	72
Bega	ALP	Riverina & South East NSW	27,527	24.5%	42.0%	73
Albury	LIB	Riverina & South East NSW	28,653	20.8%	42.0%	74
Maitland	ALP	Hunter	26,429	35.4%	41.8%	75
Lake Macquarie	IND	Hunter	25,913	25.0%	41.3%	76
Northern Tablelands	NAT	North West NSW	27,814	6.8%	41.2%	77
Bathurst	NAT	North West NSW	27,196	17.6%	41.0%	78
Dubbo	NAT	North West NSW	26,823	22.7%	40.6%	79
Shellharbour	ALP	Illawarra Shoalhaven	26,425	24.1%	40.1%	80
Wingello	ALP	Central Coast	25,031	28.2%	39.5%	81
Port Stephens	ALP	Hunter	24,546	22.5%	38.4%	82
Tamworth	NAT	North West NSW	25,498	17.2%	38.3%	83
South Coast	ALP	Illawarra Shoalhaven	24,583	31.4%	38.2%	84
Swansea	ALP	Hunter	24,465	19.5%	37.5%	85
Upper Hunter	NAT	Hunter	25,263	18.5%	37.1%	86
Murray	IND	Riverina & South East NSW	25,605	19.8%	36.0%	87
Oxley	NAT	North Coast	23,799	24.3%	35.6%	88
Cessnock	ALP	Hunter	23,253	39.4%	34.9%	89
Myall Lakes	NAT	North Coast	21,874	22.6%	33.6%	90
Cootamundra	NAT	Riverina & South East NSW	20,471	15.8%	33.3%	91
Clarence	NAT	North Coast	21,234	20.1%	32.8%	92
Barwon	IND	North West NSW	19,927	6.9%	31.7%	93

Another example analyses NAPLAN scores by where people live and their household income. The following graphs are from the Gonski Data Lab, an interactive website you can explore for yourself – at <https://gonskidatalab.com.au/>

**NAPLAN scores by weekly household income for selected NSW postcodes, with regional, rural and remote centres in yellow** Gonski Data Lab <https://gonskidatalab.com.au/>



### An example of the challenge for rural and regional education: Finding and retaining teachers and school leaders

Teachers have a highly – if not the most – significant ‘in school’ impact on student learning in schools. ‘In school’ matters because as I said earlier, the biggest total influence on performance is their SES background.

Maintaining a highly competent workforce of educators at every school for every year level is therefore imperative to improving the achievements of students in regional and remote schools. However, despite the efforts to provide a range of incentives, the difficulty in attracting and retaining excellent teaching staff in regional and remote areas remains a persistent challenge.

Several studies highlight the challenges that arise more frequently for regional and remote schools when compared with urban schools, which include: higher staff turnover rates and the consequent churn of teachers, the relative inexperience of teachers who tend to be recent and younger graduates, and the lack of expertise of staff to teach certain subjects.

Personal and professional challenges also pose an obstacle to the successful retention of teachers in regional and remote communities. These include issues such as their adaptation to a new working environment and lifestyle, a lack of understanding of rural contexts and communities, feelings of personal and professional isolation, and difficulties in living in close proximity to other staff members.

There can also be a lack of assistance given to facilitate this transition for the partners and families of teachers appointed to rural or remote schools, particularly considering their need to secure employment and educational arrangements in a new location.

Further, school principals in regional and remote areas often face greater pressure in their role in light of various other responsibilities they may have to assume. School leaders in regional and remote communities may have to balance teaching responsibilities alongside administrative duties, such as organising school transport, staff accommodation, as well as other local community leadership positions outside of school.

### **So how do we close the gap? What works?**

The key to understanding what works in education is to uncover the causal effect of a particular intervention. Simply observing that there is a correlation between a policy and an outcome does not imply that the policy caused the outcome. In fact, it hardly ever does.

For instance, if we discovered that the children of women who eat a lot of fish when pregnant tend to have higher university attendance would we conclude that fish consumption has an *in utero* cognitive benefit? Perhaps.

But we would also be worried that women who are wealthier tend to eat more fish than less wealthy women, and that it is the trappings of wealth (tutoring, schooling, other resources) that contribute to university attendance for the children of these women.

So, there are lots of ideas out there about what works but there is very little detailed research on what interventions specifically work. Some work for some students but not for others.

One obvious path when thinking about how to improve educational outcomes is to provide incentives—to students, teachers or parents.

I want to share with you an interesting story about incentives.

Professors Fryer, Devi and Holden trialled two types – balanced incentives and targeted incentives – in the US.<sup>1</sup>

In the balanced incentive experiment, they paid money to students from sixth, seventh and eighth grade based on a series of five measures that included:

- attendance
- behavior
- short-cycle assessments (such as tests)
- two inputs to the production function chosen by each school individually.

In total, they paid US\$1.9 million to 3,500 students in the first year of treatment and US\$2.1 million to 3,600 students in the second year of treatment across 17 schools. They found students were 1% more

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<sup>1</sup> 'Vertical versus Horizontal Incentives in Education: Evidence from Randomized Trials', Roland G Fryer Jr, Tanaya Devi, Richard T Holden, November 2016. [http://research.economics.unsw.edu.au/richardholden/assets/verticalvshorizontal\\_wtables\\_2016.pdf](http://research.economics.unsw.edu.au/richardholden/assets/verticalvshorizontal_wtables_2016.pdf)

likely to attend school, commit 28% fewer behavioral offenses, and 13.5% more likely to report completing most or all of their homework relative to control students who weren't paid.

On average, treatment parents attended almost twice as many parent–teacher conferences as control group parents.

Most important, the paid students also had better test scores: reading test scores and math scores both increased by statistically significant amounts per year of the experiment. This led to a 17% increase in students scoring at or above proficiency for their grade in maths and a 15% increase in reading per year.

In conclusion, aligning incentives across multiple measures leads to significant behavioural change.

But what about targeted incentives? If we want to improve mathematics outcomes then target mathematics. If we want kids to get better at reading then pay them to read. And so on.

A number of experiments have sought to understand the impact of targeted incentives, such as paying children to do mathematics homework or paying children to read books. The general lesson from these experiments is that you get what you pay for—almost literally. That is, if you pay kids to do mathematics homework then they will. Some will learn from that, other students won't. But all incentivised students will divert time away from other activities, such as reading homework.

The Fryer, Devi and Holden research mentioned earlier demonstrated just this effect for 5th grade students by paying them for mastering mathematics problems. Not surprisingly, incentivised students did substantially more mathematics homework. On average those students did better on standardised mathematics tests but almost identically worse on standardised reading tests.

This is exactly what economic theory predicts. This is what is called the 'effort substitution problem' – providing incentives for particular activities crowds out incentives for other activities.

### **What does this gap cost the Australian economy?**

The ideal way to measure the GDP impact of improved rural, regional and remote education in Australia would be to have studies that identify the true impact of interventions and track those impacts throughout students' lives to see the ultimate impact on the economy. This would involve large-scale randomised controlled trials coupled with ongoing tracking of student outcomes.

Unfortunately, such studies do not exist in Australia. Indeed there is a significant opportunity and need for research that identifies the true impact of various educational interventions in Australia.

Without boring you with the maths and the methodology used by economists, basically the earnings gap between rural, remote and regional Australia compared with urban Australia due to differences in human capital formation, ie education and skill development, is 18.3%.

The economists then mapped this into economic outcomes by observing how much of economic output is earned by labour, as opposed to other factors of production. In Australia this is about 57.0%. Applying the share of the population living in rural and regional areas in Australia gives us the economic gap attributable to differences in human capital of 3.3% of GDP.

This means that closing one-third of the gap between rural-remote-regional and urban human capital attainment would increase Australian GDP by 1.1% or \$18.5 billion.

Fully closing the gap represents a \$55.5 billion GDP improvement.

**To put this in perspective, this is larger than the contribution of the entire Australian tourism industry. Put another way, one would need to double the tourism industry or quadruple the size of the Australian beef industry to achieve the same economic improvement.**

Yet these are only the direct effects, on wages, of closing the human capital gap. There are important spillovers in addition to this, such as improvements in physical and mental health and enrichment of communities. Furthermore, there is a multiplier effect throughout the economy from increased productivity and wages. The economists think \$55.5 billion is a major underestimation.

## Why does this all matter?

Because economics determines a lot of what governments do.

It's not just about arguments over funding but perhaps even more importantly, it's about **policy attention**.

Governments do not give this education problem enough attention as it is not seen as an economic problem.

And the gap is growing, not just because of the education divide but also because of the increased need for higher-level skills in our economy. In effect, the growth in the supply of skills in the regions is not keeping up with the demand for skills in the broader economy.

Until there is a sustained commitment to bridge this education divide, and I mean over the period of at least two decades, we will, in rural and regional Australia, continue to suffer the economic and social consequences of that gap.

I am sure Sir Henry Parkes would agree, that is two decades we cannot afford to lose.

Thank you.