



BANKWEST CURTIN ECONOMICS CENTRE

EDUCATE AUSTRALIA FAIR?

Education Inequality in Australia

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About the Centre

The Bankwest Curtin Economics Centre is an independent economic and social research organisation located within the Curtin Business School at Curtin University. The centre was established in 2012 through the generous support from Bankwest (a division of the Commonwealth Bank of Australia), with a core mission to examine the key economic and social policy issues that contribute to the sustainability of Western Australia and the wellbeing of WA households.

The Bankwest Curtin Economics Centre is the first research organisation of its kind in Western Australia, and draws great strength and credibility from its partnership with Bankwest, Curtin University and the Western Australian government.

The centre brings a unique philosophy to research on the major economic issues facing the state. By bringing together experts from the research, policy and business communities at all stages of the process – from framing and conceptualising research questions, through the conduct of research, to the communication and implementation of research findings – we ensure that our research is relevant, fit for purpose, and makes a genuine difference to the lives of Australians, both in WA and nationally.

The centre is able to capitalise on Curtin University's reputation for excellence in economic modelling, forecasting, public policy research, trade and industrial economics and spatial sciences. Centre researchers have specific expertise in economic forecasting, quantitative modelling, micro-data analysis and economic and social policy evaluation. The centre also derives great value from its close association with experts from the corporate, business, public and not-for-profit sectors.

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Foreword



“The beautiful thing about learning is that no one can take it away from you.” BB King

Education is the great equaliser in our society. While not everyone is born equal, a solid education can bring tremendous opportunity and growth for everyone, regardless of their background.

However, just how equitable is Australia’s education system? This latest *Focus on the States* report examines the current state of our nation’s education landscape, and where there is still growth to be had.

There are many indicators that can be used to measure education access, participation and outcomes, but no one indicator can show the full picture. Through the new *BCEC Educational Disadvantage Index*, we pull together data from a wide range of sources, to deliver a comprehensive analysis of education inequality across Australia.

We profile those areas of the country that aren’t providing fair access to educational opportunity for our youngest Australians, and see how this potentially exacerbates participation in education in the later stages of high school and into tertiary education.

We take you through the education journeys of our young Australians, picking out those crucial points where the current system works, and where it falls behind.

I’d like to thank the many stakeholders from the government, policy, community and education sectors who gave us such valuable insights that helped shape the ideas behind our research. We hope the findings in this report will go on to aid in the development of policies to equal the playing field when it comes to education opportunity in Australia.

A handwritten signature in black ink, appearing to read 'Alan Duncan'.

Professor Alan Duncan

Director, Bankwest Curtin Economics Centre
Curtin Business School, Curtin University

Executive summary

The role of education as a pathway out of disadvantage has featured strongly in policy rhetoric over time. Successive governments have introduced policies that have enabled greater access to higher education. Yet there remains concern that the educational opportunities for our children are unevenly distributed across locality, with something of a ‘postcode lottery’ within major population centres in terms of educational outcomes and achievements.

The analysis in the report makes it clear that many of today's young children will not receive a ‘fair go’ in accessing education opportunities, for no other reasons than family background, demographic characteristics and geography.

A child from a low socio-economic background is up to three times more likely to be developmentally vulnerable by the time she or he starts primary school. An Indigenous child is 40% less likely to finish high school and 60% less likely to go to university compared with a non-Indigenous child. A child born in remote Australia is only a third as likely to go to university as a child born in a major city.

Progress has been made in a number of areas, with the fruits of the education reforms introduced during the Rudd/Gillard governments being realised in a number of areas. More children than before are now accessing pre-school, with positive outcomes flowing on to child development and literacy and numeracy outcomes.

However, the new *BCEC Educational Disadvantage Index* is a sobering reminder of the level of inequality that still exists in our community, with many children falling far behind in educational access, performance and outcomes.

Compared to the most advantaged localities in Australia, children in those fifty areas at greatest educational disadvantage are, on average, half as likely to be enrolled in pre-school at age 4, half as likely to attend pre-school for 15 hours or more, and **seven times** as likely to be vulnerable on two or more developmental domains. Non-attendance rates are nearly five times as high, at 22%, of areas at greatest disadvantage compared to areas of least disadvantage, and nearly half of young people in areas of greatest need are neither learning nor earning.

Our findings also show that funding is largely being distributed relative to need, but what is absent from the current debate on needs-based funding is a clear understanding of the extent to which the funding changes being proposed under Gonski 2.0 would lead to improvements in educational outcomes.

The findings in this report also draw out points in the education journey where issues emerge and where we need better policy responses. This includes greater emphasis on the early years, innovative solutions to the problematic transition from primary to high school especially for Indigenous children, and bespoke programs that target a number of equity groups that are not receiving the same outcomes as other children and young people.

It is also clear that education reform will need to go beyond funding in order to address the complex barriers that impede our most vulnerable children over the course of their education journey.

Key findings

Early Childhood Education

The importance of the early years in influencing outcomes in later life has been well considered.

Enrolment in pre-school in the year before schooling has increased considerably across states and territories in the last five years.

1 in 4 children enrolled in pre-school are not accessing 15+ hours of pre-school each week in their year before formal schooling.

Considerable variation exists across Australia's regions when assessing universal access to early childhood education.

Developmental Outcomes – AEDC

More than 1 in 5 Australian children in their first year of schooling are developmentally vulnerable on one or more domain(s).

Boys are twice as likely as girls to be developmentally vulnerable.

Indigenous children are twice as likely as non-Indigenous children to be developmentally vulnerable on one or more domain(s) and three times as likely when assessed on two or more domains.

One in three children living in the lowest socio-economic areas across Australia experience one or more developmental vulnerabilities in their first year of schooling.

Children living in very remote areas across Australia are three times more likely to be developmentally vulnerable on two or more domains.

Primary and Secondary School

Engagement

Student engagement is a critical element to achieve, maintain and improve educational outcomes and in helping to close the achievement gap for disadvantaged students.

Engagement can be measured through a number of ways – at its rawest form through student enrolments, attendance and retention rates, but ideally through more nuanced indicators.

Enrolment

Enrolment rates for non-Indigenous students stand at almost 100%.

School enrolment rates for Indigenous children have been increasing over time from 84.1% in 2008 to 97.8% in 2014.

Attendance

Student attendance decreases the further children live from major cities.

The gap in student attendance rates between Indigenous and non-Indigenous students remains constant throughout primary school, averaging around 8 percentage points, but deteriorates rapidly once high school commences, reaching 15 percentage points by Year 10.

Secondary school attendance rates for Indigenous students in very remote areas are 20 percentage points lower than Indigenous students living in major cities.

The Northern Territory has the widest gap in attendance rates between Indigenous and non-Indigenous students in both primary and secondary school – 20.2 and 28.4 percentage points respectively.

Around half of Indigenous students attending a government primary school have an attendance rate of 90% or more, compared to 80% of non-Indigenous students.

Retention

Young people are now expected to continue on with education until the age of 17.

The Australian Capital Territory has the highest retention rate for students continuing through to Year 12 at 92.4%.

Only 35% of Indigenous students in the Northern Territory continue through to Year 12.

The states and territories with the best Indigenous apparent retention rates were the Australian Capital Territory and South Australia, where the Indigenous apparent retention rates for Year 7/8 to Year 12 were 95.7% and 93.8%, respectively.

South Australia has achieved an apparent retention rate of 100% for female students and 93.6% for males.

Performance

NAPLAN is used to gauge the level of school performance across equity groups and over time. A number of limitations exist when using this indicator.

Participation in NAPLAN decreases as students progress to high school.

As with school attendance rates, NAPLAN participation rates for Indigenous students remain relatively stable in the primary school years, but decrease dramatically once in secondary school.

Tasmania and New South Wales consistently have the highest NAPLAN participation rates among Indigenous students, with participation levels similar to the non-Indigenous population throughout primary school.

The ACT has the most stable NAPLAN participation rate across the schooling years, with a slight increase in participation from Years 5 to 7, followed by a small decline in Year 9.

The proportion of students at or above national minimum standards in reading has been increasing over time across almost all states and territories and year levels for both Indigenous and non-Indigenous students.

Queensland has seen the biggest improvement in students achieving at or above the national minimum standard in reading. The proportion of students meeting the minimum standard in reading increased by 19 percentage points for non-Indigenous children and 14.3 percentage points for Indigenous children in Queensland between 2008 and 2016.

The gap in NAPLAN performance between Indigenous and non-Indigenous students is about 10 percentage points among those living in major cities in Australia. This widens substantially as the location becomes more remote.

98 per cent of children in Year 3, whose parent achieved a bachelor degree or higher were reading at or above the national minimum standard, compared to 86 per cent of children whose parents were educated to Year 11 or below.

Higher Education

There have been substantial reforms to the Australian higher education system designed to increase access and equity.

The Bradley Review argued the need for Australia to increase the proportion of its population with university level qualifications in order to remain internationally competitive.

In line with the Bradley Review's recommendations for increased participation, the Labor government

Key findings (continued)

announced a target for 40% of all Australians aged 25-34 to hold a bachelor degree or higher by 2025, which compared to around 32% at the time.

The government also set a specific target for participation by low SES students – by 2020, 20% of all domestic undergraduate students in Australia would come from low SES households.

Gaining a university level qualification is associated with significant advantages in life, including higher wages and better employment rates.

Six equity groups have been identified to increase their participation in higher education: Aboriginal and Torres Strait Islanders, persons from low SES backgrounds, from rural and regional areas, with a disability, from non-English speaking backgrounds and women studying non-traditional subject areas.

Students with a disability is the equity group that has seen the greatest expansion, followed by Indigenous students. Enrolments of students in regional and remote areas have increased by 31%, and of women studying in non-traditional areas by 21% since the turn of the century.

Indigenous Australians are around 40% less likely to complete Year 12. However, even conditional upon Year 12 completion, rates of entry into university for Indigenous Australians are sharply lower than for other Australians.

Under-representation of Indigenous students is evident across each of the states and territories.

The greater barrier Indigenous Australians face to gaining a degree is not getting through university, but getting to university in the first place.

Low SES students made up only 9.4% of domestic enrolments in the Group of Eight universities, compared to 16.6% across other universities.

There is substantial variation among states and territories in higher education access overall and for individual equity groups, reflecting different demographics and geography.

Western Australia's higher education sector generally performs poorly in terms of accessibility for disadvantaged groups, with the lowest or near-lowest equity ratios for Indigenous students, students from low socio-economic and non-English speaking backgrounds, and from regional and remote areas.

Education Mobility

A high level of social mobility is often associated with a more equitable society in which individuals and families are able to benefit from favourable economic and social opportunities and escape from disadvantage.

Almost two-thirds of Australians whose parents achieved a university qualification have also achieved a tertiary level qualification. This compares with those whose parents achieved Year 10 or below, where 21% were able to gain a tertiary qualification.

Social mobility in education has increased notably among the cohort of Australians born in the 1970s. Those born in the 1970s whose parents were educated to Year 10 or below were 50% more likely to attain tertiary education than earlier cohorts.

There is also some evidence to suggest that these high rates of mobility in education are tailing off for the latest cohort of Australians born in the 1980s.

BCEC Educational Disadvantage Index

Key purpose behind the Index is to uncover the extent of inequality in educational opportunities by locality, to reveal hotspots of high or low education outcomes, and to support the development of targeted and effective policy initiatives that improve our childrens' school experience and educational achievements.

The Index includes a number of indicators related to access, performance and outcomes, with data derived from the AEDC, ACARA, NAPLAN, Census and National Early Childhood Education and Care Collection.

The Index is used to map areas of relative advantage and disadvantage, profile areas of high and low disadvantage and to assess the key drivers of educational disadvantage.

Australia

The most disadvantaged areas are all located in very remote regions of Australia, spanning the Northern Territory, South Australia and Western Australia.

Children living in the least disadvantaged areas will achieve on average double the score in reading, writing and numeracy tests than those living in the most disadvantaged areas.

Students in the most disadvantaged areas receive more funding per student and have smaller class sizes than those in the least disadvantaged areas across Australia.

State Comparisons

Differences in educational outcomes between states and territories not only arise from the distinct profiles of children and young people, but also because of differences in the way in which education is delivered in each state and territory.

The most disadvantaged 10% of children in the ACT are no more disadvantaged than the most advantaged 10% of children in the NT.

NSW and Victoria have similar within-state variation profiles, with similar medians and index values at each point along the distribution.

WA and SA also have similar profiles and are typically facing greater educational disadvantage than the more populous states of Victoria and NSW.

New South Wales

Educational disadvantage is spread across remote, regional and city areas of NSW, whereas relative advantage is more likely to exist in the very wealthy areas surrounding Sydney's northern suburbs and harbour.

Far west NSW has the highest levels of disadvantage relative to other areas across NSW.

The top and bottom ten areas of educational disadvantage within NSW demonstrate the divide between children that have considerable advantage and those that do not.

1 in 5 children in the most disadvantaged areas in NSW are vulnerable on two or more developmental domains in their first year of school compared to only 5.5% of children in the least disadvantaged areas in the State.

Key findings (continued)

Victoria

Victoria has generally far fewer areas with significant educational disadvantage compared to other states and territories, however, a number of clusters of disadvantage are evident within its capital – Melbourne.

The most disadvantaged areas within Victoria are less likely to be characterised as an Indigenous community and more likely to be located within a major city than those identified in the bottom ten in NSW, Qld, WA, SA and the NT.

Pockets of disadvantage are located throughout the state and include Shepparton, Morwell and Mooroopna, which record relatively high levels of educational disadvantage.

Relative to the national average, the bottom ten areas in Victoria score reasonably well on a number of indicators.

Among the ten most disadvantaged areas in Victoria, the proportion of children that are developmentally vulnerable in two or more domains is double that of the national average.

The bottom ten areas have a much higher proportion of children from a non-English speaking background, which is likely to be influencing developmental and school performance scores.

Queensland

Many of Queensland's regions record high to very high levels of educational disadvantage, with children doing poorly on multiple education indicators.

A ribbon of advantaged areas is evident along the Brisbane River extending from Bellbowrie through to Eagle Farm.

Educational disadvantage tends to increase as suburbs spread away from the River, with high disadvantaged areas

directly bordering relatively advantaged areas in a number of locations.

Wacol and Riverview in the west stand out as problem areas, as well as the Logan-Beaudesert region south of the city.

Queensland areas that score in the bottom ten on the educational disadvantage index are likely to be located in remote and very remote regions across the State and a number of these areas are also Indigenous communities.

Queensland's most disadvantaged areas are doing better than the national average on a number of indicators, especially universal access to pre-school, suggesting this investment in early childhood will begin to payoff in years to come.

South Australia

The remote regions of South Australia, including Outback, Coober Pedy and APY Lands while sparsely populated also have high levels of relative educational disadvantage.

Relative disadvantage also exists within the city areas of North Adelaide and Elizabeth and its surrounding suburbs.

More advantaged areas are located in the inner city areas through to the Adelaide Hills region.

Almost 60% of children in the most disadvantaged areas are attending pre-school for less than 15 hours each week, compared to around 33% nationally.

South Australian children living in the ten most disadvantaged areas are twice as likely to be developmentally vulnerable on one or more domain in their first year of schooling and three times as likely to be developmentally vulnerable on two or more domains as children nationally.

Non-attendance rates at school are also double the rate of the national average for children in the most disadvantaged areas in South Australia, and triple the rate of the most advantaged areas in South Australia.

The most disadvantaged areas are typically receiving greater amounts of income for each student enrolled in primary and secondary schools in these areas, averaging \$23,080 per student, compared to \$14,527 per student in the most advantaged areas.

Western Australia

The remote areas across the state typically have the highest level of educational disadvantage, with children living in these areas having less access to pre-school, lower attendance levels and lower performance in literacy and numeracy testing.

The most advantaged areas are clustered around the Swan River and nearby Indian Ocean coastline, starting from North Fremantle and extending north to Hillarys. The fringes of the city reveal relatively higher levels of educational disadvantage, from Rockingham and Kwinana in the south, Stirling in the north, along with the Gosnells to the east of the city.

The most disadvantaged areas are located in remote and very remote areas throughout the State, with Leinster-Leonora ranked bottom, followed by Halls Creek, East Pilbara, Roebuck and Meekatharra. Many of these communities have a high Indigenous population, averaging 37.3% and ranging from 18.0% in Roebourne through to 78.3% in Halls Creek.

Only 40% of children in the most disadvantaged areas in WA are attending pre-school for 15 or more hours on average, compared to almost 70% nationally.

Children in these areas also have high rates of developmental vulnerabilities, with 1 in 2 children assessed as developmentally vulnerable on one or more domain and more than 1 in 3 developmentally vulnerable in two or more domains.

School funding per student is higher than the national average in these areas, reflecting the relative disadvantage and higher cost of delivering services to remote areas. Among the 10 most disadvantaged areas, funding ranges from \$19,707 per student in Carnarvon up to \$54,077 per student in East Pilbara. This compares to the national average of \$14,346 per student.

The lack of access to services in many of the disadvantaged areas across Western Australia is evident, with a very high proportion of children living in households that do not have access to the internet – 46.7 per cent on average.

Unemployment rates are also curiously low in these regions, but the level of young people not engaged in work or in education suggests that many people are simply not within the workforce to be counted in these figures.

Tasmania

Many of the areas within Tasmania have moderate to high levels of educational disadvantage, with more advantaged areas located in the State's capital – Hobart and second largest city – Launceston.

The most advantaged areas in the State are very close to the national average in many of the indicators including pre-school access, non-attendance rates, gross income per student and student to teacher ratios.

Key findings (continued)

Children living in the most disadvantaged areas in Tasmania have double the national rate of children vulnerable in their first year of school on one or more domains.

Access to the internet and youth engagement in either earning or learning are problem areas for Tasmania.

Northern Territory

The Northern Territory is typified by very high levels of disadvantage across many of its remote Indigenous communities.

A comparison of the top and bottom ten areas of educational disadvantage in the Northern Territory reveals one of the largest divisions among Australia's states and territories.

The bottom ten areas in the Northern Territory are among the most disadvantaged areas in Australia, with extremely high levels of developmental vulnerability and school non-attendance, and very low performance in literacy and numeracy. In most instances these rates of disadvantage are double, triple and up to four times the national average.

Two-thirds of children in the bottom ten areas in the Northern Territory are developmentally vulnerable on one or more domain, and one in two are vulnerable in two or more domains.

Australian Capital Territory

As a stark comparison to the NT, the Australian Capital Territory is consistently characterised as a location with relatively little disadvantage.

A number of similarities can be seen between the top and bottom ten areas within the ACT, including similar proportions of children access pre-school.

Children in the bottom ten areas in the ACT are more likely to be

developmentally vulnerable and more likely to have higher levels of school non-attendance.

Drivers of Educational Inequality

The most disadvantaged areas in Australia are characterised by low educational participation, high rates of developmental vulnerability and risk, lower achievement in national literacy and numeracy testing, poor high school retention rates and lower pre-school and school attendance rates.

The most disadvantaged areas are also more likely to have children attending government schools than independent schools, but almost equally as likely to be attending a Catholic school when compared to those in the least disadvantaged areas.

Over four times the share of children are assessed as vulnerable on at least one AEDC domain in those 50 areas at the greatest educational disadvantage (49.7%) compared with children in the 50 least disadvantage areas (11.9%). This rises to a **sevenfold** difference when looking at the share of children vulnerable on at least two domains (33.5% compared with 4.8%).

Nearly half of children who are in pre-school receive less than 15 hours of care, compared with just over a quarter of children in the least disadvantaged 50 areas.

Average NAPLAN scores are typically between 150 and 190 points lower among children attending schools in the most educationally disadvantaged areas, compared with the least disadvantaged.

Nearly half of young people (49.4%) in the lowest ranked areas are not studying at age 17, compared with 2.5% in areas of least educational disadvantage.

And less than half (47.3%) complete any type of post-school qualification. Around the same share (49.7%) of young people in the most disadvantaged areas are neither earning nor learning. This compares with only 12.8% of young people in the least advantaged areas who are neither working nor studying.

For the most disadvantaged areas, the non-attendance rate stretches to nearly 22.1%. This compares with a non-attendance rate of only 4.5% for schools in areas with the least educational disadvantage. The formula for disbursement of financial resources does appear to be functioning according to needs-based criteria, with those schools in areas of greatest educational disadvantage receiving a gross income of \$24,100 per student, some 50% higher than the average of \$16,400 for the top 50 areas.

However, there is a huge gulf in access to internet resources available to students to support their learning away from school. Around 44.5% of families in the lowest ranked areas, almost entirely living in very remote areas, have no internet access. At the other end of the scale, virtually all families in the most advantaged areas have the benefit of internet access.

Indigenous children suffer by far the most significant inequality in educational disadvantage.

The most disadvantaged areas have twice the average share of single parent families and a higher share of children within the local population.

Remote or very remote areas with more than a quarter of the population aged 0 to 14 receive 28% less per student in government funding, and 26% less in total gross funding than remote areas with child populations of less than 15%.

Introduction

When we think of a ‘good society’ – a society that is fair and just – one of the defining characteristics is likely to be that all individuals have equal opportunity to realise their potential, irrespective of the circumstances into which they are born. This is engrained in the Australian ethos of ‘a fair go’. Access to education plays a critical role in determining whether or not individuals are given this opportunity.

Having a higher level of education, or coming from a more educated family background, is associated with better outcomes across a range of life’s domains, including health, labour market outcomes, family formation and engagement with the justice system (Hartog & Oosterbeek 1998: p.245; Haveman & Wolfe 1984; Feinstein et al, 2008). Consequently, educational attainment is one of the main indicators used when measuring people’s socio-economic status. Higher levels of education attainment of the population are also associated with social and economic benefits at a national level, such as higher productivity associated with accelerated pace of innovation (SCRGSP 2016). Moreover, there is evidence internationally that greater equality in education leads to greater social cohesion (Feinstein et al, 2008).

A society’s education systems and policies are thus critical to the extent to which equality in opportunity is realised. Equality requires universal access to quality early childhood education, primary and secondary education and then, conditional upon ability, access to post-school and higher education.

This report examines the institutional and policy frameworks governing education in Australia and each of the states and territories, with a focus on equity through the life course. It assesses the degree to which Australians have equal opportunity through education according to where they live and other key demographic characteristics. In addition to assessing equality and performance of the education systems in each state and territory, the report pays particular attention to outcomes for selected groups known to face barriers to educational participation: including those from lower socio-economic backgrounds, Aboriginal and Torres Strait Islander Australians and people from rural and remote areas.

The report structure follows an education life-cycle model, with the subsequent chapters assessing equity across early childhood education, primary and secondary schooling and post-school education and training. The level of education mobility within Australia is also assessed and comparisons. The report then provides an assessment of social mobility in Australia and introduces a new BCEC Educational Disadvantage Index that maps local areas of relative advantage and disadvantage, allowing detailed comparisons of those areas on a range of key indicators relating to access, performance and resourcing. The final chapters bring this information together to identify the key drivers of educational disadvantage and the steps needed to promote a fairer educational system.

Early

Childhood Education

Early Childhood Education

Young Australian children are now expected to be accessing at least 15 hours of formal pre-school education each week in the year before commencing school

The importance of the early years in influencing outcomes in later life has been well considered. What happens to a child in their first few years of life, their physical health, the connections they form, the resources they have access to and the care and education they receive can have lasting impacts on their future outcomes.

This knowledge has led to an increased policy focus and investment in younger children, especially in relation to early intervention and education. In Australia, this policy focus saw the Council of Australian Governments introduce the National Early Childhood Development Strategy in 2009, with an overarching goal to ensure that “by 2020 all children have the best start in life to create a better future for themselves and the nation.” (COAG 2009)

The Strategy comprised a number of initiatives including a National Partnership Agreement on Early Childhood Education, an Early Years Learning Framework, Closing the Gap initiative and National Framework for Protecting Australia’s Children. The Strategy also incorporated a number of initiatives that link closely with child wellbeing including a national plan to reduce violence against women and children and paid parental leave entitlements.

Young Australian children are now expected to be accessing at least 15 hours of formal pre-school education each week in the year before commencing school under the National Partnership Agreement within the COAG Strategy.

In this chapter, we look at how well Australian states and territories are performing when it comes to access to pre-school for children in their year before school, and earlier, and how this access varies for different equity groups and over time. We also assess the developmental outcomes for these children in their first year of schooling through the Australian Early Development Census. Not all equity groups are assessed due to data or data access limitations.

We also note that access to quality childcare in the early years can be linked to better developmental and educational outcomes, especially for children from vulnerable or disadvantaged backgrounds. Due to the scope of this report, we have not included an assessment of equity in relation to child care and also note that many of the early childhood and education programs are delivered through a formal child care setting.

Pre-school Access

Pre-school education programs can help provide children with the learning foundations and skills they need to enter their first year of formal schooling. Recent findings from the Australian Early Development Census (AEDC) have revealed that children who attended preschool were less likely to be developmentally vulnerable across all five key child development domains in their first year of schooling (AEDC 2015a).

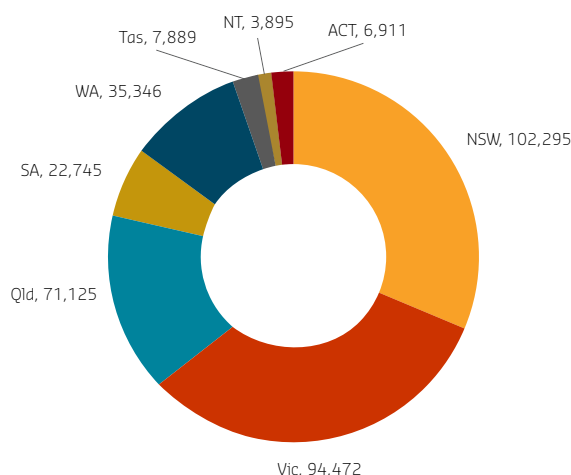
Under the National Partnership Agreement, young Australian children are now expected to be accessing at least 15 hours of formal pre-school education each week in the year before commencing full-time schooling, with the Commonwealth government providing additional funding to states and territories to deliver on this policy.

Since 2008, the Commonwealth government has invested almost \$3.2 billion in pre-school programs and in the most recent 2017-18 budget a further \$428 million has been committed to extend the National Partnership Agreement. The strategy also includes a focus on increasing participation for Indigenous, disadvantaged and vulnerable children throughout Australia.

The result of this investment and national policy initiative has been a considerable increase in both enrolments and participation in early childhood programs. All states and territories are now reporting enrolment rates for children in a quality early childhood education program in their year before schooling above or very near the 95 per cent benchmark (NPA 2015). However, the indicator used to assess this performance is flawed due to the challenge in discerning the number of children in each state and territory who are due to commence formal schooling in the next year. Children in Queensland for example are more likely to start school earlier than children in Tasmania due to the age entry requirement, hence a lower proportion of five year olds would be attending pre-school.

In 2016, there were 344,678 children aged 4 or 5 years enrolled in a preschool program across Australia (Figure 1). A breakdown by jurisdiction shows the number of children enrolled, with values aligning with the relative population in each state and territory. More than 100,000 children were enrolled in NSW, 94,472 in Victoria and 71,125 in Queensland. WA is providing pre-school to 35,346 4 and 5 year olds and South Australia 22,745.

Figure 1 Pre-school enrolments, states and territories, 2016



In 2016 there were a total of 344,678 children aged 4 or 5 years enrolled in a preschool program across Australia.

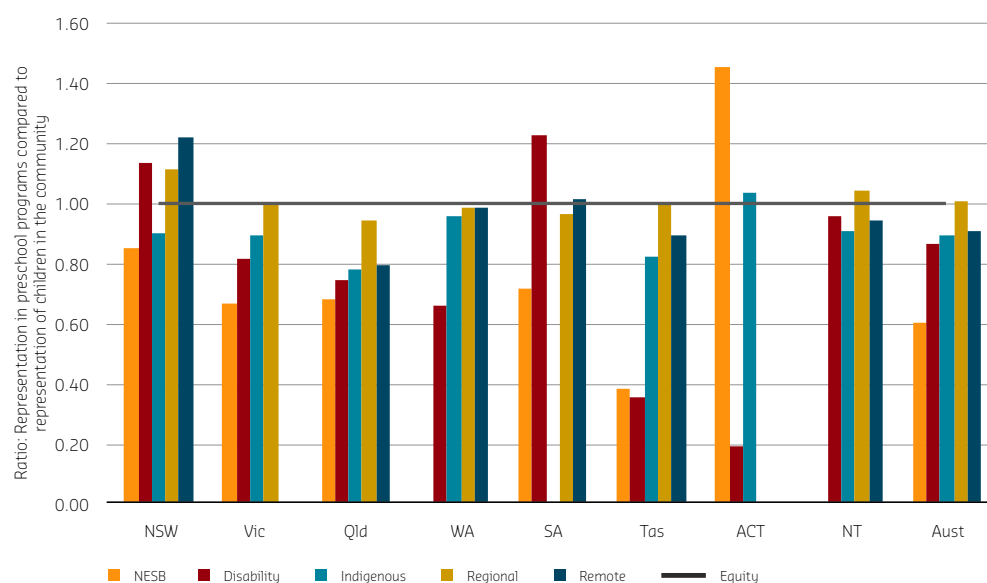
Children from a non-English speaking background have the most inequitable outcome when it comes to pre-school enrolments across all states and territories, with the exception of the ACT.

Equity Groups

Not all children are accessing pre-school at the same rate as their representation in the community. Figure 3 shows the equity ratio for special needs groups. A score of one indicates equal representation of the group relative to their representation in the community. Scores below one represent unequal outcomes. It is important to note that a number of limitations exist with comparisons between states and territories and the underlying data used to assess the level of equity that exists between special needs groups and their access to universal pre-school.

Children from a non-English speaking background have the most inequitable outcome when it comes to pre-school enrolments across all states and territories, with the exception of the ACT. Nationally, the equity ratio for this sub-population is the lowest amongst the identified special needs group at 0.60, with the lowest level recorded in Tasmania (0.38).

Figure 2 Equity Ratio: Pre-school enrolment for special needs groups, states and territories, 2015



Note: Equity ratio equals enrolment share divided by population share. Enrolment does not always equate to attendance. NESB = Non-English Speaking Background. State statistics are not directly comparable for some special needs groups and a number of challenges with consistent data collection exist. Statistics for SA Indigenous equity ratios have not been included due to a large anomaly with the data collection.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017, Table 3A.16

Indigenous children also tend to have lower representation in pre-school enrolments compared to their representation in their respective states and territories. This is particularly apparent for Queensland, with an equity ratio of 0.78 and Tasmania, with the second lowest equity ratio of 0.82. The Northern Territory, Western Australia, NSW and Victoria have reasonably high equity ratios (above 0.90) but are still below parity. The ACT has an equity ratio for young Indigenous children above parity, which is likely to be driven by the cross-border education access by families in regions surrounding the ACT.

States and territories do not use a consistent measure of disability in assessing access for this equity group, which signals a gap in data collection but also the limitations of comparing jurisdictions. Noting these limitations, children with a disability are under-represented in pre-school enrolments in Victoria, Queensland, WA, Tasmania and the ACT, but over-represented in NSW and South Australia.

Children in regional areas are typically well represented in pre-school, with representation reaching or above parity in most states and territories. However, for children living in remote areas across Australia, representation in pre-school relative to population is mixed. Queensland is the least equitable when it comes to children in remote areas enrolled in pre-school, with an equity ratio of 0.80.

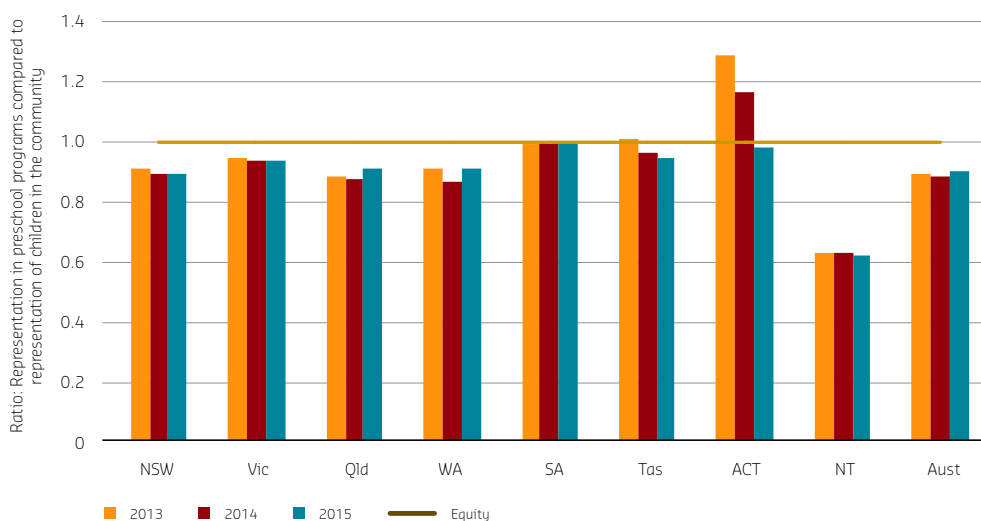
Turning to attendance rates (Figure 3), children from disadvantaged backgrounds are under-represented in pre-schools across almost all states and territories, with little improvement over the three years between 2013 and 2015. South Australia and the ACT have achieved parity or above, with the proportion of children from a low SES background attending pre-school at or above the proportion in the state. The ACT will often score above parity due to children from the immediate, (lower SES) surrounding areas travelling to the Territory to attend pre-school and other educational institutions.

The Northern Territory performs the worst among all states and territories, with an average equity ratio of around 0.60, and no sign of improvement over time. The Northern Territory also bears the highest proportion of children that are classified as disadvantaged according to the SEIFA index – just over one-third of children and the highest proportion of Indigenous children. Tasmania also has a similarly high proportion of low SES children – at one-third, but has achieved parity or close to parity in pre-school attendance for disadvantaged children.

Victoria is a consistently high performer, with equity ratios for low SES students reaching 0.94, however, Victoria is also starting from a position where there are far fewer children from a low SES background living within the State – 16.5 per cent compared to one-fifth of children nationally.

Queensland and NSW are performing reasonably well, with equity ratios of 0.90 and 0.91 respectively.

Figure 3 Equity Ratio: Pre-school attendance for disadvantaged children, states and territories



The Northern Territory has the least equitable outcomes for pre-school attendance for children from disadvantaged backgrounds

Note: Equity ratio equals enrolment share divided by population share. Enrolment does not always equate to attendance. Disadvantage is defined to be children residing in an area with a Socio-Economic Indexes for Areas (SEIFA) Index of Relative Socio-Economic Disadvantage (IRSD) quintile of 1.

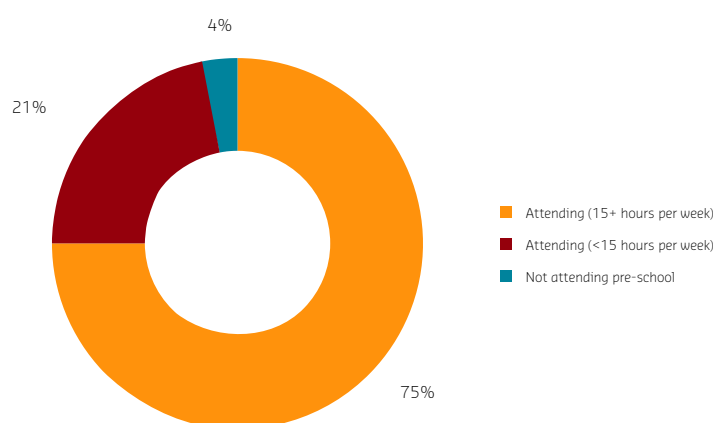
Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017, Table 3A.1

1 in 5 children enrolled in pre-school are accessing less than 15 hours of pre-school each week in the year before commencing formal schooling

Accessing Universal Early Childhood Education – 15+ hours

Of those children enrolled in pre-school in the year before commencing formal schooling, around 96 per cent were also attending for at least one hour in the reference week (Figure 4). And three in every four children enrolled in pre-school were accessing 15 or more hours each week. A further 4 per cent were not in attendance and one in five were attending less than the prescribed 15 hours each week.

Figure 4 Attendance at pre-school for those enrolled in year before schooling, 2016



Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from ABS Cat No.4240.0 Preschool Education

While most states and territories are reporting well above 90 per cent enrolments in pre-school for children deemed to be in their year before formal schooling, attendance for 15+ hours each week is much lower (75%), though this has been increasing across most states and territories (Figure 5).

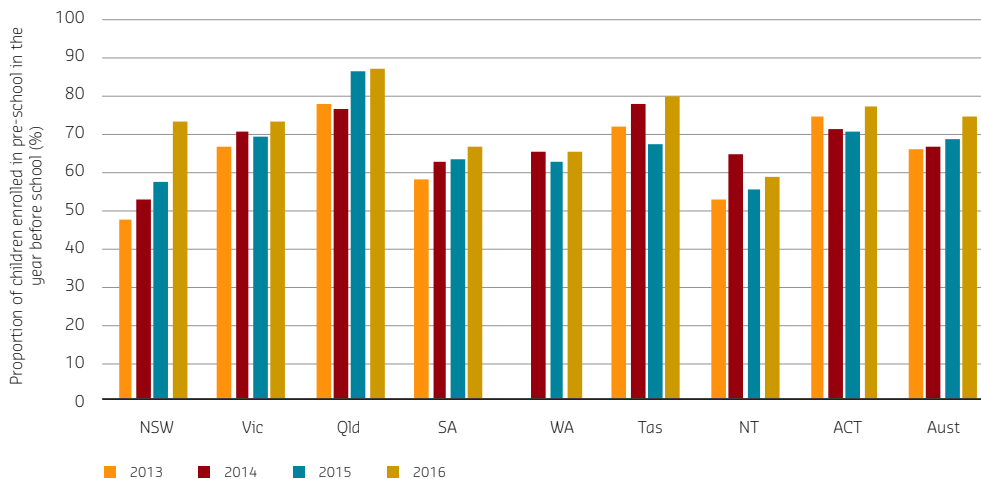
Nationally, since 2013 (which was the original target set to achieve universal pre-school attendance for all children), the proportion of children enrolled in pre-school and attending 15+ hours in their year before school has increased from 66 to 75 per cent (Figure 5).

NSW has seen a marked improvement in the number of children accessing pre-school in the year before full-time school

Queensland leads the way with the highest proportion of enrolled children attending 15+ hours of pre-school each week in their year before schooling – 87.5 per cent in 2016. This is followed by Tasmania (80%); and the ACT (77.6%). NSW and Victoria are both sitting very close to the national average with around 74 per cent of enrolled children attending 15+ hours of pre-school each week in the year before commencing school.

In 2013, NSW ranked last among the states and territories, with under half of all children enrolled accessing 15+ hours of pre-school each week. The State has made headway in this area in a very short timeframe, jumping to 73.4 per cent of children in the latest 2016 figures.

South Australia has also made good progress in this area, with pre-school attendance of 15+ hours for those children enrolled increasing from 58.4 per cent to 67.1 per cent in the years between 2013 and 2016.

Figure 5 Enrolled and attending 15+ hours of pre-school in year before schooling, states and territories

Note: The 2013 data point for Western Australia has not been included as it is considered to be an anomalous value.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from ABS Cat No.4240.0 Preschool Education

Indigenous children

Over 93 per cent of Indigenous children enrolled in a pre-school program in their year before formal schooling are also attending. This proportion is slightly lower than non-Indigenous children – 96 per cent (Figure 6).

Some states and territories perform well when looking at pre-school attendance overall for both Indigenous and non-Indigenous children, however, large gaps appear when assessing attendance by hours each week. South Australia has similar proportions of Indigenous and non-Indigenous children attending pre-school in their year before schooling, however, a larger proportion of Indigenous children are attending for less than the prescribed 15+ hours each week – 51 per cent. This compares to only 30 per cent of non-Indigenous children, with most (68%) accessing 15+ hours of pre-school each week.

Western Australia has similar results, with reasonably high access overall, but less so for the prescribed 15+ hours. A further 8 per cent of Indigenous children enrolled in pre-school in their year before schooling in WA were not attending any pre-school in the reference week.

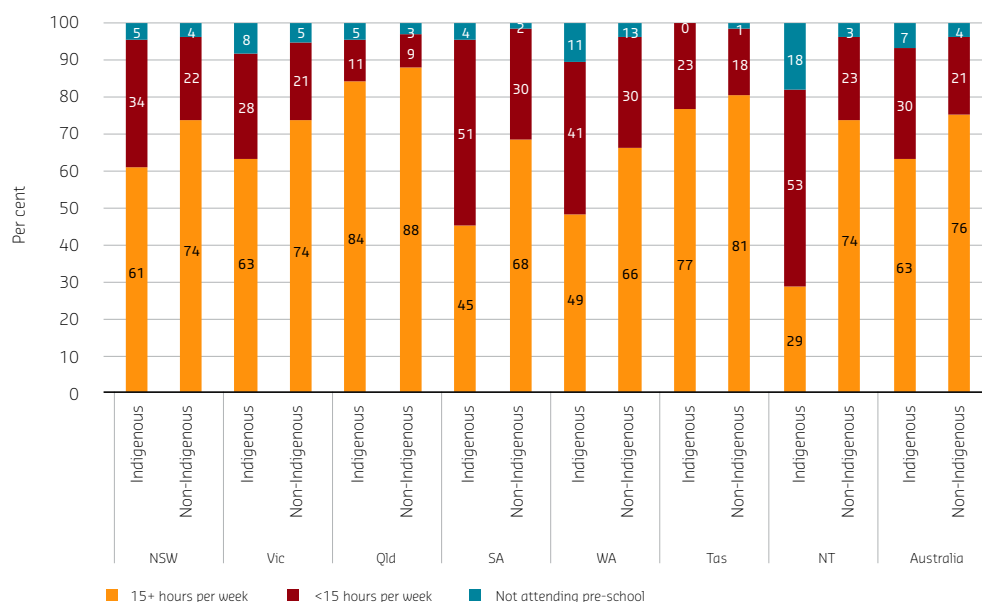
Queensland is again performing the best when it comes to children accessing 15+ hours of pre-school in their year before schooling, with the highest rate for both enrolled Indigenous and non-Indigenous children and the smallest gap between the two groups. Tasmania is ranked second in attendance of 15+ hours of pre-school each week, with the gap between Indigenous and non-Indigenous children equal to that of Queensland.

Large gaps appear when assessing pre-school attendance by hours each week.

Queensland has the highest proportion of Indigenous and non-Indigenous children accessing 15+ hours of pre-school each week – 84 per cent and 88 per cent respectively.

Almost 1 in 5 Indigenous children enrolled in pre-school in the Northern Territory are not accessing any hours in their year before formal schooling.

Figure 6 Attendance at pre-school for those enrolled in year before schooling, Indigenous status, 2016



Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from ABS Cat No.4240.0 Preschool Education

The Northern Territory has the biggest divide between non-Indigenous and Indigenous children accessing both pre-school overall and 15+ hours of pre-school each week for children in their year before schooling. Almost 1 in 5 Indigenous children enrolled in pre-school in the Northern Territory are not accessing any hours in their year before formal schooling. Of those that are attending pre-school, non-Indigenous children are far more likely to be accessing 15+ hours each week (74%), compared to only 29 per cent of Indigenous children.






Developmental Outcomes

As part of the commitment to ensuring children have the best start in life, the Australian government funded the roll out the Australian Early Development Census (AEDC) in 2009, which provides a national measure of children's development in their first year of schooling (AEDC 2015). This data collection has already revealed a positive association between pre-school attendance in the year before schooling and developmental outcomes both in the first year of schooling and in subsequent years (AEDC 2015a; Warren and Haiken-DeNew 2013)

The AEDC is conducted every two years, with teachers completing around 100 questions for each child that provides important information across five key child development domains that provide the foundation for good health, education and social outcomes (AEDC 2015). These domains include physical health and wellbeing, social competence, emotional maturity, language and cognitive skills and communication and general knowledge (Table 1).

To date, more than 95 per cent of schools with eligible children participated in each collection and data on over 850,000 Australian children has been collected (AEDC 2017).

Table 1 AEDC Domains

Domain	Icon	Description
Physical health and wellbeing		Children's physical readiness for the school day, physical independence and gross and fine motor skills.
Social competence		Children's overall social competence, responsibility and respect, approach to learning and readiness to explore new things.
Emotional maturity		Children's pro-social and helping behaviours and absence of anxious and fearful behaviour, aggressive behaviour and hyperactivity and inattention.
Language and cognitive skills (school-based)		Children's basic literacy, interest in literacy, numeracy and memory, advanced literacy and basic numeracy.
Communication skills and general knowledge		Children's communication skills and general knowledge based on broad developmental competencies and skills.

Source: AEDC Data Guidelines. <https://www.aedc.gov.au/resources/detail/aedc-data-guidelines>

The scores that each child receives are then assessed against a 'cut-off' for each of the developmental domains and children are graded as being either developmentally on track, developmentally at risk or developmentally vulnerable (Table 2). More information about the scores and cut-off methodology can be found in the Glossary and Technical Notes.

Table 2 AEDC domain category

Domain	Calculation of children in each category based on cut off scores from 2009
Developmentally on track	Children who scored above the 25th percentile (top 75 per cent) of the national population.
Developmentally at risk	Children who scored between the 10th and 25th percentile of the national population.
Developmentally vulnerable	Children who scored below the 10th percentile (lowest 10 per cent) of the national population.

Source: AEDC Data Guidelines. <https://www.aedc.gov.au/resources/detail/aedc-data-guidelines>

More than 1 in 5 Australian children in their first year of schooling are developmentally vulnerable on one or more domain(s).

In the latest AEDC collection, 22 per cent of children were developmentally vulnerable on one or more domain(s), and 11.1 per cent were developmentally vulnerable on two or more domains. There was no change between 2012 and 2015, which were both below the 2009 figures.

Table 3 AEDC results for vulnerable children by characteristics, 2009, 2012 and 2015

Category	Subcategory	Developmentally vulnerable on one or more domain(s) (%)			Developmentally vulnerable on two or more domains (%)		
		2009	2012	2015	2009	2012	2015
Overall	Australia	23.6	22.0	22.0	11.8	10.8	11.1
Sex	Male	30.2	28.2	28.5	16.2	14.8	15.3
	Female	16.8	15.7	15.5	7.4	6.8	6.8
Indigenous background	Indigenous	47.4	43.2	42.1	29.6	26.0	26.2
	Non-Indigenous	22.4	20.9	20.8	11.0	10.0	10.2
Socio-economic status	Quintile 1 (most disadvantaged)	32.1	33.2	32.6	17.6	18.2	18.4
	Quintile 2	26.1	24.8	24.8	13.4	12.5	12.9
	Quintile 3	23.0	20.8	20.9	11.3	9.8	10.2
	Quintile 4	20.1	17.9	17.9	9.5	8.3	8.3
	Quintile 5 (least disadvantaged)	16.7	14.3	15.5	7.4	5.9	6.7
Geographic location	Major Cities	22.5	21.1	21.0	11.0	10.1	10.2
	Inner Regional	23.9	22.4	22.4	12.3	11.2	11.7
	Outer Regional	26.9	24.9	25.2	14.1	13.1	13.3
	Remote	31.0	26.0	27.5	16.5	13.5	15.4
	Very Remote	45.3	44.5	47.0	29.7	28.0	31.8
Language diversity	Language Background Other Than English - Total	32.2	29.5	27.8	16.7	14.6	14.2
	Not proficient in English	93.7	93.7	94.1	59.0	58.0	59.2
	Proficient in English	21.8	20.0	19.1	9.6	8.3	8.4
	English Only - Total	21.7	20.2	20.4	10.8	9.9	10.2
	Not proficient in English	93.8	93.7	93.8	75.2	72.3	74.7
	Proficient in English	19.3	17.9	18.0	8.7	7.9	8.1

Source: BANKWEST CURTIN ECONOMICS CENTRE | 2015 AEDC NATIONAL REPORT

LBOTE children

Children with a Language Background Other Than English (LBOTE) were more likely to be developmentally vulnerable on one or more domain(s) (27.8%) and two or more domains (14.2%) than children with an English Only background - 20.4 and 10.2 per cent respectively (Table 3).

The gap between LBOTE children and those who only spoke English has been closing over time, from 10.5 percentage points in 2009 to 7.4 percentage points in 2015 on the developmentally vulnerable in one or more domain(s) indicator.

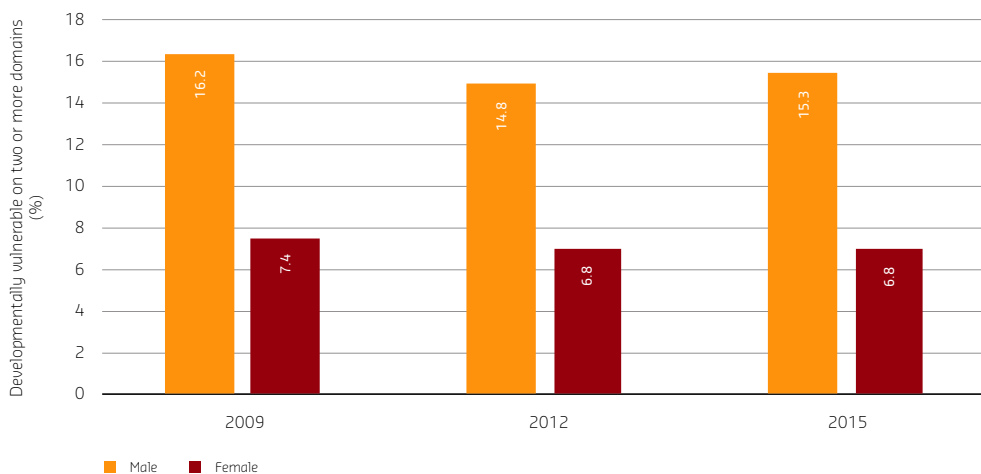
The most disadvantaged children are those reported as not proficient in English, regardless of their language diversity. More than 90 per cent of children who cannot speak English proficiently were reported as developmentally vulnerable on one or more domain(s), and more than half were developmentally vulnerable on two or more domains. More than 90 percent of these children were reported as developmentally vulnerable on the communication skills and general knowledge domain. Language as a basic skill is crucial in early childhood development.

Gender

Boys were twice as likely as girls to be developmentally vulnerable. In 2015, the proportion of boys developmentally vulnerable on one or more domain(s) was 28.5 per cent, compared to only 15.5 per cent of girls. While there has been some small improvement over time for both boys and girls, the gap between the two has widened slightly across the same period with boys 2.3 times as likely to be classified as developmentally vulnerable on two or more domains compared with 2.2 times in previous years (Figure 7).

Boys are twice as likely as girls to be developmentally vulnerable.

Figure 7 Developmentally vulnerable on two or more domains - boys and girls



Source: BANKWEST CURTIN ECONOMICS CENTRE | 2015 AEDC NATIONAL REPORT

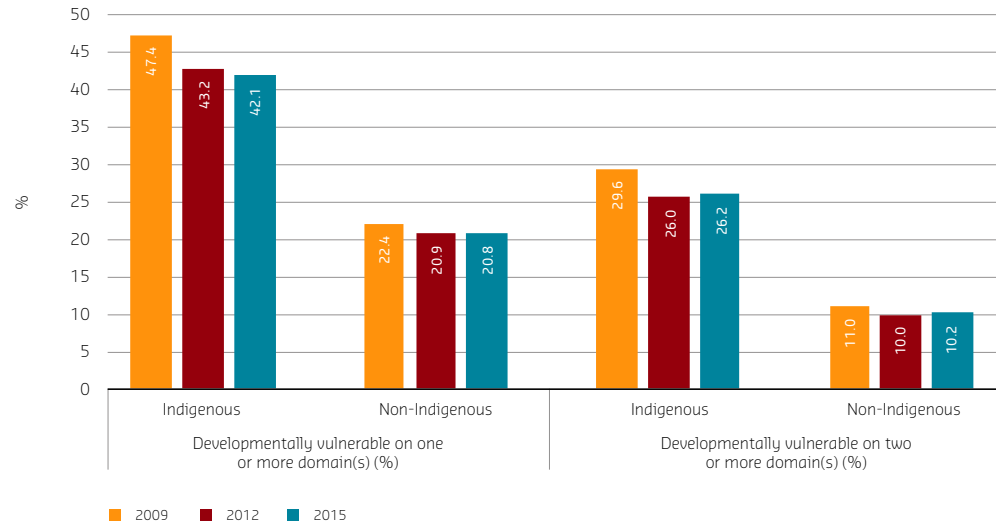
Indigenous children

The proportion of Indigenous children assessed to be developmentally vulnerable on one or more (42.1%) and two or more domains (26.2%) is double that of non-Indigenous children (20.8% and 10.2% respectively) in 2015 (Figure 8 and Table 3). These proportions are smaller than those recorded in 2009, indicating a small improvement in the developmental vulnerabilities of more recent cohorts entering their first year of full-time schooling.

For children developmentally vulnerable on one or more domain(s), the gap between Indigenous and non-Indigenous children has narrowed from 25.0 percentage points in 2009, to 21.3 percentage points in 2015.

Indigenous children are twice as likely as non-Indigenous children to be developmentally vulnerable on one or more domain(s) and almost three times as likely when assessed on two or more domains.

Figure 8 Developmentally vulnerable on one and two or more domains – Indigenous status



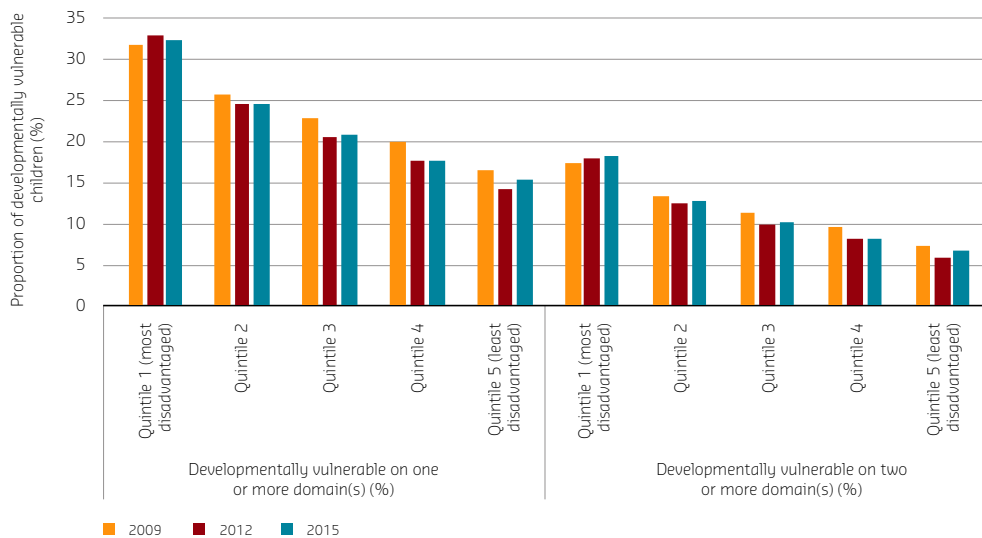
Source: BANKWEST CURTIN ECONOMICS CENTRE | 2015 AEDC NATIONAL REPORT

Socio-economic status

Compared with children from the least socioeconomically disadvantaged areas, those living in the most disadvantaged locations were twice as likely to be developmentally vulnerable on one or more domain(s), and three times more likely to be developmentally vulnerable on two or more domains (Table 3 and Figure 9).

One in three children (32.6%) living in the lowest socio-economic areas across Australia experience one or more developmental vulnerabilities in their first year of schooling, and almost one in five (18.6%) are assessed as developmentally vulnerable on two or more domains. This compares starkly to children living in the highest socio-economic areas in Australia, where just over 15 per cent are vulnerable on one or more domain(s) and only 6.7 per cent on two or more domains.

Over time, improvements can be seen for most of the socio-economic categories, however the gap between the most and least disadvantaged has widened between 2009 and 2015.

Figure 9 Developmentally vulnerable on one and two or more domains – socio-economic status

Note: Socio-economic status is defined using the ABS' Index for Relative Socio-Economic Disadvantage. See Technical notes for further information.
Source: BANKWEST CURTIN ECONOMICS CENTRE | 2015 AEDC NATIONAL REPORT

One in three children living in the lowest socio-economic areas across Australia experience one or more developmental vulnerabilities in their first year of schooling.

Remoteness

Location can play a significant role in determining the level of access to resources that people within a community have. People living in regional and remote areas across Australia typically have lower levels of access to education, care and health services and facilities than those living in major cities and urban areas.

A clear gradient is evident of increasing disadvantage the further children live from major cities, with a large jump in the prevalence of children experiencing one or more, or two or more, developmental vulnerabilities in very remote areas (Figure 10).

Children living in very remote areas across Australia are more than twice as likely as those living in major cities to be developmentally vulnerable on one or more domain(s) - 47.0 and 21.0 per cent respectively, and three times more likely to be developmentally vulnerable on two or more domains - 31.8 per cent compared with 10.2 per cent.

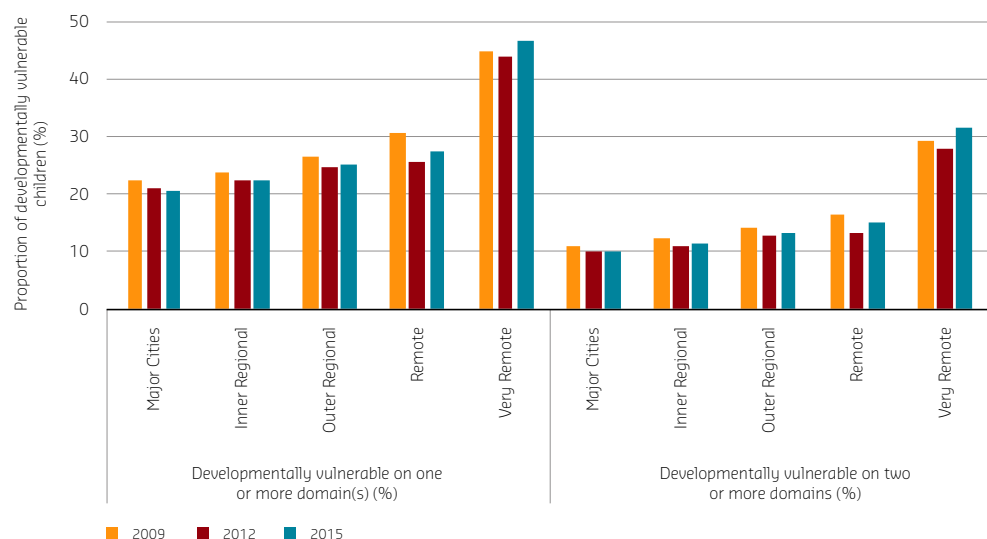
Over time, the prevalence of these vulnerabilities has reduced somewhat in most areas except for children living in very remote areas, where the situation has deteriorated slightly. The proportion of children who live in very remote areas and are developmentally vulnerable on two or more domains has increased by 2 percentage points from 2009 to 2015.

For children who were developmentally vulnerable on one or more domain(s), the gap between major cities and very remote areas has widened from 22.8 percentage points in 2009 to 23.4 in 2012 and 26.0 percentage points in 2015.

Children living in very remote areas across Australia are three times more likely to be developmentally vulnerable on two or more domains.

School based language and cognitive skills are the main developmental obstacle for children living in Northern Territory, with more than one in five children developmentally vulnerable on this domain – almost more than three times the national average of 6.5 per cent

Figure 10 Developmentally vulnerable on one and two or more domains – remoteness



Note: Remoteness is defined using the ABS' Remoteness structure. See Technical notes for further information.
Source: BANKWEST CURTIN ECONOMICS CENTRE | 2015 AEDC NATIONAL REPORT

States and territories

Differences in early childhood development are evident across Australia's states and territories, with the demographic profile of children in each state and territory playing a substantial role in the relative advantage or disadvantage children experience.

In 2015, 37.2 per cent of children in their first year of schooling in the Northern Territory were considered to be developmentally vulnerable on one or more domain(s), and 23.1 percent were vulnerable on two or more domains (Table 4). School based language and cognitive skills are the main developmental obstacle for children living in Northern Territory, with more than one in five children developmentally vulnerable on this domain – almost more than three times the national average of 6.5 per cent (Table 4 and Figure 11).

New South Wales and Victoria are below the national average across all five domains and in the proportion of children that present as developmentally vulnerable on both one or more and two or more domains. Queensland has a higher proportion of children that are developmentally vulnerable across all five domains, averaging around 2 percentage points higher than the national average. Western Australia, South Australia and Tasmania are very close to the national average when assessing developmental vulnerability of children in their first year of school.

Table 4 Proportion of children developmentally vulnerable, 2015

State	Physical	Social	Emotional	Language	Communication	Developmentally vulnerable on one or more domain(s) (%)	Developmentally vulnerable on two or more domains (%)
Australia	9.7	9.9	8.4	6.5	8.5	22.0	11.1
NSW	8.5	9.2	6.8	4.8	8.1	20.2	9.6
Vic	7.9	8.7	8.0	6.3	7.6	19.9	9.9
QLD	12.4	12.4	10.1	8.0	10.5	26.1	14.0
SA	10.8	10.8	9.7	6.8	8.2	23.5	12.2
WA	9.9	8.4	8.5	6.6	8.0	21.3	10.5
Tas	10.0	8.6	8.9	7.5	6.4	21.0	10.7
NT	15.9	18.5	15.5	21.5	16.2	37.2	23.1
ACT	10.9	9.4	8.2	5.9	7.7	22.5	10.3

Source: BANKWEST CURTIN ECONOMICS CENTRE | 2015 AEDC NATIONAL REPORT

Figure 11 Proportion of children developmentally vulnerable by domain, states and territories, 2015



Note: Scales are not presented on a consistent basis due to the much higher proportion of children in the Northern Territory developmentally vulnerable across all five domains.

Source: BANKWEST CURTIN ECONOMICS CENTRE | 2015 AEDC NATIONAL REPORT

Over time, there has been some improvement in the proportion of children that are developmentally vulnerable on one or more or two or more domains in their first year of schooling (Table 5). Almost all states and territories have seen an improvement. For Queensland and Western Australia in particular, the proportion of children developmentally vulnerable on one or more domain(s) has dropped by more than 3 percentage points between 2009 to 2015, while the numbers for other states and territories improved by around 1 percentage point or less.

Table 5 Percentage of children developmentally vulnerable, 2009, 2012 and 2015

State	Developmentally vulnerable on one or more domain(s) (%)			Developmentally vulnerable on two or more domains (%)		
	2009	2012	2015	2009	2012	2015
Australia	23.6	22.0	22.0	11.8	10.8	11.1
NSW	21.3	19.9	20.2	10.3	9.2	9.6
Vic	20.3	19.5	19.9	10.0	9.5	9.9
QLD	29.6	26.2	26.1	15.8	13.8	14.0
SA	22.8	23.7	23.5	11.5	12.2	12.2
WA	24.7	23.0	21.3	12.2	11.2	10.5
Tas	21.8	21.5	21.0	10.8	10.1	10.7
NT	38.7	35.5	37.2	23.4	20.9	23.1
ACT	22.2	22.0	22.5	10.9	9.8	10.3

Note: See Glossary and Technical Notes for further details on AEDC score cut-off points.

Source: BANKWEST CURTIN ECONOMICS CENTRE | 2015 AEDC NATIONAL REPORT

In Queensland and Western Australia the proportion of children developmentally vulnerable on one or more domains has decreased by more than 3 percentage points between 2009 and 2015.

Summary

Early childhood education has become one of the most important investments society can make towards a child's education and overall lifetime wellbeing. All Australian children in the year before commencing formal schooling should now be accessing at least 15 hours of pre-school each week as part of the National Partnership Agreement. While good progress has been made towards achieving this outcome, gaps remain and a level of inequality is apparent for children that are most in need.

The Northern Territory has the least equitable outcomes for pre-school attendance for children from disadvantaged backgrounds, with a large proportion of vulnerable children still not gaining access to at least 15 hours of quality early childhood education. The Northern Territory is also seeing a large proportion of Indigenous children enrolled but not attending pre-school in the reference week, a pattern that often leads to ongoing poor school attendance. Challenges in this jurisdiction are beyond that of other states and territories, however, this should not be a justification for leaving so many children behind in their very early years.

More work also needs to be done in particular states to increase universal pre-school access for certain equity groups, especially Indigenous children, children from a non-English speaking background and children with a disability. More work also needs to be done to ensure that progress can be measured and that information about equity groups is captured regularly and accurately. Overcoming these data limitations should be a priority of the COAG National Partnership Agreement.

The level of developmental vulnerability is concerning for a number of equity groups, and for those that are not always considered to be disadvantaged; boys, who are twice as likely to be developmentally vulnerable in their first year of schooling and typically perform worse than girls as they progress through the schooling system.

The widening gap in developmental vulnerabilities between the least and most disadvantaged children over time is concerning, especially given the investment we are making in early childhood education. More needs to be done to ensure those that are in most need of early childhood education are accessing at least the prescribed 15 hours of pre-school each week and that additional assistance to special needs groups is provided.

School

Education - Primary
and Secondary

School Education - Primary and Secondary

Primary and secondary school education continues to build on the foundation of early childhood education, providing the necessary knowledge, understanding, skills and general capabilities that are considered essential to a young person's development and future participation in the community and labour force (ACARA 2013). Primary and secondary education also plays an important role in contributing to the socialisation of children and young people, providing a sense of belonging and opportunity to socialise with their peer group outside of the family home.

Under the Australian Constitution, state and territory governments are responsible for school education and school education structures differ slightly across these jurisdictions. In 2016, all states' primary schooling extended from pre-Year 1¹ to Year 6, except for South Australia, where it continues on to Year 7. Each state and territory also has a slightly different age at which a child must begin primary school.

And although the Australian Curriculum sets out clear guidelines around the general capabilities and skill sets that should be taught, there are differences in each state and territory and between school sectors as to how education is delivered. Differences in outcomes and other performance indicators are also apparent across states and territories, primarily due to differences in population characteristics, but also in how education is delivered to these populations.

In this section, we investigate the level of student engagement, performance and outcomes for primary and secondary school students and how these differ between states and territories. We also look at the trajectory of engagement and outcomes over the primary and secondary years for separate equity groups.

¹ Pre-Year 1 is known as kindergarten in NSW and the ACT; Preparatory in Vic, Qld and Tas; Reception in SA; Pre-primary in WA; Transition in NT and Foundation in the Australian Curriculum. ABS Cat No. 4221.0

Student Engagement

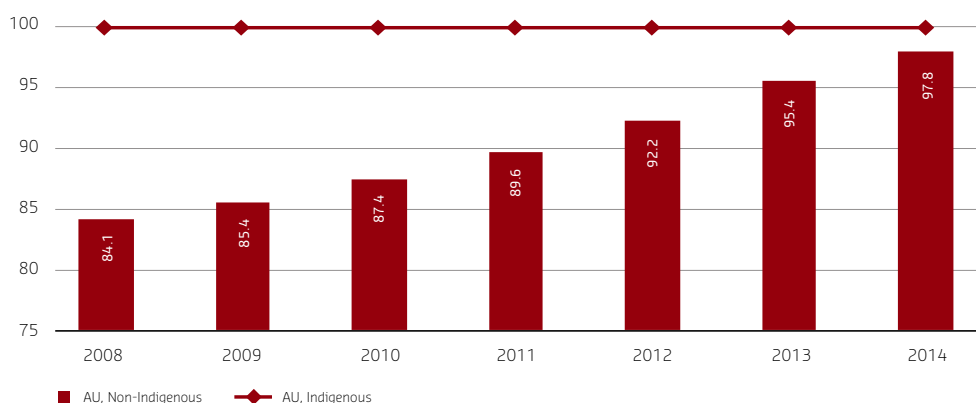
Student engagement is a critical element used to achieve, maintain and improve educational outcomes and helps close the achievement gap for disadvantaged students (Marzano 2013; Patterson 2006). Student engagement encompasses the degree to which young people are participating and thriving within a school environment, with engaged students demonstrating typical behaviours and attitudes such as motivation, enthusiasm and classroom attention (Akey 2006).

Engagement can be measured a number of ways - at its rawest form through student enrolments, attendance and retention rates, but ideally through more nuanced indicators. Here, we look to these raw indicators as proxies for school engagement, constrained by national data collections, but noting that these indicators often exhibit a strong relationship to student performance and outcomes.

Turning to school enrolment rates, Indigenous Australian children have typically had lower engagement levels with formal schooling compared to non-Indigenous children over time (Figure 12). However, in recent years, this has improved substantially, with the proportion of Indigenous children aged 6-15 years enrolled in schooling increasing from 84.1 percent in 2008 to 97.8 percent in 2014.

School enrolment rates for Indigenous children have been increasing over time.

Figure 12 Proportion of children aged 6 to 15 years enrolled in school, 2008-2014



Note: Breakdown by Indigenous status was not available for later periods. Proportions are determined using a combination of student enrolment and the estimated residential population. Enumeration of Aboriginal and Torres Strait Islanders is often challenging and results should be treated as estimates only.

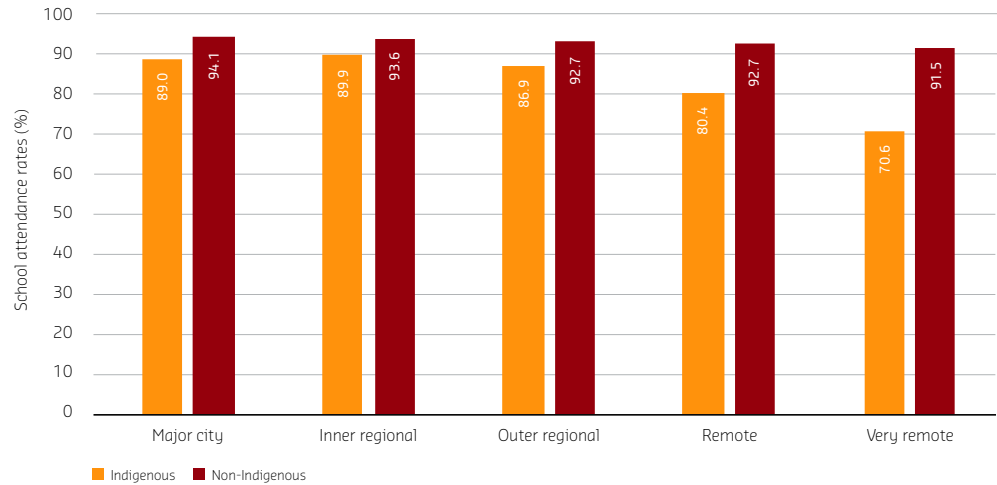
Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2016, Table 4A.37

Attendance

Figure 13 shows the attendance rates of primary school students from Years 1 to 6 by Indigenous status and remoteness. Across all areas of Australia, attendance rates are higher for non-Indigenous children when compared to Indigenous children, with the gap widening the farther children live from major urban areas. Indigenous children living in major cities have reasonably high attendance rates at primary school (89%), but this deteriorates rapidly to just over 70 per cent in very remote areas. Attendance rates for non-Indigenous children also fall the farther children live from major urban areas but at a lower rate, from 94.1 per cent in major cities to 91.5 per cent in very remote areas.

Student attendance decreases the further away children live from major cities.

Figure 13 Primary school attendance rates, Years 1 to 6, by Indigenous status and remoteness, 2016

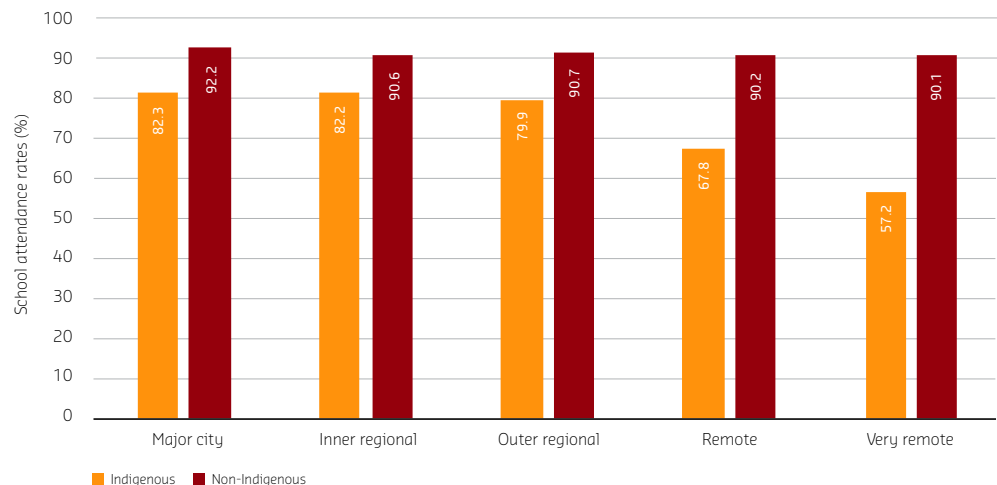


Note: Attendance rates are the number of actual full-time equivalent student-days attended by full-time students in Years 1 to 6 as a percentage of the total number of possible student-days attended over the period.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017, Table 4A.37

Attendance rates are lower for secondary school-aged children compared to primary school-aged, with a wider gap between Indigenous and non-Indigenous children (Figure 14). This gap is particularly apparent for secondary school children living in remote and very remote areas of Australia. School attendance rates from Years 7 to 10 average 90 per cent for non-Indigenous young people in remote and very remote areas, but decreases to 67.8 and 57.2 per cent, respectively for Indigenous youth.

Secondary school attendance rates for Indigenous students in very remote areas are 20 percentage points lower than Indigenous students living in major cities.

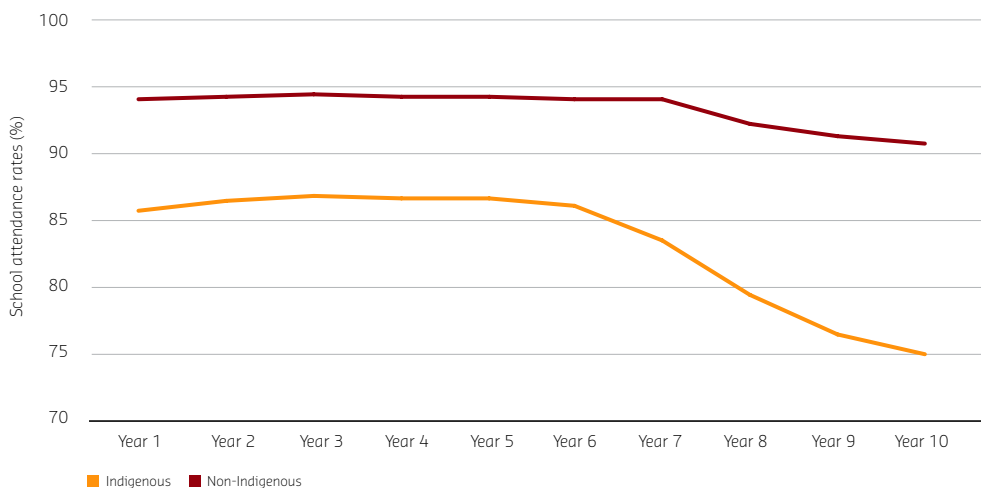
Figure 14 Secondary school attendance rates, Years 7 to 10, by Indigenous status and remoteness, 2016



Note: Attendance rates are the number of actual full-time equivalent student-days attended by full-time students in Years 1 to 6 as a percentage of the total number of possible student-days attended over the period.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017, Table 4A.37

The gap in student attendance rates between Indigenous and non-Indigenous students remains constant throughout primary school, averaging around 8 percentage points from Years 1 to 6 (Figure 15). However, this changes significantly once young people enter secondary schooling, with a rapid deterioration in Indigenous attendance rates and a widening gap between Indigenous and non-Indigenous student attendance, reaching 15 percentage points in Year 10. The transition from primary school to secondary school is often challenging for young people, but clearly more so for Indigenous students.

Figure 15 Student attendance rates, Years 1 to 10, by Indigenous status, 2016



Note: Attendance rates are the number of actual full-time equivalent student-days attended by full-time students in Years 1 to 6 as a percentage of the total number of possible student-days attended over the period.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017, Table 4A.37

Among Australia's states and territories, the gap between Indigenous and non-Indigenous student attendance rates varies (Table 6). The Northern Territory has the widest gap in attendance rates between Indigenous and non-Indigenous students in both primary and secondary school – 20.2 and 28.4 percentage points respectively. This is followed by Western Australia, which has an attendance rate gap of 13 percentage points for children in Years 1 to 6, but this increases to 22.2 percentage points for students in Years 7 to 10.

NSW and Victoria have both high attendance rates and a smaller gap between Indigenous and non-Indigenous children, noting that there are limitations with the NSW data collection. Queensland also records lower gaps between Indigenous and non-Indigenous children when assessing student attendance rates, and relatively higher overall attendance rates for both groups.

Tasmania is the best performing state, with the lowest gap between Indigenous and non-Indigenous students and overall high attendance rates. Student attendance rates for primary school children in Tasmania are over 90 per cent for both Indigenous and non-Indigenous students, with a gap of only 2.7 percentage points. For high-school, attendance rates are 83.1 and 89.7 per cent for Indigenous and non-Indigenous children respectively, with a gap of 6.6 percentage points.

The Northern Territory has the widest gap in attendance rates between Indigenous and non-Indigenous students in both primary and secondary school – 20.2 and 28.4 percentage points respectively.

Table 6 Student attendance rates, Years 1 to 10, by Indigenous status and state/territory, 2016

State	Years 1-6 (%)				Years 7-10 (%)			
	Indigenous	Non-Indigenous	Difference (percentage point)	Rank	Indigenous	Non-Indigenous	Difference (percentage point)	Rank
NSW	90.3	94.3	4.0	7	81.6	91.7	10.1	4
Vic	89.6	94.0	4.4	6	84.2	92.5	8.3	7
Qld	87.2	93.7	6.5	4	82.5	91.8	9.3	6
WA	80.9	93.9	13.0	2	69.2	91.4	22.2	2
SA	83.0	93.1	10.1	3	78.0	91.4	13.4	3
Tas	91.0	93.7	2.7	8	83.1	89.7	6.6	8
ACT	87.8	93.8	6.0	5	81.4	90.8	9.4	5
NT	72.5	92.7	20.2	1	61.7	90.1	28.4	1
Aust	86.2	93.9	7.7		78.6	91.8	13.2	

Note: Attendance rates are the number of actual full-time equivalent student-days attended by full-time students in Years 1 to 6 as a percentage of the total number of possible student-days attended over the period.

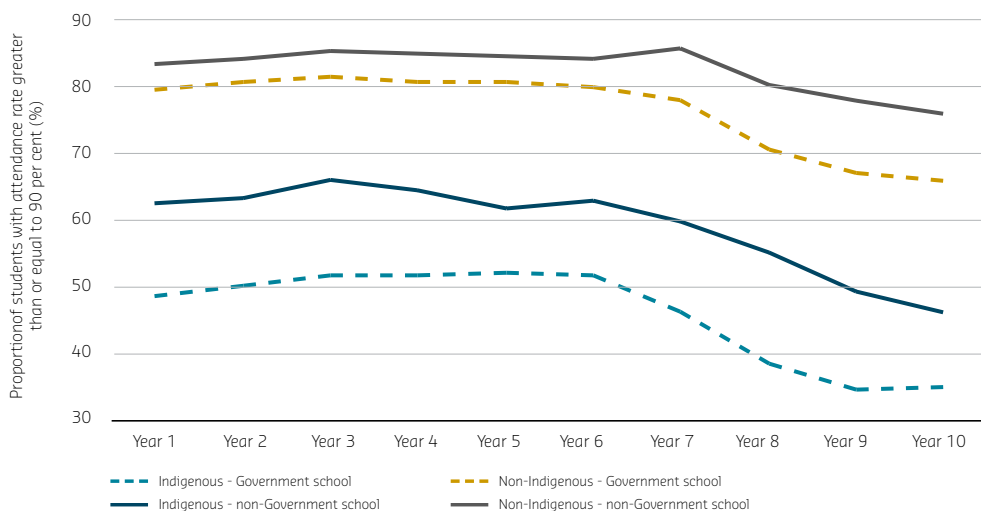
Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017, Table 4A.37

Missing sizeable numbers of school days and being disengaged while at school leads to poorer learning outcomes for young people and places them further below learning benchmarks and their peers. Attendance rates of 90 per cent or more are considered to be a good standard, giving students a better chance of being able to meet and exceed minimum learning criteria in any given year level.

Figure 16 shows the proportion of students with greater or equal to 90 per cent attendance rate by school sector and Indigenous status across school levels from Years 1 to 10, as reported by the Productivity Commission. Of interest is that the overall attendance rate measure shown in Figure 4 and Table 1 mask the wider gap in student engagement levels between Indigenous and non-Indigenous students.

As is the case with the broad measure of attendance rates, student attendance rates above 90 per cent remain relatively constant throughout primary school, but begin to decrease rapidly in secondary school levels. The rate of this fall is the slowest among non-Indigenous students attending non-government schools.

Government schools have the lowest proportion of Indigenous students with attendance rates of 90 per cent or more across all year levels. Around half of Indigenous students attending a government primary school have an attendance rate of 90 per cent or more, compared to 80 per cent of non-Indigenous students.

Figure 16 Student attendance rate greater than or equal to 90 per cent, by school sector and Indigenous status, 2016

Note: Student attendance level is the proportion of full-time students in Years 1-10 whose attendance rate is greater than or equal to 90 per cent over the period
Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017, Table 4A.38

Around half of Indigenous students attending a government primary school have an attendance rate of 90% or more, compared to 80 per cent of non-Indigenous students.

The gap between Indigenous and non-Indigenous children is much wider in government schools when compared to non-government schools, averaging around 30 percentage points across all year levels in government schools and 20 percentage points in non-government schools (Table 7). An exception exists in Year 10, where the gap between Indigenous and non-Indigenous student attendance rates in non-government schools widens to the same as that observed in government schools – both reaching around 30 percentage points.

Table 7 Student attendance rate greater than or equal to 90 per cent: by school sector and Indigenous status, 2016

School level	Government			Non-government			Difference non-government and government (ppt)	
	Indigenous (%)	Non-Indigenous (%)	Difference (ppt)	Indigenous (%)	Non-Indigenous (%)	Difference (ppt)	Indigenous (%)	Non-Indigenous (%)
Year 1	48.3	79.5	31.2	62.4	83.4	21.0	14.1	3.9
Year 2	49.9	80.6	30.7	63.2	84.3	21.1	13.3	3.7
Year 3	51.5	81.5	30.0	65.7	85.2	19.5	14.2	3.7
Year 4	51.3	80.6	29.3	64.2	84.9	20.7	12.9	4.3
Year 5	51.8	80.6	28.8	61.7	84.7	23.0	9.9	4.1
Year 6	51.5	79.9	28.4	62.7	84.0	21.3	11.2	4.1
Year 7	46.0	77.9	31.9	59.4	85.6	26.2	13.4	7.7
Year 8	38.2	70.6	32.4	54.8	80.2	25.4	16.6	9.6
Year 9	34.2	67.0	32.8	49.1	77.9	28.8	14.9	10.9
Year 10	34.6	65.8	31.2	45.8	75.8	30.0	11.2	10.0

Note: Student attendance level is the proportion of full-time students in Years 1-10 whose attendance rate is greater than or equal to 90 per cent over the period.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017, Table 4A.38

Student Retention

Young people are now expected to continue on with education until the age of 17.

At the beginning of 2010, a National Youth Participation Requirement was introduced², which required all young people to participate in schooling until they complete Year 10. After the completion of Year 10, all young people are then required to participate in full-time education, training, or employment or a combination, until they turn 17 years of age (ABS 2015).

To enforce this policy, eligibility to government payments and benefits was restricted. Young people under the age of 21 are now ineligible to access youth allowance if they have not completed Year 12 and are not in education or training. Furthermore, their parents are not eligible to receive Family Tax Benefit Part A if these criteria are not met (DET 2017).

The apparent retention rate measures the proportion of full-time school students who have stayed at school, for a designated year and grade of education. Table 8 lists the apparent retention rates from Year 7/8 to Year 12 between 2010 and 2016. As an example of how to interpret the data in Table 8, the apparent retention rates from Year 7/8 to Year 12 in 2016 measures the proportion of Year 7/8 students in 2011/2012 that remained in the schooling system until Year 12 in 2016.

Nationally, the apparent retention rate from the start of high school to year 12 is 84.3 per cent, increasing by 6.3 percentage points over the period from 2010 to 2016.

Table 8 Apparent retention rates, Year 7/8 to Year 12: by state/territory, 2010 to 2016

State	2010	2011	2012	2013	2014	2015	2016	Average	Rank	Percentage Point Change between 2010 and 2016	Rank
	%	%	%	%	%	%	%	%			
NSW	72.5	74.6	75.0	76.7	78.1	78.2	78.4	76.2	6	5.9	4
Vic	81.1	82.0	82.2	83.7	85.2	86.4	87.9	84.1	4	6.8	2
QLD	82.5	83.0	83.7	85.2	87.1	88.4	88.6	85.5	3	6.1	3
WA	78.3	78.4	79.5	82.2	89.3	82.8	80.3	81.5	5	2.0	7
SA	81.9	86.3	88.8	90.6	93.0	95.7	97.5	90.5	2	15.6	1
Tas	71.0	69.8	67.6	68.7	68.4	71.7	70.4	69.7	7	-0.6	8
ACT	90.8	89.4	89.8	91.6	94.6	96.6	94.0	92.4	1	3.2	6
NT	53.0	55.3	55.6	55.8	59.6	53.7	56.7	55.7	8	3.7	5
Australia	78.0	79.3	81.6	83.6	83.6	84.0	84.3	82.1		6.3	

Note: The term "apparent" is used because the retention rates are not the actual rates that would result from the direct measurement of each individual student (ABS, 2015).

Source: BANKWEST CURTIN ECONOMICS CENTRE | Australian Bureau of Statistics, Cat. No. 4221.0, Schools, Australia, 2016.

The ACT has the highest retention rate for students continuing through to Year 12 – 92.4%.

Nationally, the apparent retention rate from the start of high school to Year 12 is 84.3 per cent, increasing by 6.3 percentage points over the period from 2010 to 2016 (Table 8). The ACT has the highest average apparent retention rate (92.4%) for Year 7/8 to Year 12 between 2010 and 2016. In contrast, the Northern Territory had the lowest average apparent retention rate (55.7%) for Year 7/8 to Year 12.

² The National Youth Participation Requirement was effected through relevant state and territory legislation.

Western Australia has an average apparent retention rate of 81.5 per cent, ranking fifth amongst the states and territories. Between 2010 and 2016, there was an improvement in the Year 7/8 to Year 12 apparent retention rates for most states and territories, except for Tasmania which decreased by 0.6 percentage points. The largest improvement was in South Australia, where it increased from 81.9 per cent in 2010 to 97.5 per cent in 2016, making it the highest performer in 2016. Western Australia had a smallest improvement, increasing by only 2 percentage points across the same period.

Indigenous Status

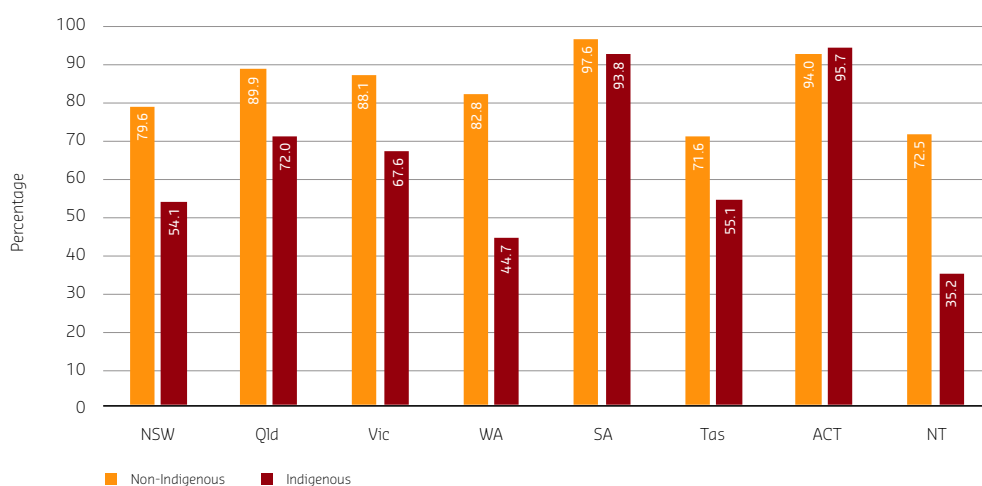
In all states and territories in 2016, except for the ACT, the apparent retention rate for Year 7/8 to Year 12 for Indigenous students was below that of non-Indigenous students (Figure 17).

The Northern Territory had the lowest Indigenous apparent retention rate, with only 35.2 per cent of Indigenous students who were in Year 7/8 in 2011/2012 remaining in the school system in Year 12 in 2016. Western Australia had the second lowest Indigenous apparent retention rate from Year 7/8 to Year 12, with only 44.7 per cent of Indigenous students remaining in Year 12 in 2016. The gap in school retention between Indigenous and non-Indigenous students is also the widest in these two jurisdictions.

The states and territories with the best Indigenous apparent retention rates were the Australian Capital Territory and South Australia, where the Indigenous apparent retention rates for Year 7/8 to Year 12 were 95.7 per cent and 93.8 per cent, respectively.

Only 35% of Indigenous students in the Northern Territory continue through to Year 12.

Figure 17 Apparent retention rates, Year 7/8 to Year 12: by Indigenous Status and state/territory, 2016



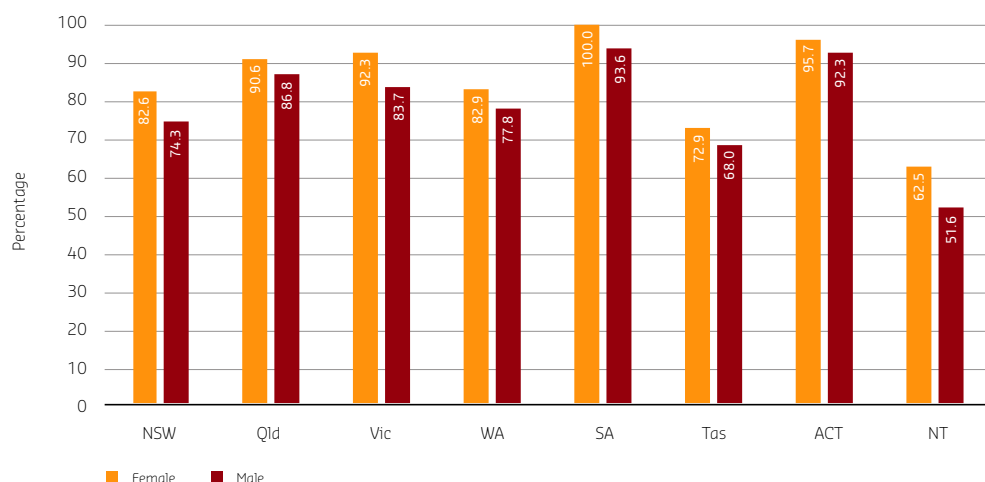
Note: The 2013 data point for Western Australia has not been included as it is considered to be an anomalous value.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from ABS Cat No.4240.0 Preschool Education

South Australia have achieved an apparent retention rate of 100% for female students and 93.6% for males.

Gender

Across all states and territories, male students have lower retention rates than females from Years 7/8 through to Year 12 (Figure 18). On average, the apparent retention rate for boys is 6.4 percentage points below that of their female peers. South Australia and the ACT have the highest retention rates to Year 12 for both female and male students. South Australia has achieved an apparent retention rate of 100 per cent for female students and 93.6 per cent for males. The lowest apparent retention rate of both female and male students was in the Northern Territory, where only 62.5 per cent of female students and 51.6 per cent of male students remained in the schooling system up to Year 12.

Figure 18 Apparent retention rates, Year 7/8 to Year 12, All Affiliations: by gender and states, 2016



Note: The term "apparent" is used because the retention rates are not the actual rates that would result from the direct measurement of each individual student (ABS, 2015).

Source: BANKWEST CURTIN ECONOMICS CENTRE | Australian Bureau of Statistics, Cat. No. 4221.0, Schools, Australia, 2016.

Student Performance

In December 2008, the Ministerial Council on Education, Employment, Training and Youth Affairs released the Melbourne Declaration on Educational Goals for Young Australians. This Declaration set out two broad goals for education in Australia for the period 2009 to 2018. One is for Australian schooling to promote equity and excellence. The other is that all young Australians become successful learners, confident and creative individuals, and active and informed citizens. Part of these goals include ensuring the learning outcomes of Indigenous students improve to match other students and that socio-economic disadvantage ceases to be a significant determinant of educational outcomes (MCEETYA 2008).

To measure the progress towards the Melbourne Declaration on Educational Goals for Young Australians, a measurement framework for schooling in Australia was established. An important component of this measurement framework is the National Assessment Program (NAP), with assessments within NAP comprising: literacy and numeracy tests (NAPLAN) (ACARA 2015).

NAPLAN was rolled out nationally in 2008 and is conducted annually for children in Years 3, 5, 7 and 9. It tests skills in reading, writing, spelling, grammar and punctuation, and numeracy. The assessments are undertaken every year in the second full week in May.

The introduction of NAPLAN has attracted mixed responses from parents, teachers and the policy and research communities. Criticism of the national testing includes challenges in comparing changes over time (Ward 2012; Wu & Hornsby 2012); additional pressure placed on children and young people (Canvass Report 2012); an over-emphasis in the classroom on NAPLAN preparation; and the limitations of the tests to assess broader learning outcomes and skillsets.

The publication of the results through the MySchools website in 2010 has also led to a behavioural response from current and prospective parents, who are using this information to select schools for their children based largely upon NAPLAN rankings. Providing parents with information to make informed decisions on their children's schooling was one intention of the site.

On the other hand, NAPLAN provides Australia's first comprehensive testing system by which to compare and target schools, communities and individual children that may need additional resources and attention.

While noting the challenges in relying on a single indicator to assess school performance, in this section we compare primary and secondary school education outcomes across equity groups using NAPLAN results for students in Year 3, 5, 7 and 9.

NAPLAN Participation

Since NAPLAN implementation, participation rates have been declining over time, especially for certain equity groups and particular school year levels. As an instrument intended to determine the learning progress of individuals and flag learning difficulties, this can be problematic.

While NAPLAN is a national assessment program that requires all young people in Years 3, 5, 7 and 9 to participate, there are a number of ways in which students can opt out – either formally through an exemption or informally through absenteeism

Participation in NAPLAN decreases as students progress to high-school.

or withdrawing from the test (see Technical Notes for further information). ACARA deals with non-participation through assessing exempt children as not meeting the national minimum standard and imputing values for those that were absent or withdrew via their parents or themselves.

Further, participation rates in and of themselves can aid in identifying students that are struggling, especially if this is teamed with information about school absenteeism and other learning difficulties observed by teachers.

Comparing Indigenous and non-Indigenous children, a pattern of declining participation in NAPLAN assessments as year levels increase can be seen (Figure 19). This trend is stronger for Indigenous young people, with wider variation among states and territories than that observed for non-Indigenous students.

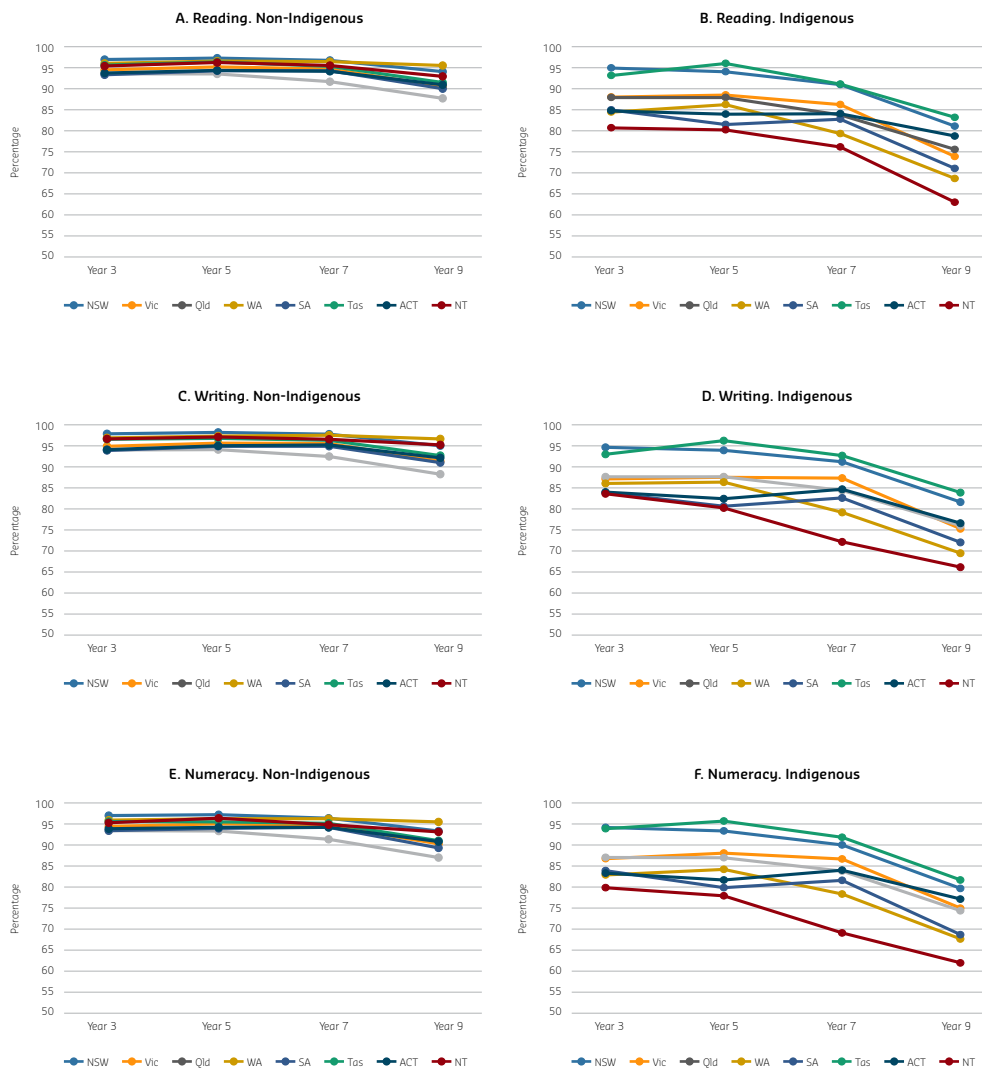
Participation rates for non-Indigenous children across reading, writing and numeracy hover between 90 and 95 per cent for most states and territories and across all school levels. NSW is the top performer when it comes to NAPLAN participation, averaging above or near 95 per cent for most assessments and across most year levels. Queensland experiences the steepest decline in participation rates for non-Indigenous students across the year levels, decreasing from around 95 per cent for Year 3 students to 88 per cent for Year 9 students.

As with school attendance rates, NAPLAN participation rates for Indigenous students remain relatively stable in the primary school years, but decrease dramatically once in secondary school. These rates of decline are more prominent for Western Australia and the Northern Territory, with similar patterns across the reading, writing and numeracy assessments. For example, NAPLAN participation rates for Indigenous students in Western Australia decrease by around 17.8 percentage points between Years 5 and 9 in reading assessments. This compares to a national average of 13.8 percentage points.

Tasmania and NSW consistently have the highest NAPLAN participation rates among Indigenous students, with participation levels similar to the non-Indigenous population throughout primary school. While they remain the top performing states on this indicator, these jurisdictions are still met with a rapid decrease in Indigenous NAPLAN participation rates in secondary schooling.

The ACT has the most stable NAPLAN participation rate across the schooling years, with slight increase in participation from Years 5 to 7, followed by a small decline in Year 9.

Tasmania and NSW consistently have the highest NAPLAN participation rates among Indigenous students, with participation levels similar to the non-Indigenous population throughout primary school.

Figure 19 Participation rates by school level, Indigenous status and state/territory, 2016

Note: Participation rates are calculated on the basis of all assessed and exempt students as a percentage of the total number of students reported by schools, which includes those absent and withdrawn. See technical notes for further information about these categories.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017, Table 4A.47

Queensland has seen the biggest improvement in students achieving at or above the national minimum standard in reading.

Reading

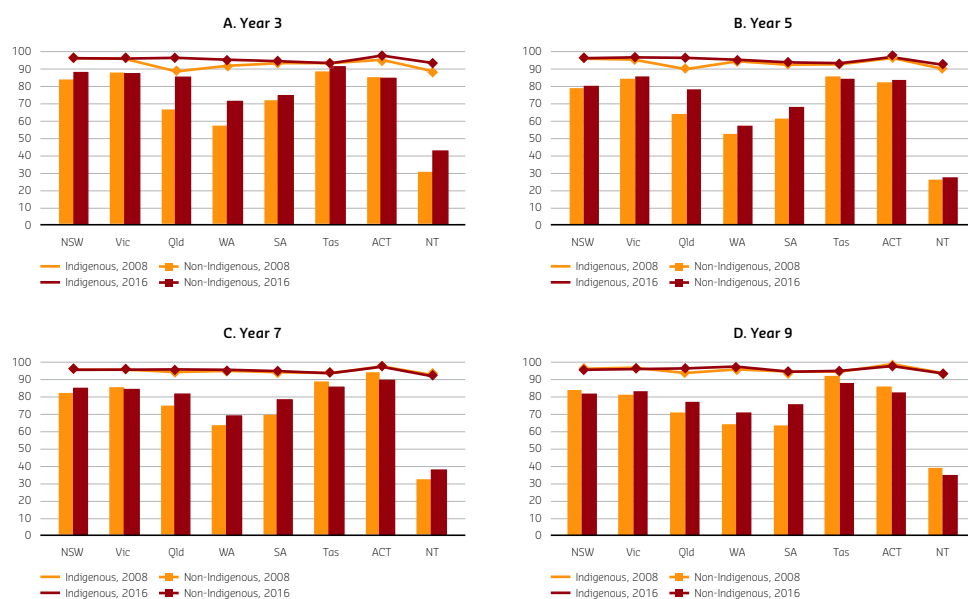
For NAPLAN reading assessments, a higher proportion of non-Indigenous students are performing at or above the national minimum standing than Indigenous students across all year levels (Figure 20).

The proportion of students at or above national minimum standards in reading has been increasing over time across almost all states and territories and year levels for both Indigenous and non-Indigenous students.

Queensland, Western Australia and the Northern Territory have seen substantial improvements over the eight years between 2008 and 2016 for both non-Indigenous and Indigenous students. This is particularly evident for students in Year 3, where the proportion of students meeting the minimum standard in reading increased by 19 percentage points for non-Indigenous children and 14.3 percentage points for Indigenous children in Queensland. Queensland has also seen strong gains in the proportion of children accessing 15+ hours of pre-school each week in the year before schooling, which is likely to be contributing to the improvements we can see for this State.

Tasmania and the ACT typically have the smallest gap between Indigenous and non-Indigenous student performance in reading, particularly among Year 7 students. The ACT is also usually ranked first among states and territories when assessing the proportion of students meeting or exceeding the national minimum standard.

Figure 20 Proportion of students who achieved at or above the national minimum standard for NAPLAN reading: by school level, Indigenous status and state/territory, 2008 and 2016



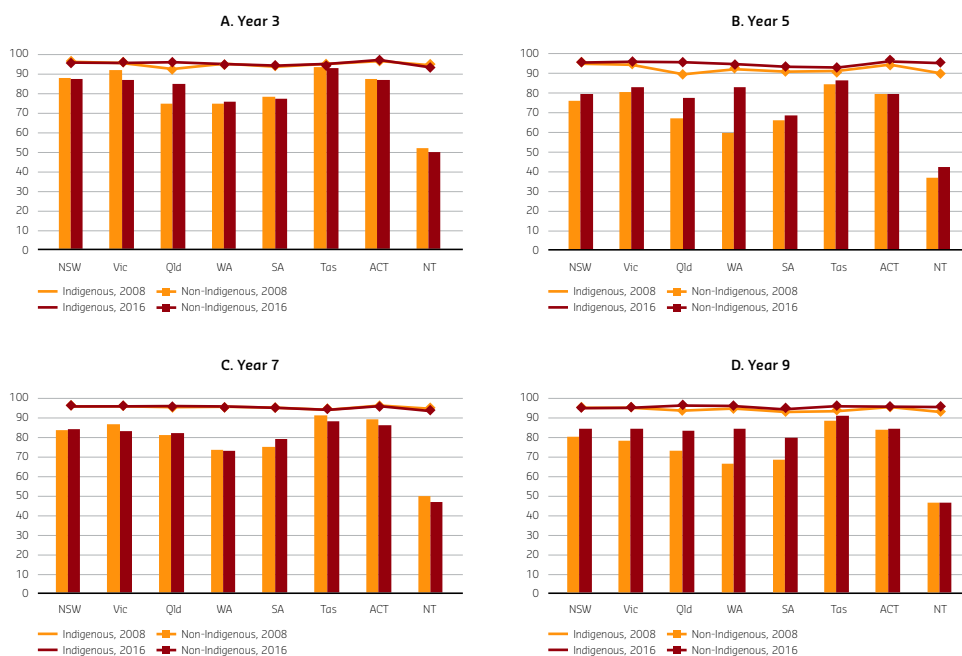
Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017

Numeracy

Turning to numeracy performance, a similar pattern among states and territories over time can be seen (Figure 21). Queensland made strong ground in the proportion of students achieving at or above the national minimum standard in numeracy between 2008 and 2016, for both Indigenous and non-Indigenous students. This improvement is particularly noticeable for children in Year 3, with the impact of universal pre-school again likely to be contributing to these gains.

Year 5 and Year 9 students have also progressed well, with a greater proportion of students meeting or achieving above national minimum standards in numeracy than was the case in 2008. This pattern of improvement exists for every state and territory and both Indigenous and non-Indigenous students. The proportion of West Australian Indigenous students in Year 5 achieving at or above the national minimum standard in numeracy has increased by 24.7 percentage points over this time frame, and for Queensland by 10.7 percentage points. The Northern Territory, while still well below the national average has also seen an improvement between the two cohorts. For Year 9 students, all states and territories have improved, but particularly Western Australia, Queensland and South Australia. While still lagging behind the national average, these gains are an encouraging sign that the investment in education is having an impact, but must be interpreted in conjunction with school retention rates.

Figure 21 Proportion of students who achieved at or above the national minimum standard for NAPLAN numeracy: by school level, Indigenous status and state/territory, 2008 and 2016



Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017

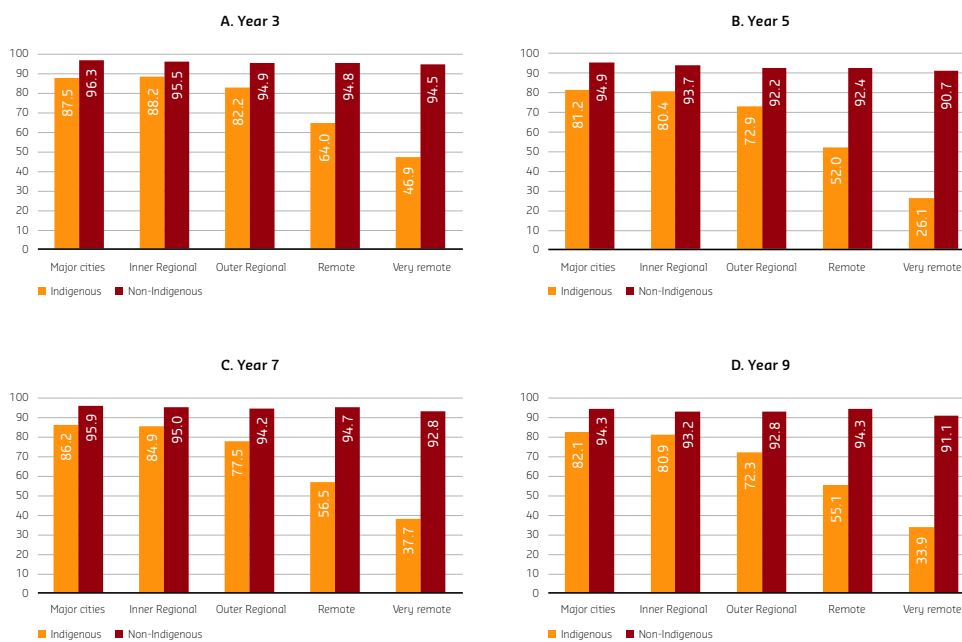
However, for Year 7 students the results are mixed. Victoria, the ACT and NT have all seen a slight decline in the proportion of both Indigenous and non-Indigenous students reaching at or above the national minimum in numeracy. Whereas Queensland and South Australia have seen modest gains for this year level. NSW has seen a slight improvement for Indigenous Year 9 students, with more than 85 per cent achieving at or above the national minimum standard in numeracy and very little change for non-Indigenous students, with more than 96 per cent of students reaching at or above an adequate level in numeracy.

Remoteness

The geography of Australia is such that most of the population is concentrated in the major capital cities located on the Eastern seaboard, and relatively fewer people live in regional and remote areas. Living farther from major urban areas will typically mean having limited access to services and resources, including those that can aid in improving educational attainment.

The gap in NAPLAN performance between Indigenous and non-Indigenous students is about 10 percentage points among those living in major cities in Australia. This widens substantially as the location becomes more remote, suggesting that geography is one of the main drivers of poorer Indigenous education outcomes (Figure 22). However, the fact that outcomes for non-Indigenous children do not fall at similar rates indicates that it is not remoteness per se that causes lower outcomes. Rather, it is social and cultural contexts and other coincident factors associated with this geography that affect outcomes for Indigenous children. Less than 50 per cent of Indigenous students living in very remote regions have achieved the national minimum standard for reading in Year 3. This gap is even wider for Year 5 students, with just over 1 in 4 Indigenous students living in very remote areas reaching the national minimum standard in reading. Only 37.7 per cent of Indigenous students in Year 7 living in very remote areas have reached the national minimum level in NAPLAN in reading, and 39.9 per cent for those in Year 9.

Figure 22 Proportion of students who achieved at or above the national minimum standard for NAPLAN reading: by Indigenous status and remoteness, 2016



Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017

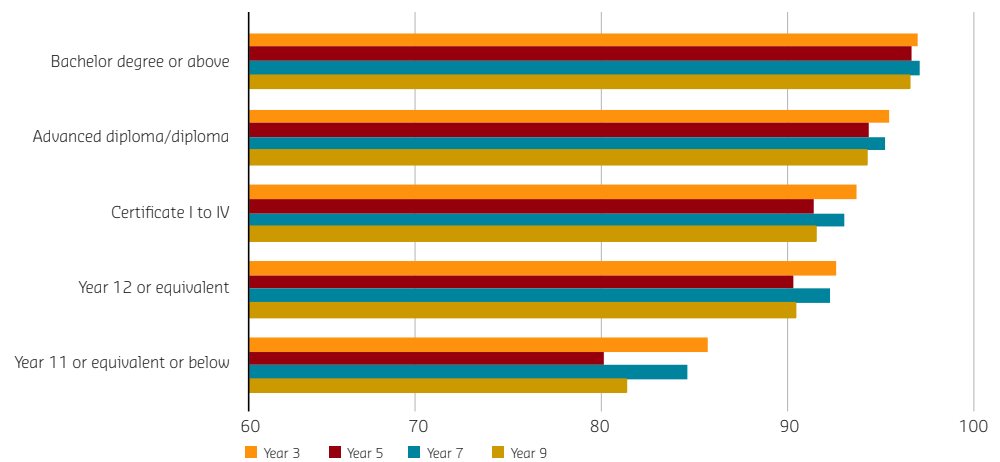
Socio-economic status

The relationship between socio-economic status and child outcomes is a well-established one. Children with a lower socio-economic background are less likely to go on to higher education, have poorer health and labour market outcomes and will typically struggle more at school than those from a higher socio-economic background.

Socio-economic status can be measured in a number ways, but a common method is through the highest educational attainment and/or occupation status of the parent/s within a family (see Cassells et al. 2011 for further discussion). This is typically seen as a reliable measures of the level of resources a family, and consequently a child, will have (d'Addido 2007).

Figure 23 and Figure 24 offer strong evidence of the relationship between socio-economic status (as measured by parental education and occupation) and student educational performance. Children with parents that have post-school qualifications are far more likely to reach or exceed the national minimum standard for reading assessments, with this pattern extending from Years 3 to Year 9. As a contrast, 98 per cent of children in Year 3, whose parent achieved a bachelor degree or higher were reading at or above the national minimum standard, compared to 86 per cent of children whose parents were educated to Year 11 or below.

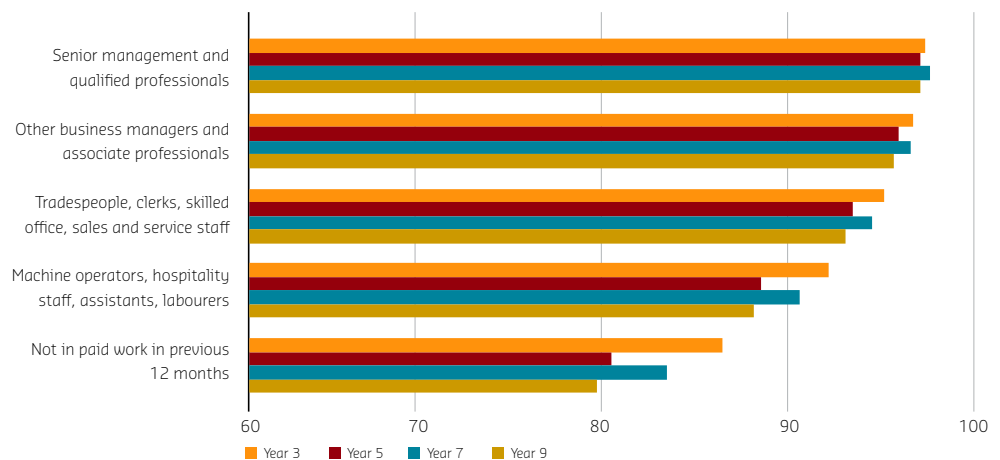
Figure 23 Proportion of students who achieved at or above the national minimum standard for NAPLAN reading, by parental education, 2016



Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017

The same social gradient can be seen when comparing parental occupation levels with student reading outcomes. Children of senior managers or qualified professionals are more likely to achieve better literacy outcomes in primary and secondary school than those whose parents were not in paid work in the previous 12 months. For example, more than 98 per cent of children in Year 9 with a parent working as a senior manager or qualified professional achieved or exceeded the national minimum standard in reading, compared to only 80 per cent of children whose parent was not in any paid employment in the previous 12 months.

Figure 24 Proportion of students who achieved at or above the national minimum standard for NAPLAN reading, by parental occupation,



Source: BANKWEST CURTIN ECONOMICS CENTRE | Productivity Commission ROGS 2017

Summary

Building on the foundation of early childhood, primary and secondary school education are the building blocks to educational attainment and further opportunity. Access to primary school and lower secondary school has increased and is now close to universal in Australia. Across the country, 99.7 per cent of 15 year olds were estimated to be participating in school in 2015, up from 94.5 per cent in 2006. Participation in school to this age is close to 100 per cent in all jurisdictions, with the exception of the Northern Territory, where it stood at 84.3 per cent. Retention to Year 12 stands at 81.8 per cent, and has also been increasing. Among youth of school-leaving age, 75 per cent now complete a Year 12 Certificate or equivalent level qualification, up by 3 percentage points since 2011.

Thus more young Australians are attending school and are staying in school longer. It is important to note, however, that participation, attendance and retention are not direct measures of engagement, only proxy indicators. Consultations with key stakeholders from the school sector made clear that it is genuine engagement of students in their schooling that is critical to promoting learning and a complete education, an observation confirmed in existing literature. Notwithstanding the progress achieved in extending school participation and retention there is clear evidence that the same level of engagement is not being achieved for Indigenous Australians and, to a lesser extent, young people from lower socio-economic backgrounds and those living in regional and remote Australia.

Lower school engagement and outcomes for these groups will largely reflect factors emanating from outside of the school system, and call for an integrated response incorporating other government services and the community sector. Simply increasing school funding to those students and areas is not a panacea, and the geographical analyses presented in this report shows that funding already largely follows a needs based allocation. However, more needs to be done to make schooling relevant, culturally appropriate and engaging to those groups. Standardised testing is important for identifying needs of subgroups within the student population and for continuous improvement of the schools system more generally, and indeed we draw heavily on NAPLAN results in this report. At the same time, caution must be exercised in how standardised testing is applied and how results are used. Feedback from educators indicate that NAPLAN testing can bring with it an emphasis on narrow academic outcomes to the detriment of broader educational goals and contribute to disengagement of some students.

It is difficult to assess whether some state or territory school systems perform better than others, given their different social and geographical contexts. The Australian Capital Territory stands out as the jurisdiction achieving uniformly high results on these indicators. Of course, the ACT is characterised by a population of high socio-economic status and no remote areas. This is in contrast with the Northern Territory, with a high proportion of remote communities and substantial Indigenous share of the population, and which displays the lowest rank across all indicators. Victoria and NSW have the highest attendance rates, and follow behind the ACT in terms of students' NAPLAN results. It is clear that rankings on NAPLAN scores are quite persistent across grades: states that perform well in testing tend to do so right through from Year 3 to Year 9. Despite relatively low rankings in terms of student's average NAPLAN scores, South Australia performs particularly highly in terms of retention to Year 12 and the proportion of students attaining a year 12 certificate or equivalent qualification.

Post-School

Education and Training

Post-School Education and Training

Higher education – consisting of university degrees and post-graduate research degrees – is seen by many as the pinnacle in education. This is formally recognised in the Australian Qualifications Framework, which defines ten levels of qualifications in ascending order of the complexity, depth of knowledge and autonomy required of graduates to achieve that level of qualification. Level 7 corresponds to a bachelor degree and level 10 to a doctorate degree, with honours, masters, graduate certificates and graduate diplomas lying in between. Traditional apprenticeships equate to level 3 or 4 on the AQF, and more advanced technical training in the form of diplomas and advanced diplomas to levels 5 and 6 (AQF Council 2013).

In assessing post-school educational opportunity and advantage, this report focusses mainly upon access to and outcomes in higher education. This is because higher education, given its status and more restricted entry, provides the starkest indicator of relative educational advantage, as well as the widely accepted belief that the changing nature of economic production is generating an ever greater imperative upon such higher level skills and competencies to promote economic growth. This is not to downplay the critical contribution of the vocational education and training sector to the economy and in generating opportunity for people outside of - and increasingly in conjunction with - the formal school and higher education sectors. However, funding and delivery arrangements are complex, vary substantially across states and are currently facing substantial regulatory reforms in a number of jurisdictions. Key indicators of access to VET and their implications for education disadvantage are provided, but a comprehensive assessment of the diverse VET sector is beyond the scope of this report.

Higher Education

Higher education in Australia is delivered primarily, though not exclusively, through universities. Currently, there are 167 higher education providers registered with the Tertiary Education Quality and Standards Agency. These are commonly classified into the following broad groups (Dockery, Koshy & Seymour 2016, <http://www.teqsa.gov.au/national-register>):

- The 'Table A' providers – the 38 major universities (37 public universities and the Australian Catholic University);
- 'Table B' providers – four smaller private institutions (Bond University, The University of Notre Dame Australia, The University of Divinity (MCD) and Torrens University Australia);
- 'Table C' providers – two private providers with campuses in Adelaide: Carnegie Mellon University and University College London; and
- 'Other Providers' – 123 non-university providers who have an enrolling capacity in higher education.

In 2015, the most recent year for which full annual data are available, just over 1 million domestic students were enrolled with a higher education provider, along with around 360,000 international students. The 38 major universities accounted for 93.1% of domestic enrolments in 2015, and almost 90% of students studied at a metropolitan provider (DET 2015).

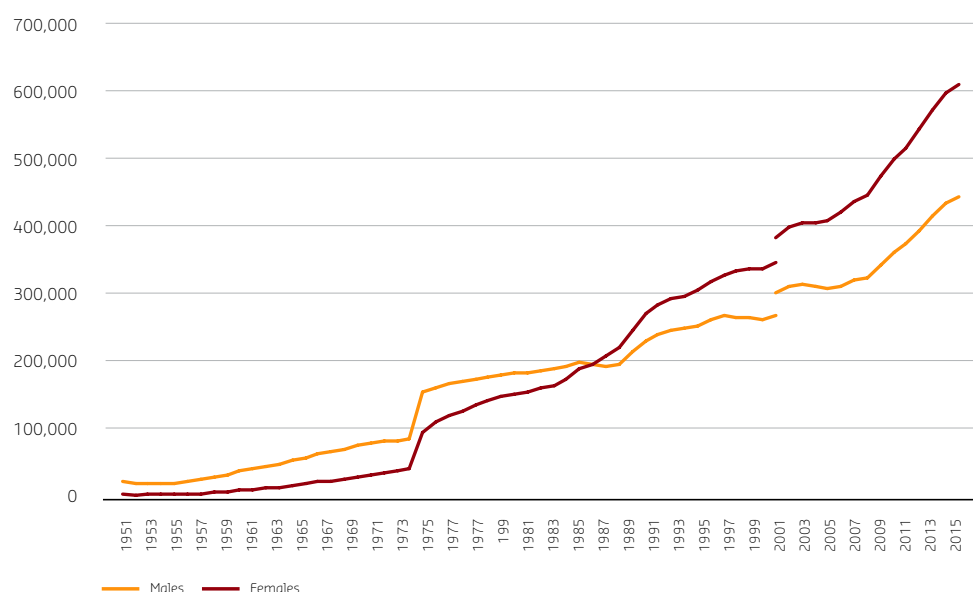
In 2015, just over 1 million domestic students were enrolled with a higher education provider, along with around 360,000 international students.

While women represented just under 20% of enrolments in 1951, their share has steadily increased, surpassing males in 1987. Women now make up 58 per cent of domestic higher education enrolments.

The Commonwealth Government is the main funder of higher education. Of the roughly \$11 billion dollars of revenue received by higher education providers in 2015, 58 per cent came from the Commonwealth: 40 per cent in direct grants and 18 per cent in payments through the Higher Education Loan Programme (HELP). Under HELP, the Commonwealth makes contributions to providers for eligible students' tuition fees, and those payments become income contingent loans which the student begins to pay back to the government through the tax system when their income reaches a minimum threshold. By contrast, state and local government financial assistance amounted to just 1.5 per cent of revenue in 2015, with the balance of around 40% raised by higher education providers through fees and charges, consultancies and other income (DET 2016).

Driven by Commonwealth government policy, there have been substantial recent and ongoing reforms to the Australian higher education system designed to increase access and equity. Figure 25 combines two time-series to show the long run trend in the number of domestic students in higher education. The break in 2001 reflects a change in the basis of measurement, and technically the data up to 1987 include international students, but this of little consequence given their very low numbers up to that time. Even with these inconsistencies, two very clear trends are unmistakable. The first is simply the very rapid increase in the number of Australians attending university, with a notable acceleration in enrolments in from 1973 to 1974, again in the early 1990s, and protracted growth from 2009. The second is the change in gender composition of the higher education student body. While women represented just under 20 per cent of enrolments in 1951, their share has steadily increased, surpassing males in 1987. Women now make up 58 per cent of domestic higher education enrolments.

Figure 25 Historical trends in Australian higher education domestic enrolments: 1951 to 2015



Source: BANKWEST CURTIN ECONOMICS CENTRE | 1951 to 2001 data series from ABS Education and Training indicators, 2001, Catalogue no. 4230.0 data cubes, includes overseas students for 1951 to 1987; 2001 to 2015 series from Department of Education and Training - Higher Education Statistics Data Cube (uCube).

Following recommendations from a Committee on Higher Education Funding, the binary system of colleges of advanced education and universities was abolished in 1987, with amalgamations of institutions in the following years to achieve fewer but larger higher education providers. A major innovation accompanying this was the introduction of the Higher Education Contribution Scheme (HECS) at the beginning of 1989. Under HECS, students paid a contribution of \$1,800 per year to the cost of their course, which could be paid up-front with a 15 percent discount, or as an income contingent loan to be repaid through the tax system when their earnings reached a minimum threshold. Fees for post-graduate courses were also deregulated. As noted, enrolments expanded rapidly immediately following these reforms (DET 2015).

In the following decades several reviews noted the under-representation in higher education of certain equity groups. The 2008 Review of Higher Education (Bradley et al. 2008 - the 'Bradley Review') was the instigation for further substantial reforms. The Bradley Review argued the need for Australia to increase the proportion of its population with university level qualifications in order to remain internationally competitive, and that achieving this would require expanded participation by under-represented groups. In line with the Bradley Review's recommendations for increased participation, the Labor government announced a target for 40 per cent of all Australians aged 25 to 34 to hold a bachelor degree or higher by 2025, compared to around 32 per cent at the time. This was accompanied by increased funding measures and the removal of government imposed caps on the number of funded student enrolments by institution, or what became known as the 'demand-driven funding system'.

The government also set a specific target for participation by low SES students – by 2020, 20 per cent of all domestic undergraduate students in Australia would come from low SES households. Low SES households were defined as those from lowest 25 per cent of socio-economic status backgrounds by residential postcode. This compared to an enrolment share of low SES students of 16 per cent at the time of the announcement (2008). Incentives to expand participation by other equity groups were supported by funding linked to equity targets for the 'Table A' providers (DET 2015, Dockery et al. 2016, Pitman et al. 2015).

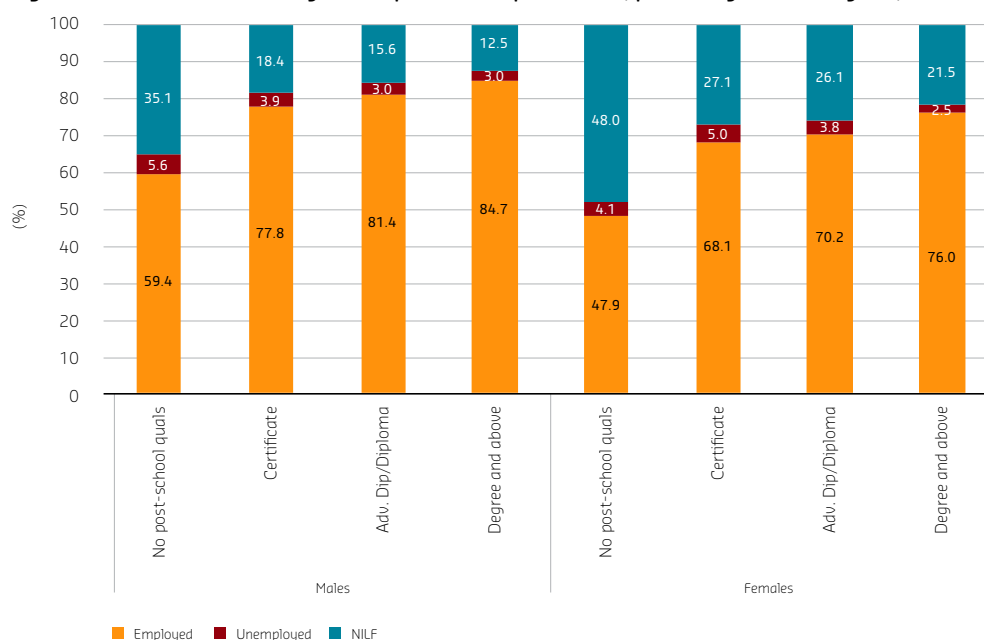
The demand-driven funding system and associated reforms ushered in the further rapid growth in student enrolments from 2009 onwards, as seen in Figure 25. Data on participation by equity groups is now systematically collected by institutions and reported by the Department of Education and Training. There has been concern that wider access to higher education would be associated with a lowering of quality. Pitman et al. (2015) investigated this issue with relation to the acceleration in enrolments between 2009 and 2011. They confirm that increased enrolments were partly achieved by lowering entry standards in terms of prior academic achievement: that is, accepting students with lower Australian Tertiary Admission Ranks (ATAR). Since ATARs are a rank rather than a direct measure of academic ability, this is almost a definitional outcome of widening access. It is much harder to assess whether there is a trade-off between access and assessment standards and the quality of education provided, with Pitman et al. arguing the claim of such a trade-off is 'unproven at best' (2015: 622). They observe that there was little change in student attrition rates accompanying the expansion of places, particularly in the context of pre-existing differences in attrition rates between institutions. This is confirmed by cohort analyses of completion rates using the departmental student data for Table A providers (DET 2017).

The government set a specific target for 20 per cent of all domestic undergraduate students in Australia to come from low SES households by 2020.

People with a university degree earn around 22.5% higher hourly wages than those whose highest qualification was completion of Year 12 after controlling for an extensive array of individual and job-related characteristics.

Gaining a university level qualification is associated with significant advantages in life. As shown in Figure 26, employment rates and participation rates are markedly higher for tertiary qualified Australians, and the incidence of unemployment is lower, compared to those with lower level qualifications. Regression analyses of data from waves 2001 to 2015 of the Household, Income and Labour Dynamics in Australian Survey (HILDA) show that people with a degree earn around 22.5 per cent higher hourly wages than those whose highest qualification was completion of Year 12, after controlling for an extensive array of individual and job-related characteristics. This wage premium associated with tertiary qualifications is similar in magnitude for men and women.

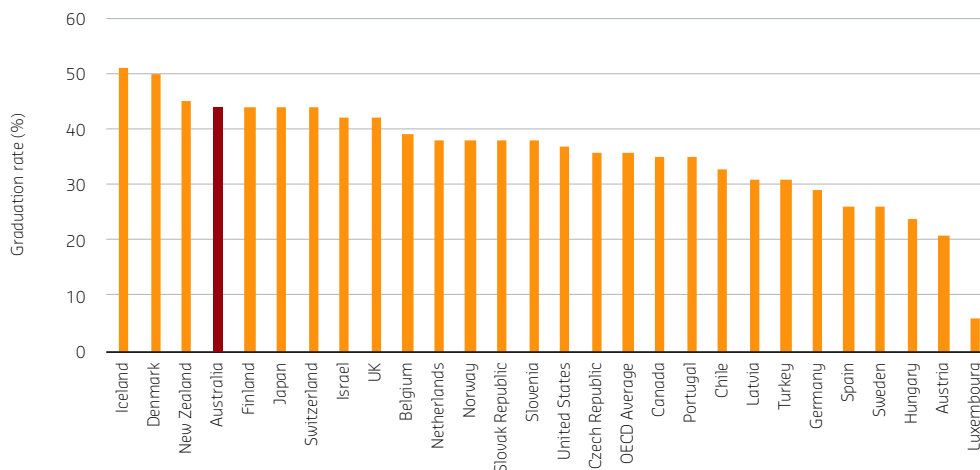
Figure 26 Labour force status by level of post-school qualification, persons aged 15 to 74 years, 2016



Source: BANKWEST CURTIN ECONOMICS CENTRE | ABS Education and Work 2016, Catalogue 6227.0 on-line data cubes.

Australia ranks equal fourth among OECD countries in terms of the proportion of the population expected to gain a bachelor or equivalent level qualification in their lifetime.

In 2008, the Bradley Review noted Australia was slipping in terms of international comparisons of the proportion of the population with degree level qualifications. The latest OECD cross-country comparisons (2014) placed Australia equal fourth among OECD countries in terms of the proportion of the population expected to gain a bachelor or equivalent level qualification in their lifetime, with a figure of 44 per cent compared to the OECD average of 36 per cent (Figure 27). This figure is based on current graduation profiles by age cohort for the population. With the recent rapid expansion in higher education enrolments, Australia is well positioned to move further up the rankings on this indicator in coming years.

Figure 27 First-time graduation rates, bachelor level or equivalent, by OECD countries, 2014

Source: BANKWEST CURTIN ECONOMICS CENTRE | OECD Education at a Glance 2016: OECD Indicators. Data on this indicator not reported for Estonia, France, Greece, Ireland, Italy, Korea, Mexico and Poland.

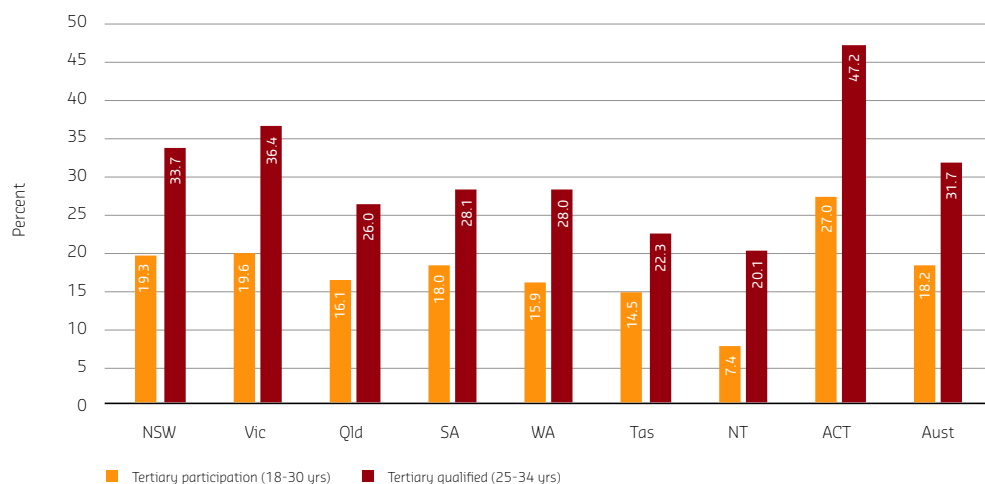
Higher education access by State

Making regional comparisons of access to higher education is more difficult than in the case of school education due to the higher geographic mobility of older students and graduates affecting measures of participation and attainment. At the tertiary level, students are more likely to study outside their state of permanent residence than is the case for secondary students, and upon university graduation, students may move interstate for employment. Consequently, Figure 28 presents two alternative indicators of access to higher education, both based on 2011 Census data. The first is the proportion of 18 to 30 year olds within each state (based on usual residence) who were attending a university or other tertiary institution in 2011. The second is the proportion of the population whose reported highest qualification in 2011 was a bachelor degree or above. In line with the Bradley Review target, this is calculated for persons aged 25 to 34 and again based on state of usual residence.

Whether based on current participation or educational attainment, the indicators tell much the same story in terms of state differentials. The Australian Capital Territory has the highest rate of participation in tertiary education and the most tertiary-qualified population. New South Wales and Victoria are second with similar rates of participation at around 20 per cent of 18 to 30 year olds, but Victoria has a slightly higher prevalence of degree-level qualifications among 25 to 34 year olds. In descending order, South Australia, Western Australia and Tasmania follow, with the Northern Territory trailing well behind. Compared to the Australian average of 18.2 per cent of 18 to 30 year olds attending university in 2011, just 7.4 per cent did so in the Northern Territory. Across Australia, 31.7 per cent of 25 to 34 year olds held a tertiary level qualification, compared to just 20.0 per cent in the NT. In 2011 the national rate remained well below the target foreshadowed in the Bradley Review of 40 per cent of 25 to 34 year olds holding a bachelor's degree or above by 2025.

The Australian Capital Territory has the highest rate of participation in tertiary education and the most tertiary qualified population.

Figure 28 Higher education access and attainment by state, 2011



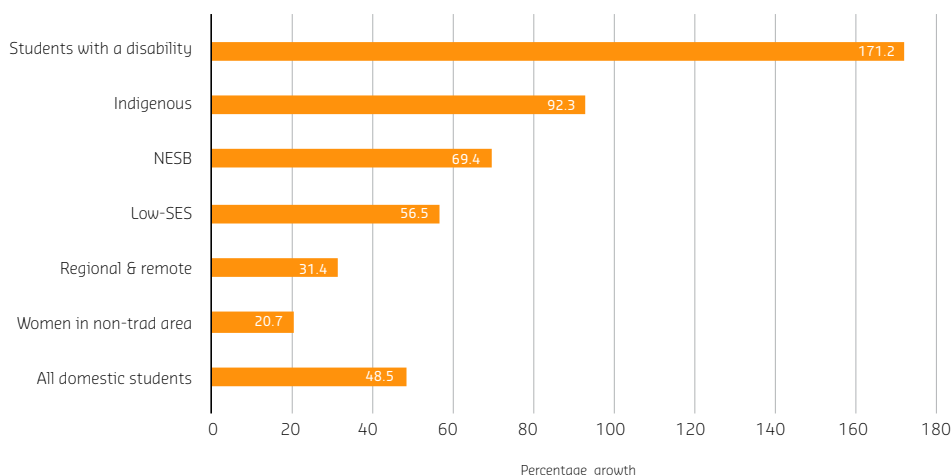
Source: BANKWEST CURTIN ECONOMICS CENTRE | ABS 2011 Census, accessed online through TableBuilder.

Higher education and equity groups

Introduced under then education minister John Dawkins, the 1998 White Paper *Higher Education: a Policy Statement* proposed the monitoring of access, participation and performance in higher education of six equity groups: Aboriginal and Torres Strait Islander Australians, persons from low SES backgrounds, from rural and regional areas, with a disability, from non-English speaking backgrounds and women studying in non-traditional subject areas. The Martin Review in 1994 had previously set out a framework for the identification of persons from these equity groups and the evaluation of progress in promoting their outcomes in higher education. Equity data are now systematically collected by each of the major institutions (Table A and B providers) and collated by the Department of Education and Training (Koshy 2016: 278-280). Much of the following section draws upon 2015 data from that collection to analyse differences across states for each equity group.³

Enrolments in each of the equity groups have been increasing as shown in Figure 29. Students with a disability is the equity group that has seen the greatest expansion, followed by Indigenous students. Enrolments of students in regional and remote areas have increased by 31 per cent, and of women studying in non-traditional areas by 21 per cent since the turn of the 21st century. However, these rates of growth are below that of the undergraduate student body overall. Further, within the regional and remote category, enrolments of remote students have marginally declined. The gross change in the number of enrolments may give a misleading picture of how access is changing, since the populations of each equity group are also changing over time; for example, there has been a rapid increase in the proportion of people with a disability within the Australian population over this time. Detailed information on differences in access across states and territories, and benchmarked against population estimates, is provided below by equity group. Further analysis of women studying in non-traditional areas is not provided since there is no reference population as such for this group.

³ The original data retrieved from <https://www.education.gov.au/student-data>

Figure 29 Change in equity group enrolment numbers 2001 to 2015, domestic undergraduate students

Note: Data for Table A and B providers.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Department of Education and Training.

Aboriginal and Torres Strait Islander Australians

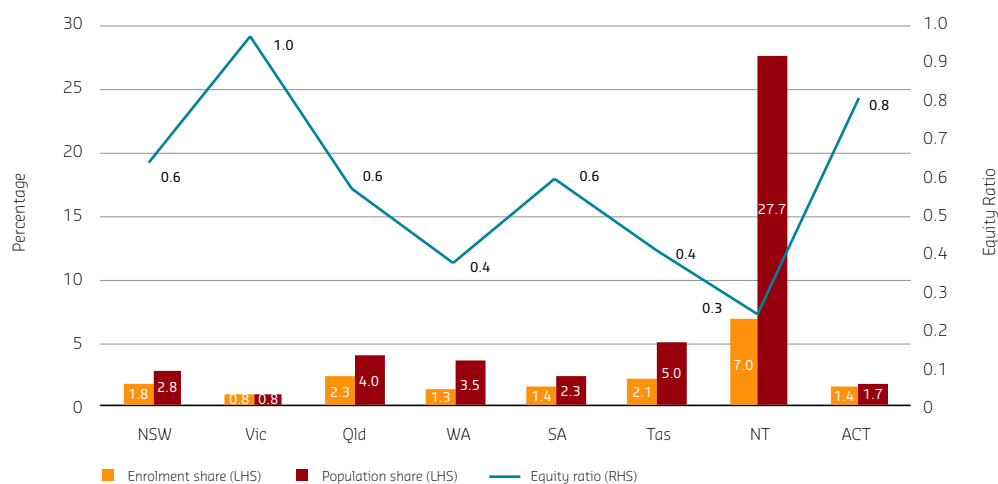
Aboriginal and Torres Strait Islander Australians continue to be markedly under-represented in higher education in Australia. In 2015, students who identified as Indigenous made up 1.6 per cent of enrolled domestic students. While this is well below their share in the overall Australian population, it does constitute an increase from 1.2 per cent in 2001. The barriers to Aboriginal and Torres Strait Islanders accessing higher education are cumulative over the life course. Indigenous Australians disproportionately reside in more remote areas of the country, and the decline in educational opportunity with remoteness has been highlighted throughout this report. Indigenous Australians are around 40 per cent less likely to complete Year 12. However, even conditional upon Year 12 completion, rates of entry into university for Indigenous Australians are sharply lower than for other Australians. Alternative entry paths into university have been increasing in recent years, and a substantial proportion of university students now gain entry as mature aged students, through accreditation from the VET sector or through enabling courses rather than on the basis of their ATAR score.

The under-representation of Indigenous students is evident across each of the states and territories. Figure 30 shows estimates of the share of Indigenous students within total domestic enrolments, along with the share of Indigenous persons within the population aged 15 to 64. We define an equity ratio as the enrolment share divided by the population share, such that a value of one for the equity ratio would indicate proportionate representation within the higher education sector. Victoria and the ACT, the two jurisdictions with the lowest shares of Indigenous people in their populations, have the most equal representation of Indigenous people within higher education. The Northern Territory, with the highest share of Indigenous persons in its population (27.7%) also has the highest proportion of Indigenous enrolments (7.0%), but the lowest equity ratio at just 0.25. Western Australia has the next lowest equity ratio, with the share of Indigenous enrolments standing at just 0.38 of their share of the population in that State.

Indigenous Australians are around 40 per cent less likely to complete Year 12. Even conditional upon Year 12 completion, rates of entry into university for Indigenous Australians are sharply lower.

The greatest barrier Indigenous Australians face to gaining a degree is not their academic performance at university; Getting to university in the first place is the largest hurdle, and retention the second.

Figure 30 Indigenous persons share of higher education enrolments and population, and equity ratios, 2015



Note: Data for Table A and B providers; enrolments include domestic students, population aged 15 to 64. Equity ratio equals enrolment share divided by population share.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Department of Education and Training.

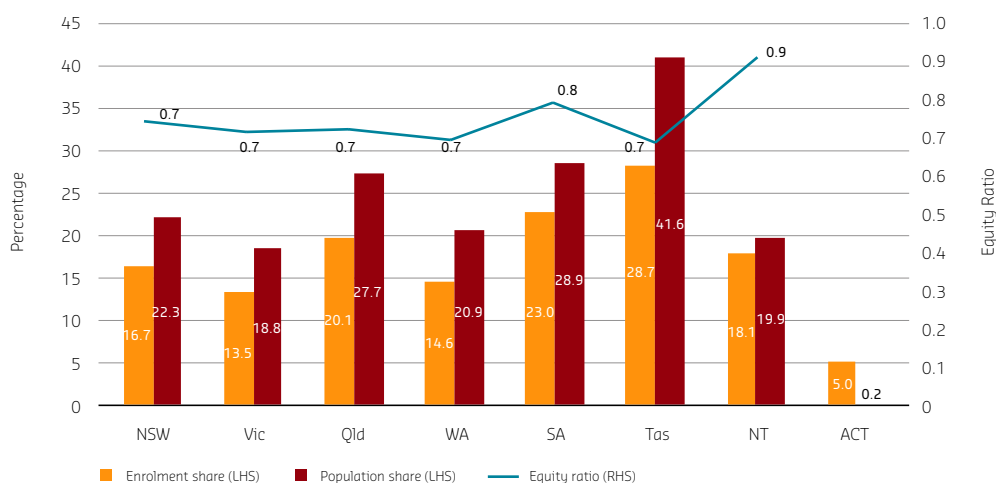
The Department's equity collection also records success ratios, derived from the proportion of units passed to units enrolled for each equity group. Indigenous students in 2015 had a pass rate of 73.7 per cent compared to the rate for all students of 87.1 per cent. The magnitude of this discrepancy is smaller than those observed for Indigenous/non-Indigenous progression rates from completion of Year 10 to completion of Year 12, and from completion of Year 12 to entry into university. Despite this pass rate, longer-term analyses of student cohorts show that Indigenous students are far more likely to drop out of university. For example, among the cohort of students that commenced in 2006, just 47.3 per cent of Indigenous students had completed by 2014 compared to 73.9 per cent of non-Indigenous students. A full 10 percentage points of this difference is due to the high proportion of Indigenous students (17.5%) who simply never come back after the first year, compounded by higher drop-out rates over the ensuing years (DET 2017). Thus the greatest barrier Indigenous Australians face to gaining a degree is not their academic performance at university; Getting to university in the first place is the largest hurdle, and retention the second.

Students from low SES background

A range of barriers to accessing higher education have been identified for low SES students. These include lower expectations and aspirations for higher education; lower preparedness and family support; financial constraints, which often mean paid employment is a higher priority; and time constraints due to other roles, such as family and caring responsibilities (Devlin and McKay 2017). Low SES students are also more likely to fall into other equity group categories. Compared to the profile of the domestic undergraduate student population overall, undergraduate students from low SES backgrounds have twice the share of Indigenous students, 1.75 times the share of regional and remote students, as well as higher representation of persons from a non-English speaking background and with a disability.

The Commonwealth government has set a target for at least 20 per cent of domestic enrolments coming from the lowest 25 per cent of households by socio-economic status by 2020. Students were classified as low SES if their permanent residential address at the time of application was in the bottom quartile of neighbourhoods by the ABS' Socio-Economic Index for Areas (SEIFA) Index for Education and Occupation. The measure was initially based on the lowest 25 per cent of areas by postcode, but more recently the government has used the geographically finer SA1 (Statistical Area Level 1). By definition, close to one quarter of the population will come from low SES areas, and the 20 per cent target does not represent a goal of proportionate representation. Progress against the targets can be assessed for each state and territory by directly comparing the representation of low SES students in enrolments. As Figure 31 shows, in 2015 Tasmania, South Australia and (marginally) Queensland exceeded the 20 per cent target of students coming from low SES areas.

Figure 31 Low SES share of higher education enrolments and population, and equity ratios, 2015



Note: Data for Table A and B providers; enrolments include domestic students, population aged 15 to 64. Equity ratio equals enrolment share divided by population share.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Department of Education and Training.

There are a number of issues associated with the targets being set and monitored on an area-based definition of low SES. Dockery, Koshy and Seymour (2016) generated household-based measures of SES, based on the attributes of young peoples' households that were most strongly associated with the probability of entering university after leaving school. Factors found to substantially increase the chance of school leavers entering university were the child being an only child, female, having attended a private school, home-ownership (as opposed to renting), and parental education. By comparing the Government's postcode based definition of low SES with their own household based measure, they find there is considerable scope for misclassification of individuals: only around 35% of youth in low-SES areas are in the lowest quartile of households in terms of their predicted probability of entering university. Depending on the measures institutions take to achieve their targets, perverse outcomes are possible. Outreach programs to schools in low SES areas, for example, could attract individuals from privileged households living in those areas, and at the expense of enrolments of disadvantaged children living in high SES areas.

Tasmania and Western Australia have the lowest equity ratios, with low SES enrolment shares at around 0.7 of their low SES population shares.

A second issue is the application of the target to each higher education institution for the purposes of equity related funding. As each institution faces the same low SES target of 20 per cent of students, the Department's equity statistics collection does not report equity reference values for the wider population. We have calculated these by state and territory using 2011 Census data by the Index of Education and Occupation SEIFA deciles by SA1 (see Figure 31). To approximate the proportion of the population aged 15 to 64 in the lowest 25 per cent of SA1's, we sum the proportion in deciles 1 and 2, and half the proportion in decile 3; and use these as the reference values for calculating an equity ratio. This puts Tasmania's performance of 28 per cent against the 20 per cent low-SES target in a new light – almost 42 per cent of the working age population in Tasmania live in low SES areas. It is therefore relatively easy for Tasmania – and its only higher education institution, the University of Tasmania – to exceed the 20% target. Tasmania and Western Australia in fact have the lowest equity ratios, with low SES enrolment shares at around 0.7 of their low SES population shares. The Northern Territory approaches parity. An equity ratio has not been reported for the ACT, as there are almost no low SES areas in the ACT (just 0.2% of the working age population). Although low-SES enrolments in 2015 were far in excess of this (5%), it does seem unreasonable to apply the same 20 per cent target to both Tasmania and the ACT.

Low SES students made up only 9.4% of domestic enrolments at Australia's more elite 'Group of Eight' institutions in 2015, compared to 16.6% for providers overall.

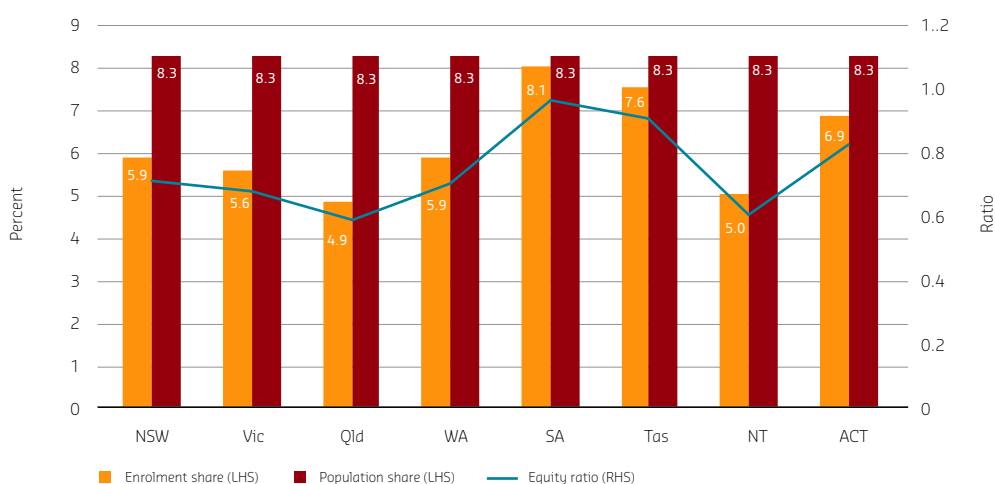
There are also strong institutional differences within the Higher Education sector. Australia's older and more research intensive universities identify as the 'Group of Eight', consisting of the Australian National University, Melbourne University, Monash University, University of Sydney, the University of New South Wales, University of Queensland, the University of Western Australia and Adelaide University. Low SES students made up only 9.4 per cent of domestic enrolments at these more 'elite' institutions in 2015, compared to 16.6 per cent for the Table A and B providers overall.

Success rates for low SES students in 2015 were comparable to those for other students, and around 95 per cent of that achieved by high SES students in each state and territory. Success rates for low SES students in 2015 were 83.5 per cent, compared to 87.1 per cent for all students. However, drop-out rates are higher among low SES students. Four years after entry, low SES students are more likely to have left university without completing than students from a high SES background (24.9% compared to 16.4%), reflecting the range of challenges faced by low SES students in attending university.

Students with a disability

In the DET equity statistics data, disability status is determined via students' self-identification as a person who has a disability, impairment or long-term medical condition that may affect their studies. The government assumes an equity reference value of 8.3 per cent across Australia as the proportion of the relevant population with a disability. In 2015, South Australia had the highest share of enrolments for people with a disability, and an equity ratio close to parity (0.97). Queensland and the Northern Territory had the lowest representation of students with a disability, at around 5 per cent of domestic enrolments. Despite their barriers to study, persons with a disability passed 81.3 per cent of their enrolled units in 2015, compared to 87.1 per cent for all students.

Figure 32 Persons with a disability - share of enrolments and equity ratios, 2015



Note: Data for Table A and B providers; enrolments include domestic students, population aged 15 to 64. Equity ratio equals enrolment share divided by population share.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Department of Education and Training.

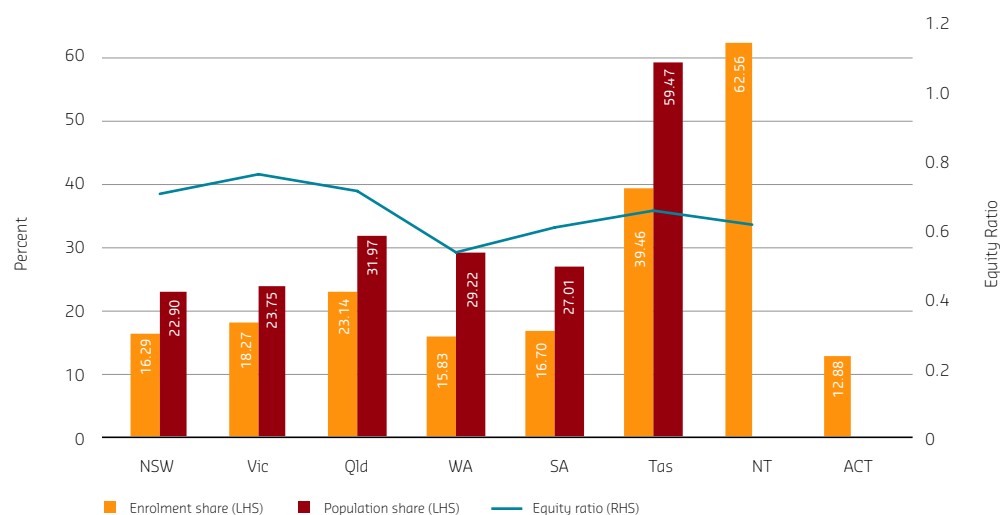
Students from regional and remote areas

Regional status is determined on the basis of students' permanent residential address at the time of enrolment. With an equity ratio of around 0.65 for Australia overall, regional and remote people face a similar degree of exclusion from higher education as persons with a disability (0.70) and Indigenous Australians (0.56). However, lack of access is far more pronounced for those from remote areas, where the equity ratio drops to 0.38. The enrolment and population shares for individual states and territories are shown in Figure 33. All areas of the Northern Territory are classified as regional or remote, and hence the population share has not been included in the figure, while the population share and equity ratio for the ACT are omitted due to none of that territory being classified as regional or remote.

Regional and remote people face a similar degree of exclusion from higher education as persons with a disability and Indigenous Australians. However, lack of access is far more pronounced for those from remote areas, where the equity ratio drops to 0.38.

Under-representation of people from regional and remote areas is driven largely by lower intention to study at university, as reflected in a lower propensity to apply.

Figure 33 Regional and remote students - share of enrolments and population, and equity ratios, 2015



Note: Data for Table A and B providers; enrolments include domestic students, population aged 15 to 64. Equity ratio equals enrolment share divided by population share.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Department of Education and Training.

Proximity to a university is associated with higher participation in higher education, but factors contributing to lower access for regional and remote students are far more complex, and addressing these challenges calls for more nuanced policy responses than simply addressing impediments and travel costs associated with spatial distance. Across Australia in 2016, acceptance rates were slightly higher for university applications from metropolitan areas (78.1%) than for applications from non-metropolitan areas (72.8%). Western Australia was the only state in which acceptance rates were higher for applications from outside the metropolitan area (84.7% compared to 83.5%). Hence under-representation of people from regional and remote areas is driven largely by lower intention to study at university, as reflected in a lower propensity to apply. Moreover, while there is minimal difference in pass rates for students from regional and remote areas, drop-out rates increase markedly with remoteness. DET's (2017) cohort analyses show drop-out rates over four years to 2014 increasing from 21.1 per cent for students from metropolitan areas, to 26.1 per cent for those from regional areas and 34.9 per cent for those from remote areas.

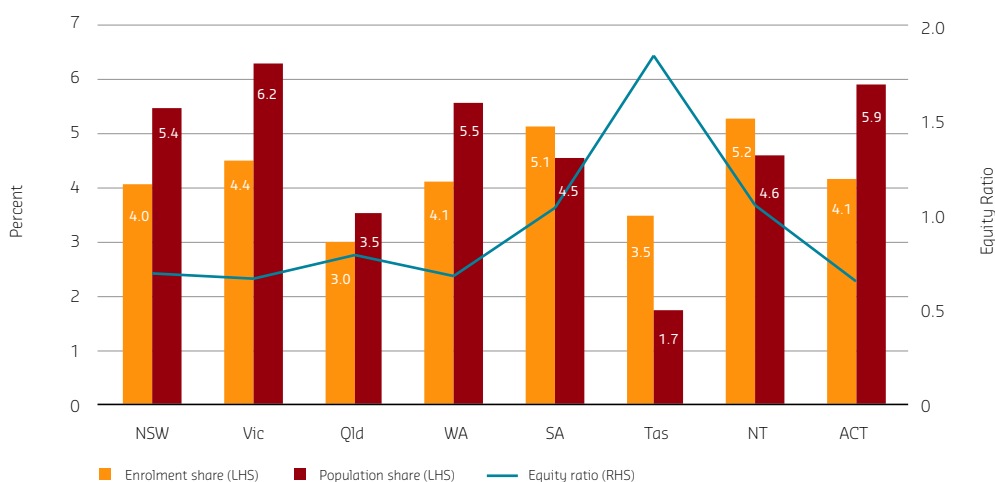
Previous research has identified differences in SES background, attitudes and aspirations to be more critical factors in suppressing higher education participation than distance for regional and remote school leavers (Cooper, Baglin and Strathdee 2017; Develin and McKay 2017). As noted above, there is substantial overlap between the regional and remote and low SES equity groups. In 2015, 28.4 per cent of regional and remote undergraduate students were also from low SES backgrounds, compared to 15.9 per cent for the domestic undergraduate population overall. A higher proportion of regional students are Indigenous and the first in their family to attend university. Many regional students have to combine work with their studies, and studying on a part-time rather than full-time basis is one of the most pronounced predictors of non-completion. Establishing more regional university campuses may reduce the tyranny of distance, but will only partially address these other challenges.

Due to economies of scale, regional campuses can only offer limited study options and experiences (Devlin and McKay 2017), and many young people growing up in regional areas do aspire to move to the cities to pursue educational and career opportunities. Indeed, completion rates at universities from the Regional University Network (RUN)⁴ are typically around one-half of those for the sector overall (DET 2017). Expanding access to higher education for Australians in regional and remote areas requires a coordinated suite of policies addressing locality of offered places, student demand and enabling factors for regional students studying both locally and at metropolitan campuses.

Students from a non-English speaking background (NESB)

For the purposes of monitoring equity performance in the higher education sector, the Department of Education and Training defines students from a non-English speaking background as those who arrived in Australia less than 10 years ago and come from a home where the prime language spoken is not English. Overall, participation in higher education for this group is slightly below that for other Australians, but there are marked differences by state. Tasmania has a very low proportion of NESB persons in its working age population, but they are around twice as likely to study at university as those from the wider population. Representation of NESB persons in enrolments in NSW, Victoria, WA and the ACT is below the group's population share, with equity ratios of between 0.70 and 0.75. Pass rates for NESB students (85.3%) are on a par with those for the wider student population (87.1%), and completion rates have in fact been consistently higher by 2 to 3 percentage points for NESB students compared to students from English speaking backgrounds since 2005 (DET 2017).

Figure 34 NESB students - share of enrolments and population, and equity ratios, 2015



Note: Data for Table A and B providers; enrolments include domestic students, population aged 15 to 64. Equity ratio equals enrolment share divided by population share.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Department of Education and Training.

Establishing more regional university campuses may reduce the tyranny of distance, but will only partially address other challenges. Indeed, completion rates at universities from the Regional University Network are typically around one-half of those for the sector overall.

Completion rates have in fact been consistently higher by 2 to 3 percentage points for NESB students compared to students from English speaking backgrounds since 2005.

⁴ The RUN includes Federation University Australia, University of Southern Queensland, University of the Sunshine Coast, University of New England, Southern Cross University and Central Queensland University.

Vocational Education and Training

The expansion of enrolments in higher education with the demand-driven funding system has been accompanied by a blurring of the lines of distinction between the higher education and VET sectors, including VET growing in importance as an entry-path into university and delivering a greater diversity of providers - more universities delivering advanced VET qualifications and more non-university providers accredited to confer degree level qualifications (Webb et al. 2017). This section looks at VET qualifications from Certificate Level III and upwards, since generally Certificate Levels I or II are not considered as a higher level of qualification than Year 12 in terms of the volume of learning (AQF Council 2013), although they will of course confer additional vocation- or workplace-specific learning. Figure 35 shows the proportion of the working age population in each state and territory for whom their highest qualification is a Certificate III or IV; a diploma or advanced diploma; or a degree or higher. In NSW, Victoria and the ACT the proportion of the population with tertiary level qualifications exceeds those with a Certificate III/IV or diploma, but in the other states and territories those VET qualified people outnumber tertiary graduates. Across jurisdictions, the proportion with diplomas and advanced diplomas seems unrelated to tertiary attainment, but the prevalence of Certificate III/IV is inversely related to the proportion of the population with university qualifications.

Figure 35 Highest non-school qualification, proportion of population aged 15 to 74



Source: BANKWEST CURTIN ECONOMICS CENTRE | ABS Education and Work 2016, Catalogue 6227.0 on-line data cubes.

Indigenous Australians actually have a higher participation rate in VET than non-Indigenous Australians. However this higher representation is concentrated at courses for lower level qualifications.

Indigenous Australians actually have a higher participation rate in VET than non-Indigenous Australians. However, this higher representation is concentrated at courses for lower level qualifications. While the share of Indigenous enrolments in higher level VET courses has been increasing, Indigenous people continue to have lower completion rates and marginally lower employment rates upon graduation than non-Indigenous VET graduates (Windley 2017). Recent research has also shown that equity group enrolment shares in bachelor degree level courses offered by non-University higher education providers are lower than for the university sector (Webb et al. 2017).

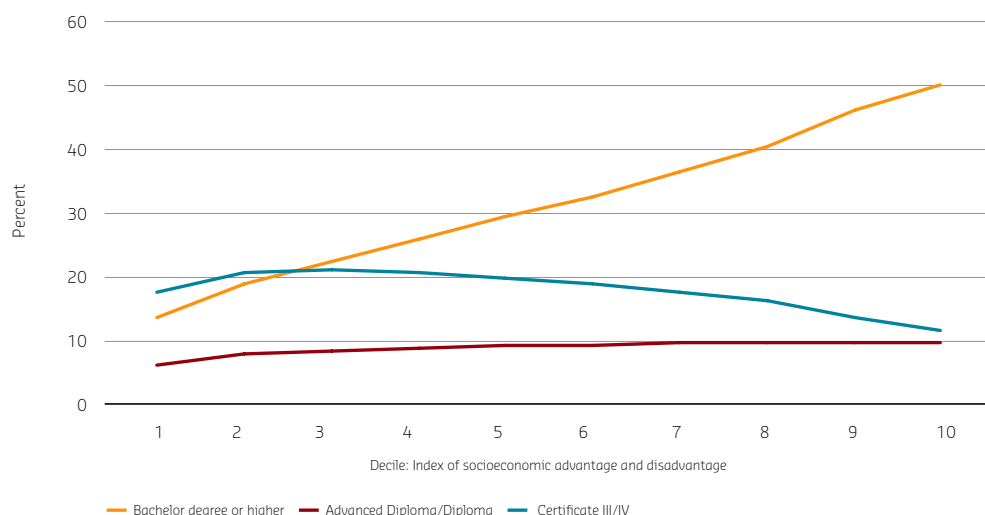
A regression model of the determinants of hourly earnings was estimated using data from the 2001 to 2015 waves of the HILDA. As noted above, the results of this wage equation show that workers with a university degree earn around 22.5 per cent higher wages than someone whose highest qualification is completion of Year 12. By comparison, having completed a diploma or advanced diploma is associated with an earnings premium of 8.1 per cent, and a Certificate III/IV with an earnings premium of just 2 per cent. These estimates control for a wide range of observable characteristics, and for unobservable individual characteristics by statistically utilising the fact that the data comprise of repeat observations on individuals. Unlike university qualifications, there are important gender differences in the pay-off to vocational qualifications. Men with advanced diploma or diploma-level qualifications earn 11.4 per cent higher wages than a male who completed Year 12 but had no other post-school qualification. Among women, completing a diploma is associated with only a 5.9 per cent increase in earnings. For completion of a Certificate III or IV, there is an earnings premium of 6.7 per cent for men, but lower earnings of 2.2 per cent for women. This highlights the more limited post-school vocational options for Australian women who do not go on to university.

Based on 2011 Census data, Figure 36 maps out the relationship between the level of qualifications held by persons aged between 25 and 34 years and the socio-economic status of the area in which they live, as measured by the decile of their place of usual address on the ABS' index of socio-economic advantage and disadvantage. Implications drawn regarding the link between SES decile and qualifications must be tempered by the fact that people move following attainment of their qualification – so causality will run both from SES to educational attainment, and from educational attainment to place of residence. Even so, the differences in socio-economic gradient between university and VET qualifications are abundantly clear. Persons of higher SES background are much more likely to gain university qualifications, while VET qualifications at the diploma level are relatively status neutral. There is a modest downwards socio-economic gradient in the proportion of persons with a Certificate III or IV, which includes the traditional trades. Taken together with the evidence on the differential wage premiums associated with these levels of qualification, it could well be argued that the VET sector plays a limited role in promoting equality of educational opportunity and social mobility.

For completion of a Certificate III or IV, there is an earnings premium of 6.7 per cent for men compared to completion of Year 12, but lower earnings of 2.2 per cent for women. This highlights the more limited post-school vocational options in Australia for women who do not go on to university.

Western Australia's higher education sector performs poorly in terms of accessibility for disadvantaged groups, with the lowest or near-lowest equity ratios for Indigenous students, students from low socio-economic and non-English speaking backgrounds, and from regional and remote areas.

Figure 36 Educational attainment by socioeconomic status of area, persons aged 25 to 34 years, 2011



Source: BANKWEST CURTIN ECONOMICS CENTRE | ABS 2011 Census, accessed online through TableBuilder.

Summary and implications

Participation in higher education has been rising rapidly in Australia, both from a longer-term historical perspective and more recently with the introduction of the demand-driven funding system. Since 1987, more females than males are entering higher education and that gap continues to widen. While persons who gain tertiary qualifications do experience superior outcomes in terms of employment rates and earnings, students also now make significant contributions to financing their university education through income contingent loans recovered via the tax system. A full cost-benefit (or rate of return) analysis is beyond the scope of this report, but recent reforms to bring forward repayment of student debt may exacerbate disincentives to participate in higher education for marginal students and, hence, for those from identified equity groups.

Table 9 summarises the equity ratios for access to higher education for the various equity groups presented in the graphs above. These are calculated as the estimated enrolment share for the group relative to their share in the population within each state and territory, so that a figure of one represents proportionate representation in higher education, and a figure below one indicates relative exclusion. There is substantial variation among states and territories in higher education access overall and for individual equity groups, reflecting different demographics and geography. However, Western Australia's higher education sector generally performs poorly in terms of accessibility for disadvantaged groups, with the lowest or near-lowest equity ratios for Indigenous students, students from low socio-economic and non-English speaking backgrounds, and from regional and remote areas.

Table 9 Equity ratios by state and equity group

State	Equity group					Average rank ^a
	Indigenous	Low SES	Disability	NESB	Regional & Remote	
NSW	0.64	0.80	0.70	0.70	0.70	3.6
Vic	0.96	0.70	0.70	0.70	0.80	4.0
Qld	0.57	0.70	0.00	0.90	0.70	4.6
WA	0.38	0.70	0.70	0.70	0.50	6.2
SA	0.60	0.80	1.00	1.10	0.60	3.2
Tas	0.42	0.70	0.90	2.00	0.70	4.0
NT	0.25	0.90	0.60	1.20	0.60	4.6
ACT	0.80	n.a.	0.80	0.70	n.a.	4.3

Note: a. Rankings are from 1 for the state/territory with the highest equity ratio to 7 for the lowest equity ratio.
Source: BANKWEST CURTIN ECONOMICS CENTRE | ABS 2011 Census, accessed online through TableBuilder.

A number of equity groups face substantial barriers to participation, most notably Indigenous Australians, those from regional and remote Australia and persons from low SES backgrounds. For Indigenous students these barriers to entry are compounded by lower pass rates. However, for Indigenous students and other equity groups generally, it is the factors that inhibit entry to, and retention at, university that most need to be addressed to promote higher attainment of tertiary qualifications - it is not a matter of differences in academic performance given commencement of a degree. It is apparent that there are no simple solutions to resolving inequity in access to higher education: there is considerable overlap between equity groups and their barriers to participation are multi-faceted. Strategies need to reshape trajectories and transitions that occur prior to completion of Year 12, as well as the very low transitions from Year 12 completion to university for Indigenous Australians, and those from regional and low SES areas.

There has been debate as to whether the VET sector offers an avenue for social mobility outside of the university sector, or simply confines already excluded groups to less prestigious education and thereby reinforces the existing hierarchies of an unequal system. Research and evidence available to date suggests that the VET sector provides limited opportunity to get ahead for those who do not gain university qualifications, and those opportunities are even more limited for equity groups identified as facing relative exclusion from higher education. Rather, access to and outcomes from VET act to entrench the hierarchy in educational opportunity. A caveat to this summation is that VET may yet develop as a more significant conduit into higher education under the demand-driven funding system.

Strategies need to reshape trajectories and transitions that occur prior to completion of Year 12, as well as the very low transitions from Year 12 completion to university for Indigenous Australians, and those from regional and low SES areas.

Rather than offer an avenue for social mobility outside of the university sector, evidence suggests that access to and outcomes from VET act to entrench the hierarchy in educational opportunity.

Education

and Social Mobility

Education and Social Mobility

Australia prides itself as being the land of the 'fair go' - a country of opportunity where talent and motivation will be justly rewarded. Many of our social systems support this ideology - public health care and education; progressive taxation; and welfare nets designed both to catch those at risk of falling through the cracks, and provide a leg up to people when needed. However, to what extent does our economic and social system provide equal access to the same opportunities for all in society?

One of the biggest questions in social policy concerns the transfer of economic advantage and disadvantage from one generation to another. For Australia, a number of studies have established a high level of transmission of negative social outcomes such as poverty, unemployment and welfare dependence from generation to generation, perpetuating a 'cycle of disadvantage' (see for example Pech and McCoull, 1998, 2000; d'Addio, 2007; Cobb-Clark, 2010).

Social mobility refers to the ease with which an individual's economic and social position is able to change (Cassells *et al.* 2011b). A high level of social mobility is often associated with a more equitable society in which individuals and families are able to benefit from favourable economic and social opportunities and escape from disadvantage. Improvements in disadvantage can lead to less pressure on public welfare systems, better health outcomes, potentially less conflict and crime and a more cohesive society.

In this section, we examine the level of mobility that exists in Australia and how this has changed over time. We concentrate on a particular type of social mobility - intergenerational mobility - and on the link between the educational attainment of children and their parents. This is motivated by the clear association between educational achievement, greater economic opportunities and labour market outcomes.

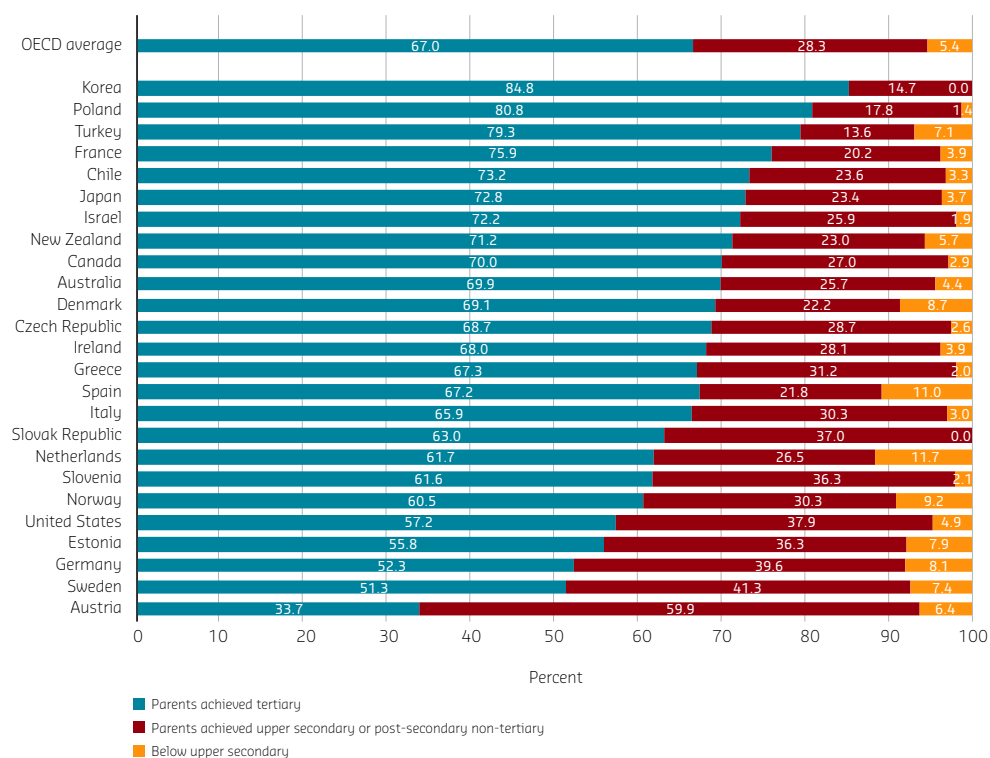
Turning first to how Australia fares on educational mobility compared to other OECD countries, Figure 37 shows the composition of parents' educational attainment among tertiary-educated people (excluding current students) aged between 25 and 34 years. On average, across all OECD countries, 67 per cent of those people aged 25 to 34 years who attained a tertiary level qualification came from a family in which their own parents were also educated to tertiary level. Australia sits just above the OECD average, with 70 per cent of 25 to 34 year olds with a tertiary qualification having parents who also achieved tertiary qualifications. Korea rates highest on this measure, at 84.8 per cent, followed closely by Poland, Turkey and France.

The proportion of people educated to tertiary level whose parents did not attain tertiary qualifications has been used as a marker of upward mobility.⁵ Austria rates highest on this measure, with just over two-thirds of the parents of young people educated to tertiary level having achieved either upper secondary or below upper secondary education. This is followed by Sweden (48.7%) and Germany (47.7%). Australia, at 30.1 per cent, sits a little lower than the OECD average of 33.7 per cent.

⁵ The metric should be interpreted with some caution, since as the proportion of the population achieving tertiary education rises over time, this necessarily reduces the stock of parents below tertiary level. There are also difficulties across all OECD countries in the comparability of pre-tertiary education systems. Nevertheless, the patterns across OECD countries with similar systems to those in Australia are instructive.

The Netherlands, Spain, Norway and Denmark are among OECD countries that have the highest proportion of young people achieving at tertiary level whose parents achieved below upper secondary, ranging from 9 to 12 per cent.

Figure 37 Parents' educational attainment among non-students aged 25 to 34 with tertiary education

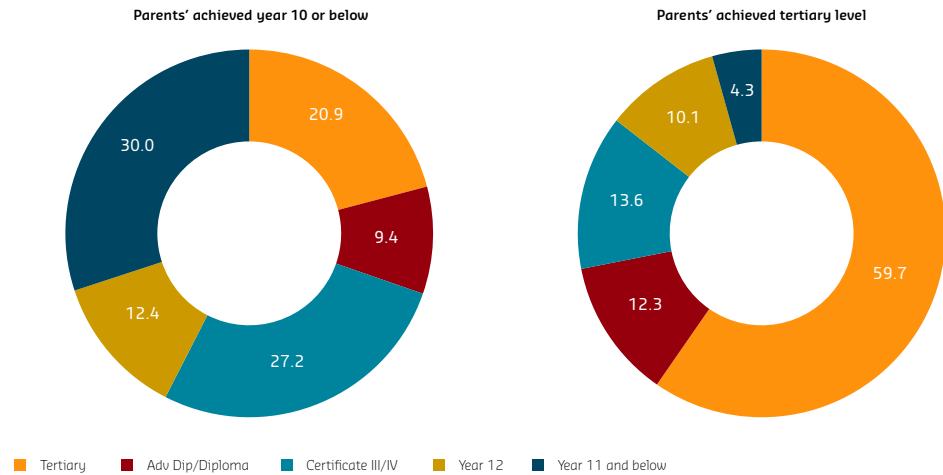


Source: BANKWEST CURTIN ECONOMICS CENTRE | Author's calculations from Education at a Glance 2016, OECD Indicators

The strong association between the educational attainment of children and that of their parents is demonstrated further in Figure 38. Among the Australian population aged 15 to 64 years whose parents achieved tertiary level education, 60 per cent went on to attain a tertiary qualification. This compares starkly with those whose parents achieved Year 10 or below, where 20.9 per cent were able to gain a tertiary qualification. The most common outcome for those whose parents who did not progress beyond Year 10 was to achieve Year 11 or below (30%).

60% of Australians whose parents achieved a university qualification have also achieved a tertiary level qualification.

Figure 38 Educational achievement by parents' educational attainment



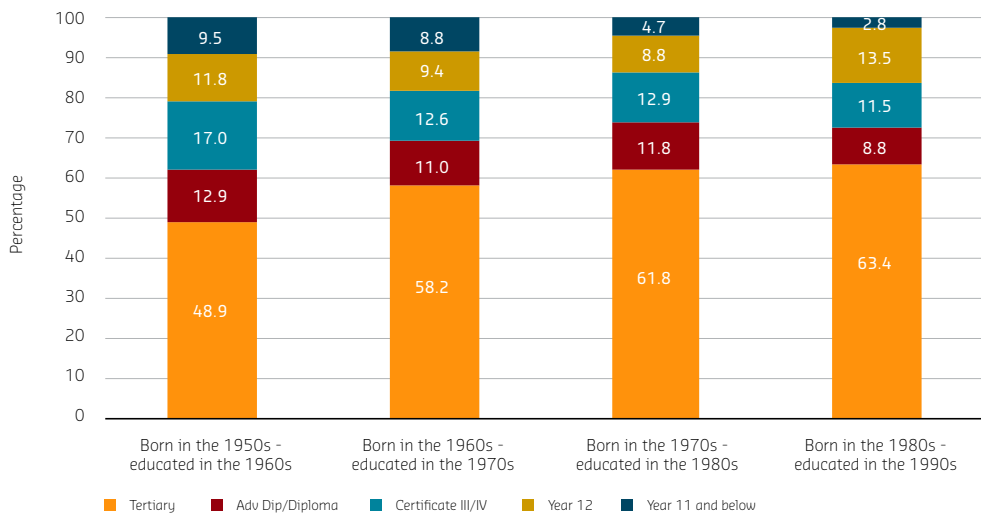
Note: Parents education achievement was constructed taking the highest qualification of either parent, where both parents were present when a person was aged 14 years.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from HILDA Release 15.

The last two decades has seen a noticeable focus on education policy, with education systems around the world expanding beyond that of mid-level high school. Currently there is a requirement that all young people stay in school until 17 years of age, completing an average of 13 years of formal schooling. And the majority of young people will go on to obtain a non-school qualification, one third of these at university.

The expansion in educational attainment has spread into pre-school, where early childhood education and learning is becoming recognised as both an industry and profession. Young Australian children are now expected to be accessing at least 15 hours of pre-school each week under the Gillard government's 2009 national education policy, and the number of children participating in a pre-school program has increased substantially over the past ten years.

Keeping in mind that educational standards and expectations differ among cohorts, we compare the educational achievement of parents and children across Australian generations to gauge the change in intergenerational mobility over the last half century.

Figure 39 shows the educational achievement of Australians if their parents achieved a university qualification. The proportion of children achieving tertiary qualifications if their parents did so too has increased consistently across all cohort groups, with around 65 per cent of those born in the 1980s whose parents studied for a tertiary qualification going on to study at university themselves. This trend also reflects the general rise in access to tertiary education in Australia. At the other end of the education spectrum, we see a sharp reduction in the fraction of children not making it through to Year 12 – down to 2.8 per cent for the latest cohort who were born in the 1980s.

Figure 39 Educational achievement if parents achieved tertiary level

Note: Parents education achievement was constructed taking the highest qualification of either parent, where both parents were present when a person was aged 14 years.

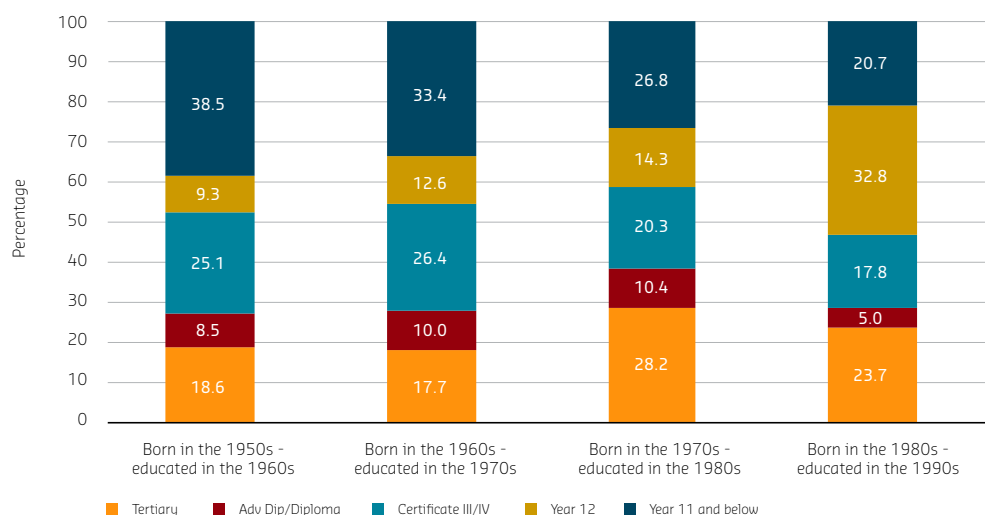
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from HILDA Release 15.

Turning to those whose parents attained no more than Year 10 education, the pattern of educational achievement does indicate a rising degree of mobility. Figure 40 shows the educational achievement of successive cohorts of children born to parents educated to Year 10 or below. We see a significant increase in the proportion of children born in the 1970s to lower educated parents (and educated in the 1980s) who went on to tertiary level education – rising by 10 percentage points to 28 per cent over and above those born in the previous decade. We also see a consistent reduction in the proportion of children of parents educated to at most Year 10 who themselves attained no more than Year 10 education – down from a rate of 38.5 per cent among those born in the 1950s to 21 per cent for the latest cohort born in the 1980s.

The proportion of children born in the 1980s to lower educated parents who went on to attain Year 12 has more than doubled over the previous decade, and tripled relative to those born in the 1950s. This is likely to reflect both educational mobility and the increased emphasis on Year 12 as a minimum educational standard for all children.

Those born in the 1970s whose parents were educated to Year 10 or below were 50% more likely to attain tertiary education themselves than earlier cohorts.

Figure 40 Educational achievement if parents achieved Year 10 or below

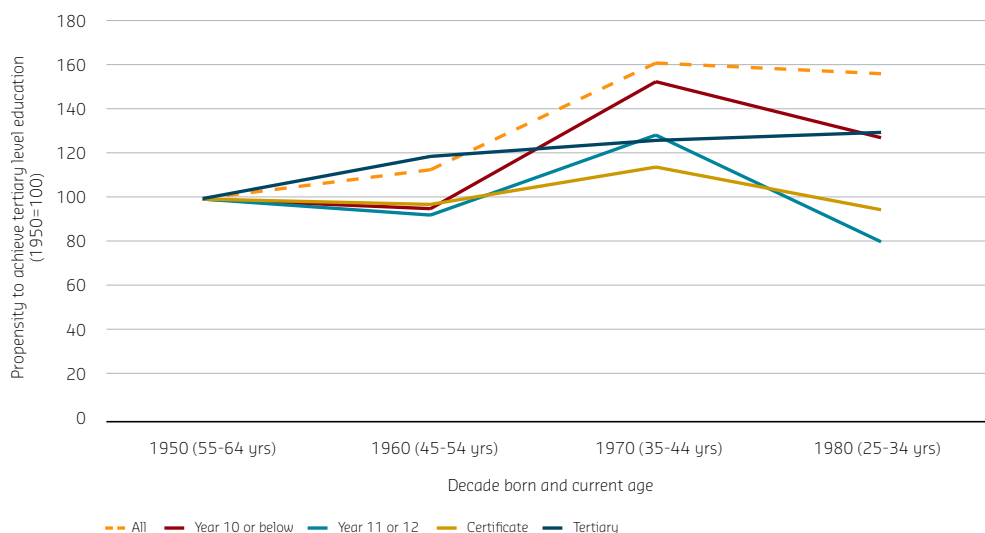


Note: Parents education achievement was constructed taking the highest qualification of either parent, where both parents were present when a person was aged 14 years.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from HILDA Release 15.

To judge the strength of evidence for intergenerational mobility in education in Australia, Figure 41 presents an indicator of the relative propensity to achieve tertiary education for different levels of parental educational attainment. Taking the 1950s cohort as a benchmark, a steady but consistent rise in the rate of access to university education of later cohorts of children born to tertiary educated parents – by an average of 10 per cent increase in the rate of access per decade.

Those born in the 1970s whose parents were educated to Year 10 or below were 50% more likely to attain tertiary education themselves than earlier cohorts. However, there is also some evidence to suggest that these high rates of mobility in education have been tailing off for the latest cohort of Australians born in the 1980s.

Figure 41 Propensity to achieve tertiary education by parents' educational attainment and cohort



Note: Parents education achievement was constructed taking the highest qualification of either parent, where both parents were present when a person was aged 14 years.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from HILDA Release 15.

Geography

and Education Disadvantage

Geography and Education Disadvantage

“The true measure of any society can be found in how it treats its most vulnerable members” Mahatma Gandhi

Increasing interest in locational disadvantage has led to an acknowledgement of the importance of place-based measures of wellbeing in relation to identification, prevention and treatment (Cassells et al 2011).

The role of education as a pathway out of disadvantage has featured strongly in policy rhetoric over time. Successive governments have introduced policies that have enabled greater access to higher education. Yet there remains concern that the educational opportunities for our children are unevenly distributed across locality, with something of a ‘postcode lottery’ within major population centres in terms of educational outcomes and achievements. And despite the advantages from living in regional and rural communities, we also see an apparent education gradient between major cities and remote or very remote areas.

So what are the key drivers of educational inequalities between localities? And what should be the focus for policy measures to ‘close the gap’ in educational outcomes?

A geographical index of educational disadvantage

For this *Focus on the States* report, we are launching a new geographical index of educational disadvantage in Australia – the *BCEC Educational Disadvantage Index*. The key purpose behind the index is to uncover the extent of inequality in educational opportunities by locality, to reveal hotspots of high or low education outcomes, and to support the development of targeted and effective policy initiatives that improve our children’s school experience and educational achievements.

The index takes a lifecycle approach, spanning each of the main education stages from pre-, primary and secondary school and beyond. A collection of individual indicators has been assembled to capture the key aspects of a well-functioning education system – access, performance and outcomes.

Key indicators include:

- Attendance at pre-school
- Attendance for 15+ hours at pre-school
- Children at developmental risk in language and cognitive skills
- Children developmentally vulnerable on two or more domains
- Achievement of primary and secondary students in literacy and numeracy
- School attendance and retention rates

These indicators have been validated, tested and combined to construct a geographically detailed index of educational disadvantage covering all areas of Australia. The index has been standardised to take on a value of 0 – 100, with 100 being the most disadvantaged and zero the most advantaged.

The BCEC Educational Disadvantage Index is used in three ways to highlight the extent of inequality of educational opportunities in Australia. First, the Index has been mapped to small areas across each of Australia’s states and territories using the SA2 geographical classification. This gives us a strong visual perspective of the relative advantage and disadvantage experienced by children in different areas of the country. Second, the Index is used to rank localities within each state or territory in terms of the level of educational advantage or disadvantage, and to profile the top and bottom ranked areas in terms of their economic, social and educational characteristics. And lastly, the Index is used to assess the key drivers of educational disadvantage by using statistical regression and controlling for a number of socio-economic, educational and geographic variables.

Educational inequality in Australia

The most disadvantaged areas are all located in very remote regions of Australia, spanning the Northern Territory, South Australia and Western Australia.

Children living in the least disadvantaged areas will achieve on average double the score in reading, writing and numeracy tests than those living in the most disadvantaged areas.

As with many socio-economic indicators, regional and remote areas across Australia's states and territories generally suffer from higher levels of disadvantage than those that are closer to the coastline (Figure 42). While many of these areas are sparsely populated, there still remains a substantial child population that is left behind the rest of the country when it comes to education. Further, the capital city insets also show that there are clusters of disadvantage, typically located on the fringes of the cities and in areas where there is relatively higher disadvantage overall.

New South Wales and Victoria typically have areas with lower levels of educational disadvantage compared to other states and territories, along with areas from south-east Queensland spreading down the coast and from inland NSW and Victoria through to the Grampians in Victoria.

Comparing the top and bottom ten locations across Australia, there is a dramatic difference between the relative advantage and disadvantage of children in these locations. The majority of the most advantaged areas are located in affluent Sydney suburbs, with a further two located in Melbourne. These areas are characterised by much lower levels of disadvantage across the education spectrum, including higher engagement in pre-school, very low proportions of children in their first year of schooling showing signs of developmental vulnerabilities, high achievement in NAPLAN testing, very high school attendance rates, high youth engagement and low overall unemployment. A number of these areas also house Australia's elite independent schools and boarding houses.

On the other hand, the most disadvantaged areas are all located in very remote regions of Australia, spanning the Northern Territory, South Australia and Western Australia. These areas are characterised by very low rates of pre-school participation and attendance levels reaching 15+ hours each week, very high rates of developmental vulnerability and school non-attendance and low achievement in NAPLAN testing. These areas also have a very dominant Indigenous population, averaging above 76 per cent of the population.

The divide between the most advantaged and disadvantaged areas is staggering. Children living in the most advantaged areas will on average achieve more than double the score in national proficiency tests in reading, writing and numeracy than those living in the most disadvantaged areas. For example, the average score in Year 5 numeracy for children living in the most advantaged areas was 566, compared with 243 for those in the most disadvantaged areas. And the proportion of children in their year before full-time schooling accessing less than 15 hours of pre-school each week in the most disadvantaged areas is just over 83 per cent, compared with 25 per cent for those in the most affluent areas.

School resourcing in the most advantaged areas ranges from \$11,655 per student in Crows Nest - Waverton to \$37,861 in Darlinghurst, with the highest figure picking up private boarding schools located in Darlinghurst. The average allocation per student for the least disadvantaged areas is just over \$21,000. The most disadvantaged schools are receiving on average more in school funding than those in the most advantaged areas, averaging around \$26,162 per student across the bottom ten locations. This ranges from \$18,531 in Elsey in the Northern Territory to just over \$38,000 per student in the APY Lands in South Australia. Student-to-teacher ratios are also slightly lower for those in the most disadvantaged areas – around 10 students for every teacher, compared to 13 students for every teacher in the most advantaged areas.

The link between socio-economic and educational disadvantage is apparent, with on average 16 per cent of children living in a single parent family in the most disadvantaged areas, compared to only 4 per cent of children in the most advantaged areas. High levels of unemployment and youth disengagement are also characteristic of these areas. Tanami in the Northern Territory has a youth engagement (earning or learning) rate of only 16.2 per cent, compared with 91.8 per cent of young people in Camberwell in Victoria.

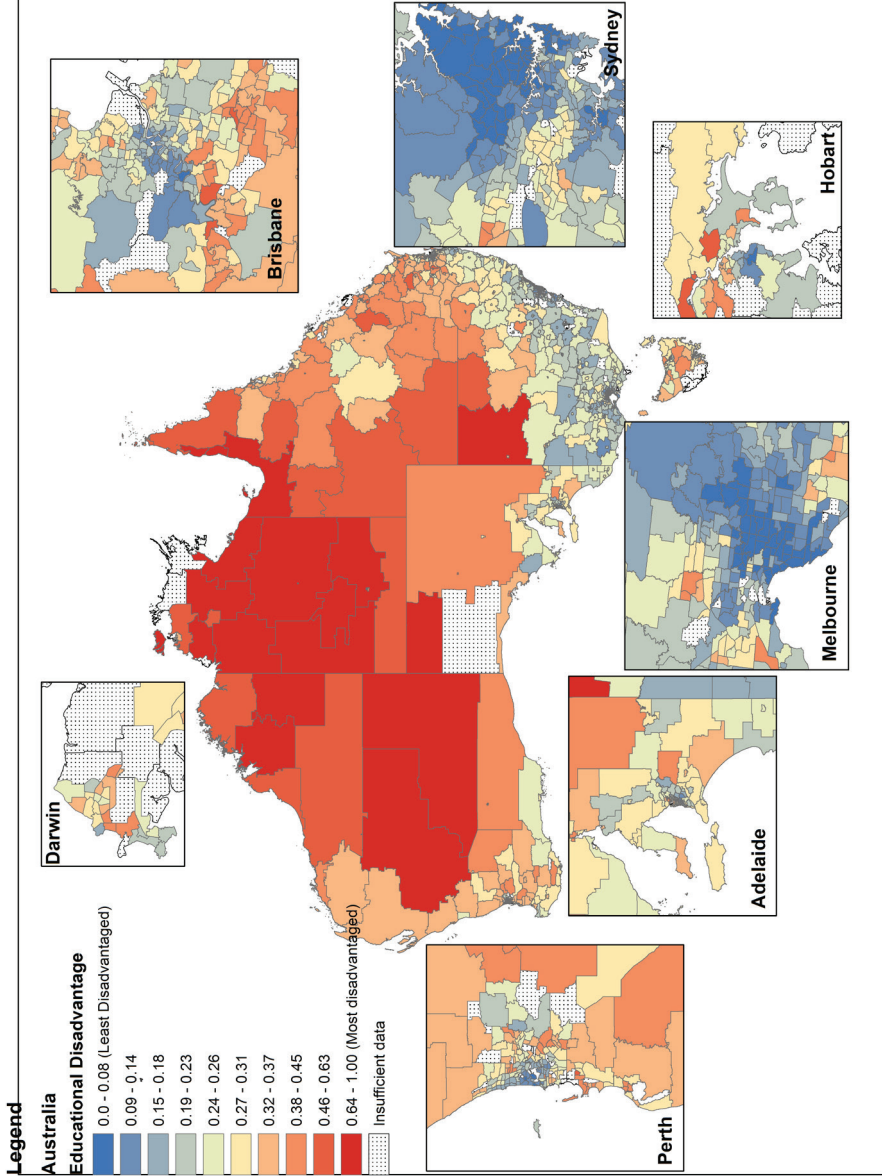
Students in the most disadvantaged areas receive more funding per student and have lower student to staff ratios than those in the most advantaged areas across Australia.

Table 10 Top 10 and bottom 10 areas of educational disadvantage: Australia

AUSTRALIA	STATE	EDUCATION ACHIEVEMENT				RESOURCES		SOCIAL AND DEMOGRAPHIC			ACCESS		ECONOMIC														
	Share of pre-school <15 hours	Share of vulnerable children on number of AEDC domains	Non attendance rate	Average year 5 NAPLAN scores	Gross income per student	Student - teacher ratio	ATSI share	Language spoken	One parent families	Remoteness (ARIA)	No family internet	Unemp. Rate	Youth engaged														
	%	1+ 2+	%	reading numeracy	\$	%	%	%	%	%	%	%	%														
Top 10																											
1	NSW	26.8	9.7	2.6	4.0	624	598	\$15,709	16.4	0.2	11.9	3.6	Major City	1.0	3.4	79.0											
2	Vic	18.0	10.7	3.4	4.0	572	562	\$13,038	15.0	0.1	18.6	4.9	Major City	0.5	4.0	91.8											
3	NSW	25.5	16.8	9.4	4.9	583	573	\$17,408	13.3	0.1	18.8	4.6	Major City	0.5	4.0	90.4											
4	NSW	24.3	12.1	7.6	4.8	574	573	\$24,434	12.2	0.2	16.5	5.0	Major City	0.8	4.4	87.9											
5	NSW	29.3	8.1	1.4	4.5	567	556	\$20,994	13.4	0.2	21.3	5.3	Major City	0.7	4.6	90.6											
6	NSW	32.3	8.3	2.8	2.9	602	579	\$37,861	8.7	0.5	18.8	1.2	Major City	2.0	5.0	71.7											
7	NSW	24.0	13.0	5.8	4.0	571	558	\$15,171	14.6	0.1	21.6	5.1	Major City	0.7	4.1	89.3											
8	NSW	23.9	9.7	3.6	6.6	571	567	\$27,718	11.0	0.1	15.4	4.0	Major City	0.8	3.7	84.3											
9	NSW	35.8	20.0	10.2	3.8	594	572	\$26,650	10.9	0.2	22.8	3.0	Major City	2.4	4.0	80.3											
10	NSW	26.6	8.5	2.1	3.3	546	559	\$11,655	15.3	0.3	21.9	3.5	Major City	1.4	3.6	82.4											
AVERAGE - top 10		NSW	26.7	11.7	4.9	4.3	580	570	\$21,064	13.1	0.2	18.8	4.0	Major City	1.1	4.1	84.8										
Bottom 10																											
1	NT	77.4	79.3	65.5	36.1	315	347	\$22,944	12.1	82.2	78.1	20.3	Very Remote	74.5	15.6	16.2											
2	NT	100.0	81.4	55.8	38.1	350	353	\$21,589	10.7	86.3	81.3	17.7	Very Remote	83.1	18.1	32.6											
3	NT	86.5	65.8	50.0	31.0	327	351	\$21,246	10.4	78.7	53.6	16.7	Very Remote	80.6	11.4	33.5											
4	SA	100.0	76.3	73.7	36.3	268	297	\$37,326	7.1	86.3	82.2	17.9	Very Remote	94.9	11.8	52.8											
5	NT	68.6	75.0	52.3	30.4	331	345	\$18,531	12.1	76.3	69.4	15.8	Very Remote	78.9	15.5	30.7											
6	NT	79.2	63.4	48.8	31.3	330	353	\$20,183	9.4	84.5	56.0	17.5	Very Remote	75.2	20.2	38.6											
7	NT	77.9	60.4	50.0	22.3	354	384	\$26,524	8.2	65.5	43.5	13.6	Very Remote	72.4	12.0	37.7											
8	WA	58.1	56.8	40.9	36.3	314	364	\$32,821	9.3	36.9	31.8	13.4	Very Remote	58.2	3.5	34.4											
9	WA	82.6	69.4	50.0	42.3	382	367	\$28,848	9.6	78.3	48.3	20.8	Very Remote	66.6	12.9	35.1											
10	NT	80.4	60.5	39.5	20.5	340	350	\$30,837	10.0	87.9	79.2	12.5	Remote	83.0	9.1	52.9											
AVERAGE - bottom 10		NT	81.1	68.8	52.7	32.4	331	351	\$26,085	9.9	76.3	62.3	16.6	Very Remote	76.7	13.0	36.5										
AVERAGE - AUSTRALIA														32.9	22.4	11.4	7.9	493	487	\$14,346	14.1	3.7	14.7	11.3	8.0	5.7	76.8

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

Figure 42. BECE Educational Disadvantage Index, Australia and capital cities



Note: Statistical Area level 2 (SA2) has been used as the spatial unit to assess educational disadvantage throughout Australian regions. Data are broken using natural breaks, which classifies the data by maximising the differences between each class.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources.

How do states and territories compare?

The most disadvantaged 10% of children in the ACT are no more disadvantaged than the most advantaged 10% of children in the NT.

Differences in educational outcomes between states and territories not only arise from the distinct profiles of children and young people, but also because of differences in the way in which education is delivered in each state and territory. While all states and territories adhere to a national curriculum there is a degree of autonomy and some jurisdictions have better or worse outcomes relative to the population profile and level of public and private investment.

As education is the responsibility of each state and territory, it is informative to drill down further into each jurisdiction to uncover the within-state variation and to capture patterns of educational disadvantage across a state's geography. This within-state variation of educational disadvantage is illustrated in Figure 43. The ACT has the tightest distribution, with very few areas with children facing substantial educational disadvantage. This is in contrast with Queensland and in particular the NT, where there's a substantial share of children and young people facing high levels of educational disadvantage. In fact, the most disadvantaged 10 per cent of children in the ACT are no more disadvantaged than the most advantaged 10 per cent of children in the NT, with children at the 90th percentile in the ACT reaching an index score of 25.6, compared to children in the 10th percentile in the NT reaching a similar index value of 24.5.

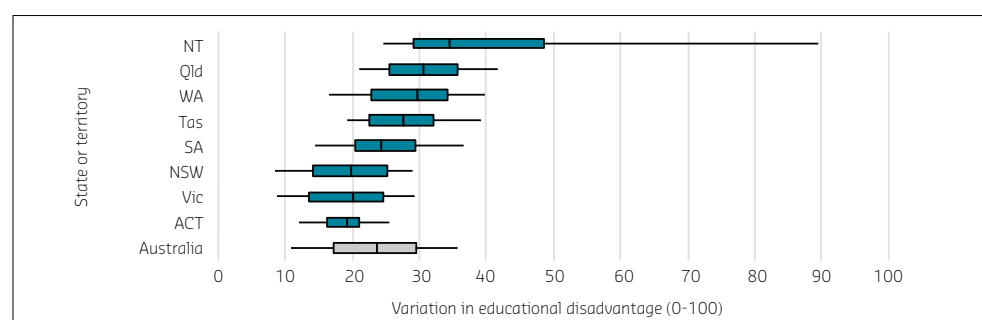
NSW and Victoria have similar within-state variation profiles, with similar medians and index values at each point along the distribution. WA and SA also have similar profiles and are typically facing greater educational disadvantage than the more populous states of Victoria and NSW.

Figure 43 Within-state variation in educational disadvantage index

State	Lower		Typical		Higher	
	Percentiles	10th	25th	50th	75th	90th
ACT		12.2	16.1	19.3	21.0	25.6
Vic		8.8	13.6	20.1	24.7	29.3
NSW		8.4	14.1	19.8	25.1	29.0
SA		14.4	20.3	24.4	29.5	36.7
Tas		19.4	22.6	27.5	32.0	39.2
WA		16.6	22.8	29.6	34.2	39.8
Qld		21.0	25.6	30.6	35.7	41.7
NT		24.5	29.2	34.4	48.7	89.5
Australia		10.9	17.2	23.6	29.5	35.8

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions. Estimates are weighted by the number of children in each SA2.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources



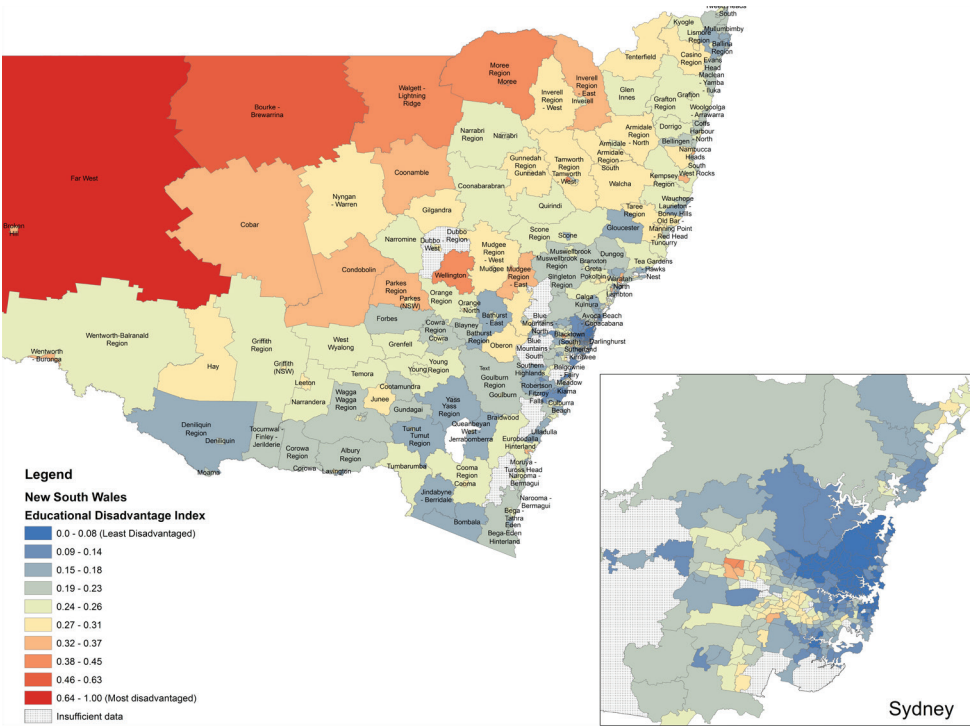
New South Wales

The spread of educational disadvantage across NSW shows increasing disadvantage the further away children live from the coastline and the greater the level of remoteness (Figure 44). There are some small pockets of disadvantage still evident along the coastline and in clusters in Western Sydney. In particular, Blacktown, which includes Mount Druitt, Lethbridge Park, Bidwell, Hebersham, as well as St Marys have high levels of educational disadvantage.

Far West NSW has the highest levels of disadvantage relative to other areas across NSW.

Far West NSW has the highest levels of disadvantage relative to other areas across Australia, with an overall index score of 67. This is followed by Bourke-Brewarrina, Walgett-Lightning Ridge and Moree and Wellington. All of these areas are also typified by Indigenous populations and tend to have high levels of child protection reports (Cassells & Duncan et al. 2014). Coastal areas of Raymond Terrace, Nambucca Heads and Kempsey also register relatively high levels of educational disadvantage when compared with the rest of the State.

Figure 44 Educational disadvantage in New South Wales



Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions. Data are broken using natural breaks, which classifies the data by maximising the differences between each class.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

One in five children in the most disadvantaged areas in NSW are vulnerable on two or more developmental domains in their first year of school compared to only 5.5% of children in the least disadvantaged areas in the state.

Educational disadvantage is spread across remote, regional and city areas of NSW, whereas relative advantage is more likely to exist in the very wealthy areas surrounding Sydney's northern suburbs and harbour.

The top and bottom ten areas of educational disadvantage within NSW demonstrate the divide between children that have considerable advantage and those that do not (Table 11). In Wellington, for example, more than one in three children in kindergarten are vulnerable on two or more developmental domains assessed by the Australian Early Development Census (AEDC). And, more than half of children in their first year at school are developmentally vulnerable in one or more domain(s). Around two-thirds of youth are not engaged in either the labour force or education and one in five children do not have access to the internet at home.

These results contrast starkly with areas throughout NSW that are relatively more advantaged when it comes to educational access and achievement. Pymble for example, is characterised by low rates of developmental vulnerability for children in their first year of school, with 8.1 per cent of children vulnerable in their learning and cognitive development and only 1.4 per cent in two or more developmental domains. Achievement in literacy and numeracy is also relatively high, and the youth engagement rate 13.8 percentage points higher than the national average of 76.8 per cent.

While a geographic element still exists when it comes to educational disadvantage, the bottom ten disadvantaged areas within NSW are located in a combination of regional, remote and city areas. This is in contrast with all of the most advantaged areas located in the inner-city Sydney suburbs, with many housing independent schools. This demonstrates that disadvantage is not just confined to remote and regional areas of NSW but relative advantage is more likely to exist in the very wealthy areas surrounding Sydney's northern suburbs and harbour.

Average gross income per student is relatively similar between the top and bottom ten areas at \$20,756 and \$22,315 respectively.

Table 11 Top 10 and bottom 10 areas of educational disadvantage: New South Wales

NEW SOUTH WALES			EDUCATION ACHIEVEMENT				RESOURCES		SOCIAL AND DEMOGRAPHIC			ACCESS		ECONOMIC					
	Share of pre-school <15 hours	Share of vulnerable children on number of AEDC domains	Non attendance rate		Average year 5 NAPLAN scores	Gross income per student	Student - teacher ratio	ATSI share			Language spoken at home	One parent families	Remoteness (ARIA)	No family internet	Unemp. Rate	Youth engaged			
			1+	2+				% reading	numeracy	\$							%	%	%
Top 10																			
1	26.8	9.7	2.6	4.0	624	\$15,709	16.4	0.2	11.9	3.6		Major City	1.0	3.4	79.0				
2	25.5	16.8	9.4	4.9	583	\$17,408	13.3	0.1	18.8	4.6		Major City	0.5	4.0	90.4				
3	24.3	12.1	7.6	4.8	574	\$24,434	12.2	0.2	16.5	5.0		Major City	0.8	4.4	87.9				
4	29.3	8.1	1.4	4.5	567	\$20,994	13.4	0.2	21.3	5.3		Major City	0.7	4.6	90.6				
5	32.3	8.3	2.8	2.9	602	\$37,861	8.7	0.5	18.8	1.2		Major City	2.0	5.0	71.7				
6	24.0	13.0	5.8	4.0	571	\$15,171	14.6	0.1	21.6	5.1		Major City	0.7	4.1	89.3				
7	23.9	9.7	3.6	6.6	571	\$27,718	11.0	0.1	15.4	4.0		Major City	0.8	3.7	84.3				
8	35.8	20.0	10.2	3.8	594	\$26,650	10.9	0.2	22.8	3.0		Major City	2.4	4.0	80.3				
9	26.6	8.5	2.1	3.3	546	\$11,655	15.3	0.3	21.9	3.5		Major City	1.4	3.6	82.4				
10	13.6	17.6	9.6	4.3	588	\$9,961	18.7	0.2	11.3	4.5		Major City	2.5	3.9	80.3				
AVERAGE - top 10			26.2	12.4	5.5	4.3	582	573	\$20,756	13.4	0.2	18.0	4.0	1.3	4.1	83.6			
Bottom 10																			
1	28.6	40.6	25.0	19.9	419	\$38,606	4.8	29.7	2.3	7.8		Very Remote	30.1	7.2	62.7				
2	36.6	44.4	24.4	15.2	434	\$23,896	9.4	29.7	5.3	9.6		Remote	34.3	8.1	53.4				
3	38.0	33.8	20.3	13.2	437	\$27,085	8.8	39.5	1.8	11.3		Very Remote	31.2	7.3	55.2				
4	29.6	51.6	36.2	11.4	456	\$17,786	10.7	20.0	1.9	10.3		Outer Regional	19.6	8.7	64.0				
5	59.0	35.8	20.9	15.0	435	\$29,475	8.0	16.9	1.2	7.4		Outer Regional	18.5	4.1	71.1				
6	59.4	37.7	31.1	16.7	456	\$23,167	10.2	27.9	1.0	10.4		Remote	24.0	7.7	64.1				
7	54.2	30.2	12.9	13.0	436	\$15,491	12.2	8.8	26.7	21.8		Major City	22.3	12.9	63.5				
8	45.9	27.1	15.2	11.1	427	\$14,208	14.2	8.6	19.1	20.3		Major City	19.8	14.2	60.8				
9	25.7	39.8	21.3	12.3	450	\$15,485	12.4	16.2	2.0	14.5		Inner Regional	22.3	10.2	68.1				
10	50.9	31.1	16.0	13.9	468	\$17,953	11.3	22.4	3.2	11.3		Outer Regional	22.1	7.1	61.9				
AVERAGE - bottom 10			42.8	37.2	22.3	14.2	442	441	\$22,315	10.2	22.0	6.5	12.5	24.4	8.8	62.5			
AVERAGE - AUSTRALIA			32.9	22.4	11.4	7.9	493	487	\$14,346	14.1	3.7	14.7	11.3	8.0	5.7	76.8			

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

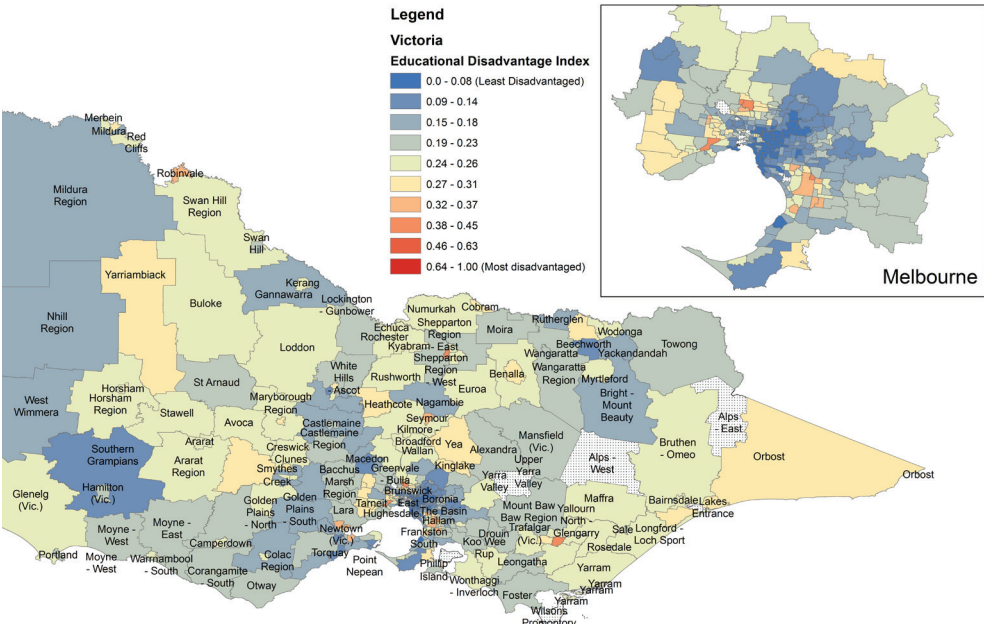
Clusters of educational disadvantage exist on the fringes of Melbourne.

Victoria

Victoria has generally far fewer areas with significant educational disadvantage compared to other states and territories, however, a number of clusters of disadvantage are evident within its capital – Melbourne (Figure 45). These clusters are located on the fringes of the city, with pockets of disadvantage around Laverton in the west, Campbellfield – Coolaroo in the north and Dandenong in the south-east. Advantaged areas are located in the north-east corridor from St Kilda through to Templestowe and Eltham.

Across the State, most areas are scoring in the mid-range of the national educational disadvantage index, with pockets of more and less disadvantaged areas scattered throughout the State's regions. These areas include Shepparton, Morwell and Mooroolbark, which record relatively high levels of educational disadvantage.

Figure 45 Educational disadvantage in Victoria



Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions. Data are broken using natural breaks, which classifies the data by maximising the differences between each class.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

Table 12 Top 10 and bottom 10 areas of educational disadvantage: Victoria

VICTORIA	EDUCATION ACHIEVEMENT				RESOURCES		SOCIAL AND DEMOGRAPHIC				ACCESS		ECONOMIC		
	Share of pre-school <15 hours	Share of children vulnerable on number of AEDC domains	Non attendance rate	Average year 5 NAPLAN scores	Gross income per student	Student-teacher ratio	ATSI share	Language spoken at home	One parent families	Remoteness (ARIA)	No family internet	Unemp. Rate	Youth engaged		
	%	1+ 2+	% reading numeracy		\$		%	%	%	%	%	%	%		
Top 10															
1 Camberwell	18.0	10.7	3.4	4.0	572	562	\$13,038	15.0	0.1	18.6	4.9	Major City	0.5	4.0	91.8
2 Armadale	19.1	5.3	1.3	4.2	551	541	\$23,476	10.2	0.2	18.4	3.6	Major City	0.6	4.1	86.4
3 Surrey Hills (East) - Mont Albert	20.9	12.1	5.1	4.0	554	543	\$7,923	18.7	0.1	17.6	5.0	Major City	1.4	4.7	91.0
4 Murrumbidgee	23.5	3.0	1.0	4.6	547	537	\$8,375	17.4	0.1	30.8	4.3	Major City	1.5	4.4	87.8
5 Glen Iris - East	18.3	11.4	2.5	4.1	563	547	\$18,097	11.5	0.1	16.7	5.2	Major City	1.0	4.2	88.3
6 Balwyn	19.4	12.5	4.2	4.8	564	550	\$15,061	12.6	0.1	32.2	6.2	Major City	2.0	4.7	91.3
7 Hampton	26.9	8.6	3.9	5.5	548	549	\$13,327	13.2	0.2	15.4	7.1	Major City	2.6	4.4	87.5
8 Kew	19.2	10.0	3.5	4.6	548	536	\$27,947	9.6	0.1	22.8	5.3	Major City	1.1	4.1	90.6
9 Kew East	18.6	7.4	4.9	4.0	539	528	\$11,398	15.0	0.3	26.0	5.6	Major City	2.1	3.9	89.6
10 Templestowe	29.0	14.4	5.9	6.3	558	561	\$8,304	18.0	0.1	39.2	5.4	Major City	1.6	4.5	91.9
AVERAGE - top 10	21.3	9.5	3.6	4.6	554	545	\$14,695	14.1	0.1	23.8	5.3	Major City	1.4	4.3	89.6
Bottom 10															
1 Morwell	30.0	50.9	36.4	8.2	455	456	\$13,115	13.7	2.8	10.7	11.2	Inner Regional	13.9	12.2	64.1
2 Laverton	23.7	38.4	23.2	9.1	441	446	\$23,080	6.9	0.9	42.3	9.3	Major City	12.3	9.4	71.9
3 Kerang	9.4	51.6	25.8	5.9	495	485	\$13,344	11.3	2.4	1.9	6.9	Outer Regional	15.4	4.5	76.6
4 Meadow Heights	40.7	33.6	17.0	8.0	441	451	\$12,877	12.6	0.7	70.4	13.4	Major City	12.4	12.0	77.2
5 Mooroopna	35.4	37.4	21.5	10.5	450	445	\$12,883	13.4	7.2	5.9	10.9	Inner Regional	11.2	6.9	71.5
6 Doveton	45.0	30.8	16.6	5.9	442	453	\$14,820	12.7	1.6	45.5	11.5	Major City	14.3	10.6	72.7
7 Fitzroy	29.8	43.2	24.7	7.0	454	467	\$14,834	12.1	0.7	27.1	6.7	Major City	12.1	6.2	71.3
8 Campbellfield - Coolaroo	32.7	33.9	15.8	6.7	444	454	\$13,243	13.4	0.5	66.9	9.7	Major City	14.5	13.2	73.7
9 Seymour	60.8	37.0	24.1	8.6	485	472	\$12,620	12.4	1.9	4.4	11.0	Inner Regional	11.6	7.5	67.1
10 Collingwood	34.7	37.7	21.3	7.5	470	464	\$15,893	9.8	0.8	30.0	9.1	Major City	16.3	6.8	71.9
AVERAGE - bottom 10	34.2	39.5	22.6	7.7	458	459	\$14,671	11.8	2.0	30.5	10.0	Mixed	13.4	8.9	71.8
AVERAGE - AUSTRALIA															
	32.9	22.4	11.4	7.9	493	487	\$14,346	14.1	3.7	14.7	11.3		8.0	5.7	76.8

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

The most disadvantaged areas within Victoria are also less likely to be characterised as an Indigenous community and more likely to be located within a major city than those identified in the bottom ten in NSW, Queensland, WA, SA and the NT.

Among the ten most disadvantaged areas in Victoria, the proportion of children that are developmentally vulnerable in two or more domains is double that of the national average.

The top and bottom ten areas of educational disadvantage within Victoria have a different profile to those in other states and territories, with the divide between the two groups less striking (Table 12). The most disadvantaged areas within Victoria are also less likely to be characterised as an Indigenous community and more likely to be located within a major city than those identified in the bottom ten in NSW, Queensland, WA, SA and the NT.

In fact, relative to the national average, the bottom ten areas within Victoria score reasonably well on a number of indicators overall, however, there is also a greater degree of variation within these areas, making them challenging to typify. For the ten most disadvantaged areas, the proportion of children that are deemed to be developmentally vulnerable in one or more domain(s) is around one in three children on average, and more than one in five are vulnerable in two or more domains. This compares with the national average of 22.4 and 11.4 per cent respectively. However, school non-attendance rates for students in these areas are very similar (7.8 per cent on average) to the national average of 7.9 per cent, and while average NAPLAN scores are below that of the national average, they are not too distant.

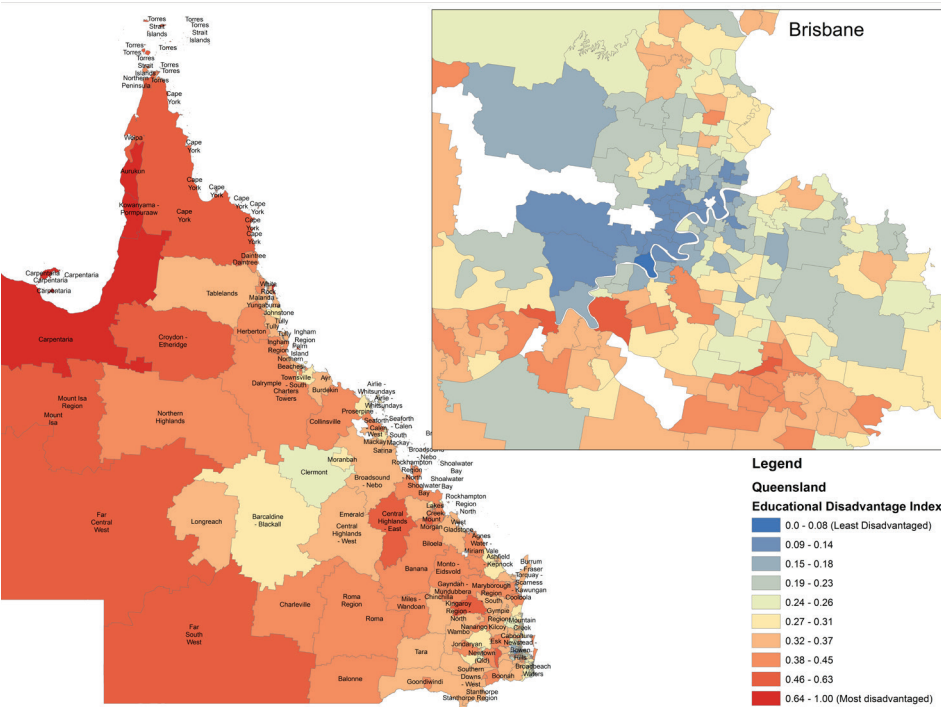
The social and demographic profile of these areas is where we can see some likely drivers of the level of educational disadvantage experienced by children in these areas. Children in these areas are more likely to come from a non-English speaking background, which is likely to be influencing the developmental scores seen in the AEDC instrument and NAPLAN performance. Nationally, the proportion of children that speak a language other than English at home is 14.7 per cent. Across the bottom ten areas the proportion is double at 30.5 per cent, with a number of areas recording well over these proportions.

On average, gross income per student is similar among the top and bottom ten areas, with the bottom ten tending to have slightly smaller class sizes of around 12.4 students per teacher compared to the top ten areas with 14.6.

Queensland

For Queensland, many of the State's regions record high to very high levels of educational disadvantage, with children doing poorly on multiple education indicators. A ribbon of advantaged areas is evident along the Brisbane River, extending from Bellbowrie through to Eagle Farm. Educational disadvantage then tends to increase as suburbs spread away from the River, with high disadvantaged areas directly bordering relative advantaged areas in a number of locations. Wacol and Riverview in the West stand out as problem areas, as well as the Logan-Beaudesert region south of the city.

Figure 46 Educational disadvantage in Queensland



Many of Queensland's regions record high to very high levels of educational disadvantage, with children doing poorly on multiple education indicators.

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions. Data are broken using natural breaks, which classifies the data by maximising the differences between each class.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

Table 13 Top 10 and bottom 10 areas of educational disadvantage: Queensland

QUEENSLAND		EDUCATION ACHIEVEMENT				RESOURCES		SOCIAL AND DEMOGRAPHIC				ACCESS		ECONOMIC	
Local area (SA2)	Share of pre-school <15 hours	Share of vulnerable children on number of AEDC domains	Non attendance rate	Average year 5 NAPLAN scores	Gross income per student	Student-teacher ratio	ATSI share	Language spoken	One parent families	Remoteness (ARIA)	No family internet	Unemp. Rate	Youth engaged		
	%	1+ 2+	%	reading numeracy	\$		%	%	%	%	%	%	%		
	Top 10														
1	Fig Tree Pocket	26.2	12.7	4.8	4.6	562	539	14.4	0.3	9.4	6.6	Major City	-	2.9 92.1	
2	Bardon	8.4	9.9	3.3	4.8	566	541	\$10,039	16.7	0.6	6.4	5.7	Major City	0.6 3.7 86.9	
3	Wilston	14.7	9.5	3.2	4.0	553	525	\$11,847	17.7	0.8	9.2	5.3	Major City	1.3 3.3 84.1	
4	St Lucia	15.1	23.8	7.6	4.0	575	557	\$9,331	17.2	0.2	30.7	3.2	Major City	2.7 14.0 90.0	
5	Chelmer - Graceville	9.6	15.0	9.2	5.0	565	545	\$11,917	14.7	0.3	7.3	5.5	Major City	1.1 3.5 86.4	
6	Pinjarra Hills - Pullenvale	12.1	9.3	4.0	6.2	530	509	\$10,359	15.9	0.3	6.9	4.5	Major City	- 3.9 88.0	
7	Sherwood	13.5	10.3	3.8	5.0	535	524	\$9,909	17.7	0.7	9.6	4.6	Major City	0.8 4.1 81.1	
8	Brookfield - Kenmore Hills	21.5	18.9	11.1	5.2	551	546	\$10,661	14.7	0.2	10.3	5.4	Major City	1.3 3.7 91.1	
9	East Brisbane	19.1	15.6	4.4	3.2	542	538	\$24,046	11.8	0.9	17.3	3.8	Major City	0.9 5.3 83.0	
10	Ashgrove	14.3	18.7	7.9	4.1	541	529	\$15,115	14.1	0.7	6.6	5.6	Major City	1.6 4.1 88.1	
AVERAGE - top 10		15.5	14.4	5.9	4.6	552	535	\$12,728	15.5	0.5	11.4	5.0	Major City	1.0 4.9 87.1	
Bottom 10															
1	Carpentaria	7.3	61.5	43.6	29.8	381	386	\$22,878	9.1	61.4	4.7	13.0	Very Remote	61.4 9.2 36.2	
2	Yarrabah	100.0	23.5	13.7	33.0	387	405	\$17,331	10.7	97.2	17.2	31.9	Outer Regional	69.2 62.1 29.6	
3	Northern Peninsula	-	40.3	23.6	27.0	380	400	\$17,272	11.6	85.5	76.5	19.8	Very Remote	64.8 8.6 50.2	
4	Cape York	21.4	65.7	48.5	14.3	472	464	\$17,049	10.5	49.7	34.2	12.2	Remote	51.5 12.6 44.0	
5	Far Central West	33.3	47.2	27.8	10.8	436	452	\$28,943	6.6	17.0	3.6	5.3	Very Remote	19.3 3.3 72.9	
6	Far South West	14.3	46.3	28.3	11.5	416	407	\$34,480	8.3	22.5	2.0	7.3	Very Remote	23.5 4.3 67.6	
7	Torres	-	46.0	27.6	12.1	398	398	\$23,696	9.2	63.3	39.5	14.4	Very Remote	41.7 5.2 61.5	
8	Balonne	36.2	47.5	35.8	11.9	438	449	\$18,730	10.6	17.1	1.9	7.2	Remote	16.4 4.2 69.7	
9	Wacol	22.2	45.2	24.2	11.0	413	429	\$20,511	7.1	11.3	13.4	17.7	Major City	22.6 12.0 39.2	
10	Westcourt - Bungalow	21.3	35.5	16.4	10.5	370	361	\$17,222	10.9	15.5	18.9	9.5	Outer Regional	28.0 11.3 54.1	
AVERAGE - bottom 10		25.6	45.9	29.0	17.2	409	415	\$21,811	9.5	44.1	21.2	13.8	Mixed	39.8 13.3 52.5	
AVERAGE - AUSTRALIA		32.9	22.4	11.4	7.9	493	487	\$14,346	14.1	3.7	14.7	11.3	8.0	5.7 76.8	

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

Looking to the top and bottom ten areas of educational disadvantage across Queensland, the ribbon of advantaged suburbs surrounding the Brisbane River are identified and show similar characteristics to other jurisdictions' top ten areas (Table 13). Very few children are presenting as developmentally vulnerable in their first year of schooling, the vast majority of children in their year before schooling are accessing more than 15 hours of pre-school each week and NAPLAN scores for literacy and numeracy are well above the national average. What is unusual about these areas is that there is lower average gross income per student compared to the national and NSW top ten areas. Gross income per student averages \$12,399 across these areas. This compares with the top ten nationally, which records an average gross income per student of more than \$20,000.

Queensland areas that score in the bottom ten on the educational disadvantage index are likely to be located in remote and very remote regions across the State and a number of these areas are also Indigenous communities. Wacol in Brisbane's south-west also appears in the bottom ten areas. What is interesting is that these areas are doing better than average on a number of indicators when compared to both the overall national average and the national average among the bottom ten ranked areas. For example, pre-school attendance is better on average than national figures – with around three out of four children in their year before schooling accessing more than 15 hours each week. This compares with only two-thirds of children on average nationally. While these figures do not include enrolment rates, they are encouraging and suggest that for a number of areas across the State, this early investment in children will begin to payoff in years to come. Average NAPLAN scores, while lower than the overall national average, are relatively higher than the most disadvantaged areas located across other regions of Australia, while noting the range within this grouping of 370 for Year 5 pupils living in Westcourt – Bungalow on reading assessment to 472 for pupils living in Cape York.

Queensland areas that score in the bottom ten on the educational disadvantage index are likely to be located in remote and very remote regions across the State and a number of these areas are also Indigenous communities

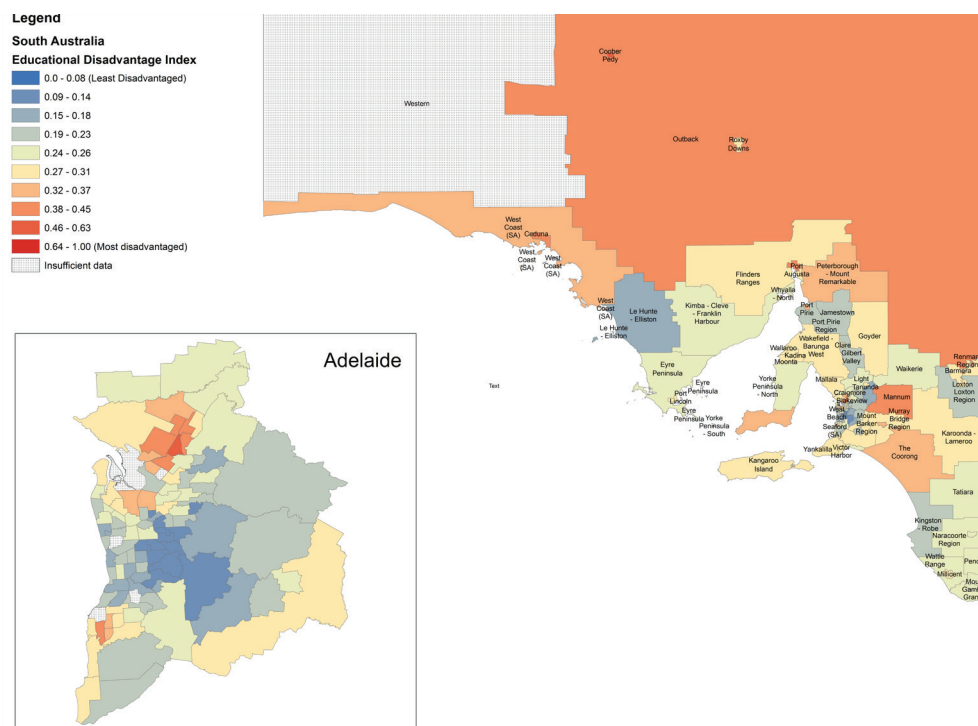
Queensland's most disadvantaged areas are doing better than the national average on a number of indicators, especially universal access to pre-school, suggesting this investment in early childhood will begin to payoff in years to come.

The remote regions of South Australia, including Outback, Coober Pedy and APY Lands while sparsely populated also have high levels of relative educational disadvantage.

South Australia

As with other states and territories, most of South Australia's population is located in its capital – Adelaide, with fewer children living in the large remote geographic regions further from the coastline. These remote regions of South Australia, including Outback, Coober Pedy and APY Lands, while sparsely populated, also have high levels of relative educational disadvantage. Relative disadvantage also exists within the city areas of North Adelaide and Elizabeth and its surrounding suburbs. More advantaged areas are located in the inner-city areas through to the Adelaide Hills region.

Figure 47 Educational disadvantage in South Australia



Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions. Data are broken using natural breaks, which classifies the data by maximising the differences between each class.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

Table 14 Top 10 and bottom 10 areas of educational disadvantage: Queensland

SOUTH AUSTRALIA		EDUCATION ACHIEVEMENT				RESOURCES		SOCIAL AND DEMOGRAPHIC				ACCESS		ECONOMIC		
Local area (SA2)	Share of pre-school <15	Share of vulnerable children	AEDC domains	Non attendance rate	Average year 5 NAPLAN scores	Gross income per student	Student-teacher ratio	ATSI share	Language spoken at home	One parent families	Remoteness (ARIA)	No family internet	Unemp. Rate	Youth engaged		
	%	1+	2+	%	reading	numeracy	\$	%	%	%	%	%	%	%		
Top 10																
1 Toorak Gardens	20.7	18.1	10.4	4.9	547	534	\$11,687	17.2	0.3	16.4	5.0	Major City	3.0	4.8	89.3	
2 Blackwood	39.3	11.4	6.0	5.4	545	520	\$11,098	17.1	0.5	6.0	5.7	Major City	2.5	3.7	84.5	
3 Burnside - Wattle Park	18.3	21.6	9.3	4.9	538	528	\$20,423	11.8	0.4	22.4	6.0	Major City	1.3	4.2	88.1	
4 Unley - Parkside	12.4	8.9	4.7	5.7	529	516	\$13,147	15.5	0.4	17.5	5.5	Major City	2.3	4.7	85.7	
5 North Adelaide	33.3	20.0	4.0	5.7	532	521	\$14,096	14.8	0.8	18.8	3.1	Major City	5.3	5.4	89.3	
6 Belair	38.5	13.3	6.5	4.4	524	508	\$14,505	14.9	0.3	5.7	5.3	Major City	1.4	3.7	84.5	
7 Nailsworth - Broadview	18.9	6.8	5.4	5.0	509	497	\$9,505	17.5	0.5	21.0	5.0	Major City	2.4	3.8	84.9	
8 Walkerville	32.4	14.7	5.9	5.1	530	512	\$17,132	13.5	0.4	18.1	4.6	Major City	2.7	4.5	87.4	
9 St Peters - Marden	28.9	12.0	4.3	4.3	489	500	\$20,932	11.5	0.5	22.8	4.9	Major City	3.7	4.8	86.9	
10 Mitcham (SA)	20.6	19.1	6.9	6.6	529	513	\$14,697	13.6	0.4	11.3	6.3	Major City	1.5	3.7	86.4	
AVERAGE - top 10		26.3	14.6	6.3	5.2	527	515	\$14,722	14.8	0.5	16.0	5.1	Major City	2.6	4.3	86.7
Bottom 10																
1 APY Lands	100.0	76.3	73.7	36.3	268	297	\$37,326	7.1	86.3	82.2	17.9	Very Remote	94.9	11.8	52.8	
2 Coober Pedy	100.0	51.2	31.7	25.0	453	445	\$26,224	8.5	16.2	24.0	5.0	Very Remote	26.3	8.8	65.2	
3 Elizabeth	52.1	40.4	24.3	14.1	425	412	\$17,000	13.2	4.4	12.3	14.5	Major City	25.2	16.8	63.9	
4 Outback	35.9	51.2	31.7	17.2	401	431	\$48,885	6.8	13.2	6.0	7.1	Very Remote	18.1	3.2	66.5	
5 Port Augusta	39.5	45.3	24.5	14.6	455	445	\$18,178	11.6	17.3	4.3	9.9	Outer Regional	22.2	5.9	65.6	
6 Smithfield - Elizabeth North	47.2	38.3	23.0	12.7	425	420	\$12,903	13.5	4.0	8.1	15.8	Major City	19.2	14.2	57.6	
7 Ceduna	62.3	23.7	15.8	15.3	415	434	\$18,412	11.0	24.4	6.9	8.5	Very Remote	23.2	5.0	65.9	
8 West Coast (SA)	60.0	28.0	14.0	14.5	444	434	\$23,827	11.0	15.9	5.3	5.0	Very Remote	16.3	4.9	66.3	
9 Salisbury	48.7	44.6	25.5	8.1	459	445	\$13,659	14.4	2.3	23.9	10.6	Major City	15.3	10.6	68.5	
10 Salisbury North	48.4	33.2	17.6	11.4	439	423	\$13,844	14.0	2.5	20.1	13.9	Major City	16.8	8.9	69.1	
AVERAGE - AUSTRALIA		32.9	22.4	11.4	7.9	493	487	\$14,346	14.1	3.7	14.7	11.3	8.0	5.7	76.8	

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

Almost 60% of children in the most disadvantaged areas in South Australia are attending pre-school for less than 15 hours each week, compared to around 33% nationally.

A similar divergence between the most and least disadvantaged regions is seen across South Australia localities (Table 14). Of note is the very high proportion of children in their year before schooling that are not accessing 15 or more hours of pre-school each week. Almost 60 per cent of children in the most disadvantaged areas are attending pre-school for less than 15 hours each week, compared to around 33 per cent nationally. This also compares starkly with children in the top ten areas in South Australia where only one-quarter are not attending pre-school for more than 15 hours each week in their year before full-time schooling. The very high rates of developmental vulnerability for these children are therefore not surprising. South Australian children living in the ten most disadvantaged areas are twice as likely to be developmentally vulnerable on one or more domain(s) in their first year of schooling and three times as likely to be developmentally vulnerable on two or more domains as children nationally.

Non-attendance rates at school are also double the rate of the national average for children in the most disadvantaged areas in South Australia, and triple the rate of the most advantaged areas in South Australia. Adding to this is the very low proportion of young people engaged in either the workforce or in an educational setting, averaging 64.1 per cent across the bottom ten areas. This compares to 86.7 per cent in the most advantaged areas and 76.8 per cent nationally.

Similar to Queensland, the top ten areas (those with the least disadvantage) have relatively lower average gross income per student values than the top ten areas in Sydney and Melbourne. While the mix of income directed towards these schools is more heavily weighted towards private fees (on average 34%), this is much lower than the share in Sydney and Melbourne, which typically account for around half of the gross income contribution.

The most disadvantaged areas are typically receiving greater amounts of income for each student enrolled in primary and secondary schools, averaging \$23,080 per student, compared to \$14,527 per student in the most advantaged areas.

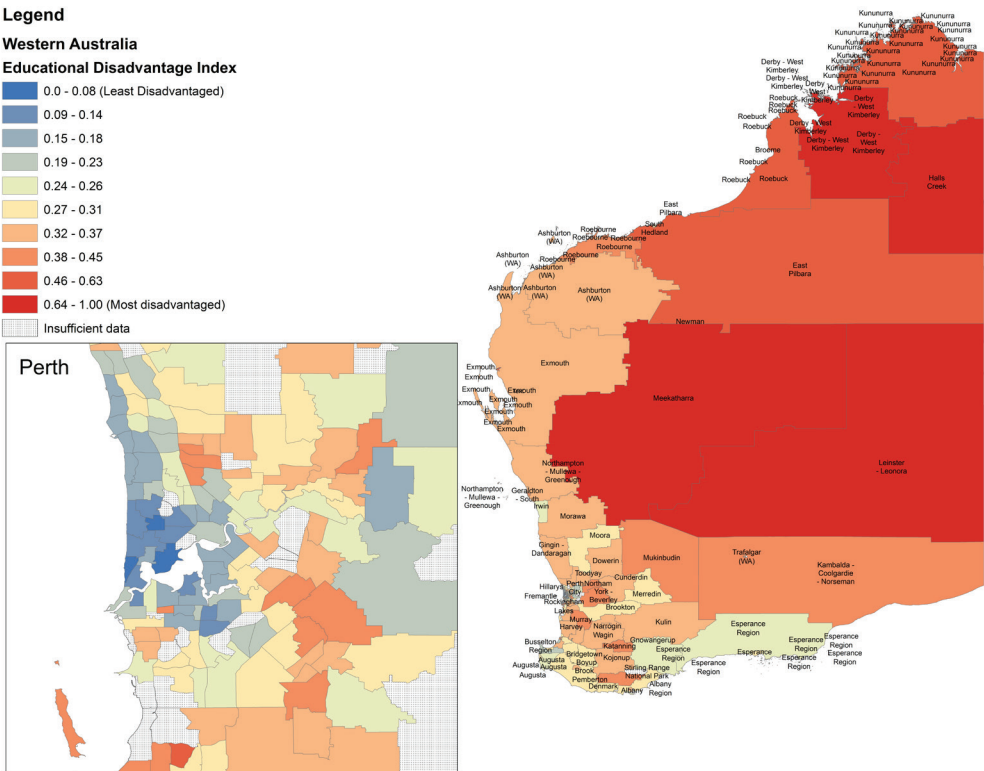
Western Australia

Western Australia is an enormous land mass that largely consists of remote areas with very low populations, and with more than 80 per cent of the State's population located in its capital – Perth. The remote areas across the State typically have the highest level of educational disadvantage, with children living in these areas having less access to pre-school, lower attendance levels and lower performance in literacy and numeracy testing (Figure 48). Many of the remote areas across WA are also characteristically Indigenous communities, which tend to suffer from multiple socio-economic barriers and challenges.

Similar to Brisbane, the most advantaged areas are clustered around the Swan River and nearby Indian Ocean coastline, starting from North Fremantle and extending north to Hillarys. The fringes of the city reveal relatively higher levels of educational disadvantage, from Rockingham and Kwinana in the south, Stirling in the North, along with the Gosnells to the East of the city.

Most advantaged areas in WA are clustered around the Swan River and nearby Indian Ocean coastline, starting from North Fremantle and extending north to Hillarys.

Figure 48 Educational disadvantage in Western Australia



Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions. Data are broken using natural breaks, which classifies the data by maximising the differences between each class.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

Table 15 Top 10 and bottom 10 areas of educational disadvantage: Western Australia

WESTERN AUSTRALIA			EDUCATION ACHIEVEMENT			RESOURCES			SOCIAL AND DEMOGRAPHIC			ACCESS			ECONOMIC		
Local area (SA2)	Share of pre-school <15 hours	Share of vulnerable children on number of AEDC domains	Non attendance rate	Average year 5 NAPLAN scores	Gross income per student	Student - teacher ratio	ATSI share	Language spoken	One parent families	Remoteness (ARIA)	No family internet	Unemp. Rate	Youth engaged				
	%	1+ 2+	%	reading numeracy	\$	%	%	%	%	%	%	%	%				
Top 10																	
1 Floreat	63.5	7.6	3.4	3.5	566	564	\$10,991	18.0	0.2	8.7	5.2	Major City	0.4	2.8	88.1		
2 Claremont (WA)	6.3	11.3	1.4	3.8	556	545	\$25,527	10.8	0.5	11.3	5.3	Major City	1.4	3.7	77.0		
3 City Beach	18.6	8.3	2.8	4.6	565	554	\$17,259	11.7	0.1	10.8	3.7	Major City	0.7	3.1	89.5		
4 Nedlands - Dalkeith - Crawley	22.5	15.5	9.0	4.1	571	549	\$12,630	16.2	0.3	20.5	4.2	Major City	1.3	5.4	90.9		
5 Wembley - West Leederville - Glendalough	29.0	12.8	3.4	4.7	547	552	\$14,678	15.1	0.4	20.5	4.3	Major City	3.2	3.8	84.1		
6 Cottesloe	10.0	14.1	4.7	5.0	536	536	\$11,653	17.2	0.1	6.1	4.6	Major City	1.5	3.4	83.8		
7 Mosman Park - Peppermint Grove	36.3	10.7	2.3	5.5	553	542	\$23,024	11.2	1.3	11.7	5.6	Major City	1.6	4.2	86.0		
8 Winthrop	48.5	10.8	4.6	4.0	546	537	\$9,987	19.6	0.1	35.0	4.8	Major City	-	4.1	90.5		
9 Applecross - Ardross	33.9	13.3	5.8	5.5	545	544	\$12,916	16.0	0.2	18.3	5.5	Major City	1.8	3.9	84.3		
10 Subiaco - Shenton Park	38.2	16.8	8.9	5.2	559	541	\$14,426	15.6	0.5	14.2	4.2	Major City	1.5	3.2	83.0		
AVERAGE - top 10	30.7	12.1	4.6	4.6	555	546	\$15,309	15.1	0.4	15.7	4.7	Major City	1.3	3.8	85.7		
Bottom 10																	
1 Leinster - Leonora	58.1	56.8	40.9	36.3	314	364	\$32,821	9.3	36.9	31.8	13.4	Very Remote	58.2	3.5	34.4		
2 Halls Creek	82.6	69.4	50.0	42.3	382	367	\$28,848	9.6	78.3	48.3	20.8	Very Remote	66.6	12.9	35.1		
3 East Pilbara	72.7	71.0	48.4	35.2	389	399	\$54,077	9.2	21.5	19.9	15.1	Very Remote	74.1	1.8	38.8		
4 Roebuck	81.3	66.7	47.9	40.0	419	420	\$27,982	9.4	66.9	16.6	17.7	Very Remote	60.0	10.0	42.9		
5 Meekatharra	32.0	64.1	41.0	31.2	359	346	\$36,601	8.7	29.0	11.3	11.1	Very Remote	54.3	4.9	38.7		
6 Derby - West Kimberley	51.1	47.8	30.0	29.6	389	409	\$27,824	10.4	48.1	27.3	16.5	Very Remote	62.1	5.0	36.8		
7 Kununurra	35.2	44.7	27.0	26.2	409	408	\$24,655	11.6	34.8	10.0	11.7	Remote	39.1	4.8	51.6		
8 Carnarvon	42.9	30.8	17.9	21.6	427	432	\$19,707	12.6	20.6	10.8	9.0	Remote	24.0	5.4	56.1		
9 Roebourne	69.8	43.4	32.5	18.1	444	450	\$23,394	12.7	18.0	13.5	7.7	Remote	16.2	2.8	55.8		
10 South Hedland	74.4	32.9	19.3	16.2	437	432	\$20,798	13.9	18.8	10.8	7.7	Remote	12.7	4.3	55.3		
AVERAGE - bottom 10	60.0	52.8	35.5	29.7	397	403	\$29,671	10.7	37.3	20.0	13.1	Very Remote	46.7	5.5	44.6		
AVERAGE - AUSTRALIA																	
	32.9	22.4	11.4	7.9	493	487	\$14,346	14.1	3.7	14.7	11.3	8.0	5.7	76.8			

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

Comparing the top and bottom ten areas across WA, the remote and city divide is apparent (Table 15). The most disadvantaged areas are located in remote and very remote areas throughout the State, with Leinster-Leonora ranked first in the bottom ten, followed by Halls Creek, East Pilbara, Roebuck and Meekatharra. These communities have high Indigenous populations, averaging 37.3 per cent and ranging from 18.0 per cent in Roebourne through to 78.3 per cent in Halls Creek. This compares to the most advantaged areas, which are all located in Perth in the immediate areas surrounding the Swan River. These areas have an average 0.4 per cent of the population identifying as Aboriginal or Torres Strait Islander.

Similar to South Australia, children living in the most disadvantaged areas in Western Australia are less likely to be accessing the benchmark of 15 hours of pre-school each week in their year before school, than the national average. Only 40 per cent of children in these areas are attending pre-school for 15 or more hours on average, compared to almost 70 per cent nationally. Children in these areas also have high rates of developmental vulnerabilities, with one in two children assessed as developmentally vulnerable on one or more domain(s) and more than one in three developmentally vulnerable in two or more domains. School non-attendance rates are very high, at around 30 per cent and reaching up to 42 per cent in Halls Creek.

School funding per student is higher than the national average in these areas, reflecting the relative disadvantage and higher cost of delivering services to remote areas. School funding in WA's most disadvantaged areas ranges from \$19,707 per student in Carnarvon up to \$54,077 per student in East Pilbara. This compares to the national average of \$14,346 per student.

The lack of access to services in many of the disadvantaged areas across Western Australia is evident, with a very high proportion of children living in households that do not have access to the internet – 46.7 per cent on average. Unemployment rates are also curiously low in these regions, but the level of young people not engaged in work or in education suggests that many people are simply not within the workforce to be counted in these figures.

Only 40% of children in the most disadvantaged areas in WA are attending pre-school for 15 or more hours on average, compared to almost 70% nationally.

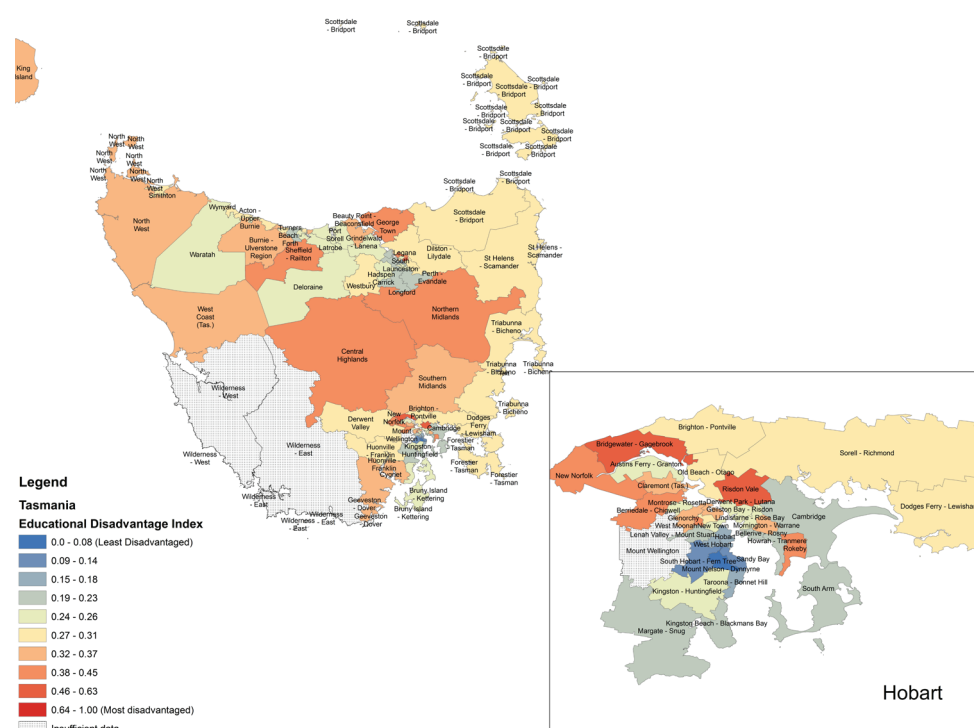
School funding in WA's most disadvantaged areas ranges from \$19,707 per student in Carnarvon up to \$54,077 per student in East Pilbara. This compares to the national average of \$14,346 per student.

Many of the areas within Tasmania have moderate to high levels of educational disadvantage, with more advantaged areas located in the State's capital – Hobart and second largest city – Launceston.

Tasmania

Many of the areas within Tasmania have moderate to high levels of educational disadvantage, with more advantaged areas located in the State's capital – Hobart and second largest city – Launceston (Figure 49). As with most capital cities, clusters of disadvantage appear on the fringes of the city, the further away one lives from water views. The east coast and north-east areas of the island are moderately disadvantaged, with the level of disadvantage increasing the further students live inland and away from the coastal areas.

Figure 49 Educational disadvantage in Tasmania



Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions. Data are broken using natural breaks, which classifies the data by maximising the differences between each class.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

A comparison of the top and bottom ten areas within the State shows a narrower divide between the least and most disadvantaged areas, as observed below (Table 16). The most advantaged areas in the State are very close to the national average in many of the indicators including pre-school access, non-attendance rates, gross income per student and student to teacher ratios. These areas have fewer children living in families where there is a language other than English spoken and fewer single parent families when compared to the national average.

The most disadvantaged areas in Tasmania are characterised by lower rates of children in their year before schooling accessing pre-school for the prescribed 15+ hours each week and higher rates of children that are developmentally vulnerable on one or more or two or more domains – double the national rate and four times the rate of children living in the most advantaged areas in the State.

Literacy and numeracy scores are below that of the national average, but not as far behind as some other areas across Australia. Non-attendance rates are also reasonably good compared to the national average. Access to services is problematic, with almost one in five children living without access to the internet – a resource that is becoming increasingly important in delivering and helping with education. Youth engagement rates are also an issue, at 10 percentage points below the national average and 20 percentage points below that of the most advantaged areas in the State.

Children living in the most disadvantaged areas in Tasmania have double the national rate of children vulnerable in their first year of school on one or more domains.

Access to the internet and youth engagement in either earning or learning are problem areas for Tasmania.

Table 16 Top 10 and bottom 10 areas of educational disadvantage: Tasmania

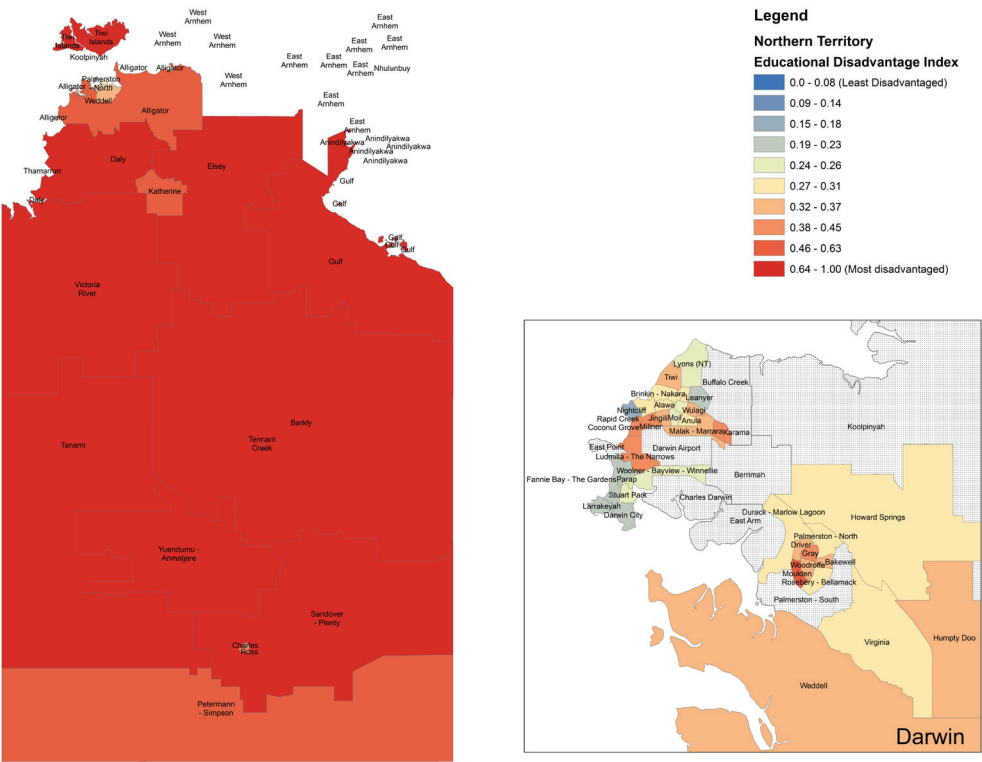
TASMANIA		EDUCATION ACHIEVEMENT				RESOURCES		SOCIAL AND DEMOGRAPHIC			ACCESS		ECONOMIC			
Local area (SA2)		Share of pre-school <15 hours	Share of children vulnerable on number of AEDC domains	Non attendance rate	Average year 5 NAPLAN scores	Gross income per student	Student - teacher ratio	ATSI share	Language spoken	One parent families	Remoteness (ARIA)	No family internet	Unemp. Rate	Youth engaged		
		%	1+ 2+	%	reading numeracy	\$	%	%	%	%	%	%	%	%	%	
		Top 10														
1	Mount Nelson - Dunnyrne	33.9	7.7	0.0	7.0	558	554	\$14,311	14.5	0.9	14.1	6.0	Inner Regional	4.0	5.8	86.1
2	Taroona - Bonnet Hill	34.5	10.8	2.7	8.4	571	528	\$13,065	15.0	0.7	6.3	6.5	Inner Regional	2.2	4.3	88.0
3	West Hobart	21.4	12.5	2.8	5.3	552	540	\$11,688	17.4	1.0	8.1	7.2	Inner Regional	4.0	5.0	82.3
4	Sandy Bay	26.8	16.7	7.8	6.7	546	519	\$17,092	12.7	0.6	20.7	4.0	Inner Regional	2.4	6.2	85.7
5	Hobart	26.3	15.4	7.7	5.3	544	510	\$16,990	11.9	1.2	12.5	4.6	Inner Regional	5.6	5.4	73.7
6	Bellerive - Rosny	34.6	6.6	3.3	7.1	527	512	\$13,092	14.9	1.3	5.1	6.5	Inner Regional	6.3	5.1	79.8
7	Newstead	22.1	10.6	3.0	5.4	527	519	\$17,363	12.2	1.5	4.7	7.5	Inner Regional	4.4	5.6	83.2
8	South Hobart - Fern Tree	48.4	22.5	12.5	7.0	559	543	\$12,790	16.3	1.6	7.9	6.9	Inner Regional	3.9	6.6	83.4
9	Lenah Valley - Mount Stuart	25.2	12.9	5.0	5.8	513	498	\$11,930	16.2	1.5	8.8	7.6	Inner Regional	4.1	3.9	84.3
10	Margate - Snug	59.5	5.8	3.3	7.1	520	498	\$10,704	16.2	4.5	3.3	6.4	Inner Regional	6.5	3.8	84.9
AVERAGE - top 10		33.3	12.2	4.8	6.5	542	522	\$13,902	14.7	1.5	9.2	6.3	Inner Regional	4.3	5.2	83.1
Bottom 10																
1	Ravenswood	46.9	45.3	26.4	9.0	444	452	\$14,656	13.2	7.1	1.8	18.5	Inner Regional	26.8	16.4	56.5
2	Bridgewater - Gagebrook	46.7	35.6	21.9	14.0	434	428	\$15,146	12.2	12.2	1.0	22.6	Inner Regional	24.4	14.7	62.2
3	Risdon Vale	41.1	21.1	10.5	8.0	441	423	\$17,098	14.2	7.9	2.2	15.1	Inner Regional	21.5	8.9	53.9
4	West Coast (Tas.)	37.1	30.6	18.1	9.5	439	437	\$19,951	10.4	6.7	2.5	7.1	Remote	11.6	7.6	60.8
5	Newnham - Mayfield	21.5	27.8	18.3	16.2	450	437	\$14,854	12.6	5.0	7.6	12.2	Inner Regional	17.0	11.7	73.3
6	Geeveston - Dover	60.9	36.6	29.3	9.2	481	489	\$18,249	11.5	9.0	2.3	6.0	Outer Regional	17.6	7.7	70.1
7	Rokeby	29.0	26.0	20.0	10.8	466	453	\$13,579	12.9	7.7	2.4	16.8	Inner Regional	18.8	9.2	62.0
8	Northern Midlands	47.6	31.3	18.8	7.2	483	450	\$15,623	11.7	2.9	1.3	6.4	Outer Regional	12.2	5.4	73.0
9	Glenorchy	31.9	34.6	20.0	10.4	466	472	\$16,354	13.7	5.4	9.4	11.4	Inner Regional	18.0	8.1	70.2
10	Derwent Valley	56.8	42.9	16.7	10.1	443	446	\$15,017	13.1	3.9	1.6	5.7	Inner Regional	16.5	7.3	77.2
AVERAGE - bottom 10		41.9	33.2	20.0	10.4	455	449	\$16,053	12.5	6.8	3.2	12.2	Inner Regional	18.5	9.7	65.9
AVERAGE - AUSTRALIA																
		32.9	22.4	11.4	7.9	493	487	\$14,346	14.1	3.7	14.7	11.3		8.0	5.7	76.8

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

NORTHERN TERRITORY

The Northern Territory is typified by high levels of disadvantage with the level of remoteness and the high proportion of Indigenous communities driving the results seen in Figure 50. Darwin has a greater level of variation when it comes to educational disadvantage, with pockets of advantage being the exception rather than the norm. The more advantaged areas include coastal areas of Darwin such as Fannie Bay, Larrakeyah and Nightcliff, while Ludmilla, Coconut Grove and Malak-Marrara are relatively disadvantaged.

Figure 50 Educational disadvantage in Northern Territory



Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions. Data are broken using natural breaks, which classifies the data by maximising the differences between each class.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

The Northern Territory is typified by very high levels of disadvantage across many of its remote Indigenous communities.

A comparison of the top and bottom ten areas of educational disadvantage in the Northern Territory reveals one of the largest divisions among Australia's states and territories.

Two-thirds of children in the bottom ten areas in the Northern Territory are developmentally vulnerable on one or more domain, and one in two are vulnerable in two or more domains.

A comparison of the top and bottom ten areas of educational disadvantage in the Northern Territory reveals one of the largest divisions among Australia's states and territories (Table 17). The bottom ten areas in the Northern Territory are among the most disadvantaged areas in Australia, with extremely high levels of developmental vulnerability and school non-attendance, and very low performance in literacy and numeracy. In most instances these rates of disadvantage are double, triple and up to four times the national average. On the other hand, the most advantaged areas in the Northern Territory are located in Darwin and typically align very closely to the national Australian average across most indicators.

On average, two-thirds of children in the bottom ten areas in the Northern Territory are developmentally vulnerable on one or more domain(s) and one in two are vulnerable in two or more developmental domains. This reaches up to 65.5 per cent of children living in Tanami, who are developmentally vulnerable on two or more domains. In comparison, only 15 per cent of children in the most advantaged areas in the Northern Territory are vulnerable on one or more domain(s) and 7.5 per cent on two or more domains.

Student non-attendance rates in these bottom ten areas are up to four times that of the Australian average, the highest in Yuendumu – Anmatjere (38.7%). Average NAPLAN scores for Year five pupils in reading are more than 150 points lower than the national average and numeracy scores 125 points lower.

The most disadvantaged areas in the Northern Territory are typically very remote Indigenous communities, with many of these people speaking their native language within the community. Providing services to families and children in these areas is met with a number of barriers and challenges, not least of which is location, but also engaging with families and children in their native dialect.

Table 17 Top 10 and bottom 10 areas of educational disadvantage: Northern Territory

NORTHERN TERRITORY		EDUCATION ACHIEVEMENT				RESOURCES		SOCIAL AND DEMOGRAPHIC			ACCESS		ECONOMIC			
Local area (SA2)		Share of pre-school <15 hours	Share of children on number of AEDC domains		Non attendance rate	Average year 5 NAPLAN scores	Gross income per student	Student - teacher ratio	ATSI share	Language spoken	One parent families	Remoteness (ARIA)	No family internet	Unemp. Rate	Youth engaged	
		%	1+	2+	%	% reading	numeracy	\$	%	%	%	%	%	%	%	
Top 10																
1	Nightcliff	40.4	8.1	2.7	6.5	522	509	\$17,057	10.8	4.8	22.7	6.2	Outer Regional	7.5	4.3	66.8
2	Larrakeyah	23.8	5.3	2.6	7.0	506	503	\$14,203	17.7	2.8	18.2	3.3	Outer Regional	3.5	3.0	74.4
3	Brinkin - Nakara	32.7	16.0	6.0	7.0	526	528	\$12,769	17.0	4.2	37.5	5.6	Outer Regional	6.0	4.2	80.5
4	Stuart Park	46.1	15.0	2.5	11.0	489	485	\$16,608	13.4	3.7	19.6	3.9	Outer Regional	7.1	2.4	72.5
5	Parap	34.4	13.0	10.9	6.0	489	474	\$11,582	18.2	6.1	14.7	5.5	Outer Regional	2.1	2.2	77.3
6	Palmerston - North	29.0	13.0	7.2	7.8	501	481	\$15,251	14.5	6.7	9.2	7.9	Outer Regional	4.1	2.3	80.4
7	Fannie Bay - The Gardens	36.4	21.2	6.1	9.0	482	475	\$15,893	14.5	8.9	16.1	5.1	Outer Regional	4.2	2.6	84.4
8	Durack - Marlow Lagoon	31.0	26.0	12.3	7.4	500	473	\$13,155	15.2	4.8	8.0	4.9	Outer Regional	2.8	2.8	81.9
9	Wanguri	38.2	10.0	5.0	7.4	474	465	\$21,074	10.6	8.9	22.3	7.7	Outer Regional	10.7	3.5	79.0
10	Darwin City	44.4	21.2	14.7	5.0	472	484	\$15,047	18.5	4.7	20.1	2.6	Outer Regional	7.9	3.9	61.9
AVERAGE - top 10		35.6	14.9	7.0	7.4	496	488	\$15,264	15.0	5.6	18.8	5.3	Outer Regional	5.6	3.1	75.9
Bottom 10																
1	Tanami	77.4	79.3	65.5	36.1	315	347	\$22,944	12.1	82.2	78.1	20.3	Very Remote	74.5	15.6	16.2
2	Yuendumu - Anmatjere	100.0	81.4	55.8	38.1	350	353	\$21,589	10.7	86.3	81.3	17.7	Very Remote	83.1	18.1	32.6
3	Barkly	86.5	65.8	50.0	31.0	327	351	\$21,246	10.4	78.7	53.6	16.7	Very Remote	80.6	11.4	33.5
4	Elsley	68.6	75.0	52.3	30.4	331	345	\$18,531	12.1	76.3	69.4	15.8	Very Remote	78.9	15.5	30.7
5	Gulf	79.2	63.4	48.8	31.3	330	353	\$20,183	9.4	84.5	56.0	17.5	Very Remote	75.2	20.2	38.6
6	Daly	77.9	60.4	50.0	22.3	354	384	\$26,524	8.2	65.5	43.5	13.6	Very Remote	72.4	12.0	37.7
7	Tiwi Islands	80.4	60.5	39.5	20.5	340	350	\$30,837	10.0	87.9	79.2	12.5	Remote	83.0	9.1	52.9
8	Victoria River	87.0	63.4	48.8	27.8	364	388	\$25,457	11.1	75.8	61.2	13.5	Very Remote	80.6	6.8	34.3
9	Sandover - Plenty	89.5	54.3	39.1	31.4	354	366	\$21,193	9.1	87.9	58.4	17.7	Remote	89.4	19.2	37.6
10	Tennant Creek	82.6	58.6	51.7	28.4	345	392	\$23,480	11.7	52.1	20.0	13.1	Very Remote	49.2	7.0	41.9
AVERAGE - bottom 10		82.9	66.2	50.2	29.7	341	363	\$23,198	10.5	77.7	60.1	15.8	Very Remote	76.7	13.5	35.6
AVERAGE - AUSTRALIA		32.9	22.4	11.4	7.9	493	487	\$14,346	14.1	3.7	14.7	11.3	8.0	5.7	76.8	

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

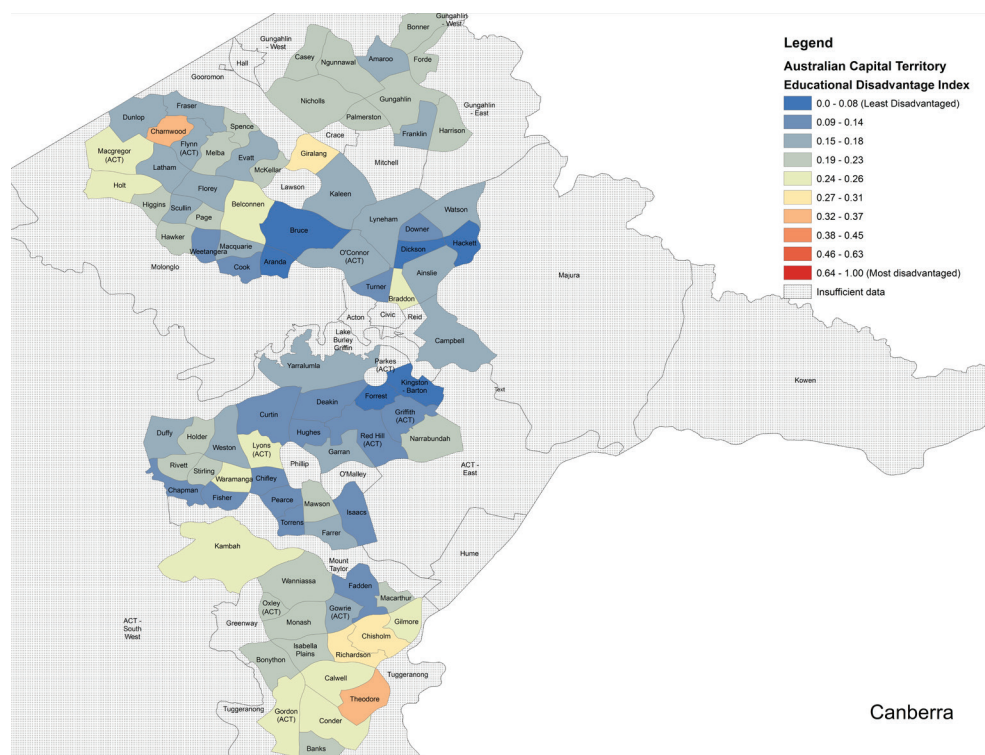
As a stark comparison to the NT, the Australian Capital Territory is consistently characterised as a location with relatively little disadvantage.

Australian Capital Territory

As a stark comparison to the NT, the Australian Capital Territory is consistently characterised as a location with relatively little disadvantage (Figure 51). The population is highly educated and also commands the highest incomes among states and territories. Children in the ACT are also more likely to be attending independent schools and are among the best performers in NAPLAN, with relatively fewer children presenting as developmentally vulnerable. The map of the Australian Capital Territory also demonstrates this consistent pattern of advantage, with very few suburbs that have medium to high disadvantage as measured by the educational disadvantage index.

Charnwood in the City's west stands out as an area with relatively high educational disadvantage, along with Macgregor, Holt, Belconnen and Giralang. In the south of the City a cluster of relatively disadvantaged suburbs are also evident comprising Theodore, Conder, Gordon, Richardson and Chisholm.

Figure 51 Educational disadvantage in Australian Capital Territory



Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions. Data are broken using natural breaks, which classifies the data by maximising the differences between each class.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

Looking more closely at the top and bottom ten areas of educational disadvantage within the ACT, areas of relatively higher educational disadvantage are characterised by lower school performance scores, higher non-attendance rates and higher developmentally vulnerability in comparison to the most advantaged areas in the ACT (Table 18). The bottom ten areas also have higher proportions of Indigenous children, but still relatively low populations compared to the national average. A much higher rate of children in single-parent families are observed in the most disadvantaged areas in the ACT, almost double the rate in the top ten suburbs. The unemployment rate is also slightly higher and so too is the percentage of households who have no access to Internet.

Of interest, is a number of similarities between the top and bottom ten areas within the ACT than what we observe in other states and territories. Very similar proportions of children that have a language other than English background are seen between the bottom and top ten. The proportion of children accessing less than 15 hours of pre-school each week is also similar, around 30 per cent for those in the bottom ten and 27 per cent for those in the top ten, this is in line with the national average of 32.9 per cent. There is quite a degree of variation within both listings. Within the bottom ten, Belconnen records the highest proportion of children receiving less than 15 hours of pre-school each week - 43 per cent, followed by Gordon at 38 per cent. However, Hughes, which is listed in the top ten also has a relatively high proportion of lower access - 37 per cent.

Similarities also exist in comparing gross income per student, with the average dollar amount per student in the top ten very similar (\$14,352) to students in the bottom ten areas (\$15,893). Slightly smaller class sizes exist for children in the bottom ten suburbs in the ACT, with a student to teacher ratio of 12.1 compared to 14.7.

Substantial differences in children presenting as developmentally vulnerable are seen, with children in the bottom ten areas in the ACT twice as likely to be developmentally vulnerable on one or more domain(s) (16.1% compared to 29.8%) and three times as likely to be developmentally vulnerable on two or more domains (4.7% compared to 15.1%). Non-attendance rates for children in the bottom ten areas are double the rate of children in the top ten suburbs - 10.4 per cent compared 5.4 per cent.

A number of similarities can be seen between the top and bottom ten areas within the ACT, including similar proportions of children access pre-school.

Non-attendance rates for children in the bottom ten areas in the ACT are double the rate of children in the top ten suburbs - 10.4 per cent compared 5.4 per cent.

Table 18 Top 10 and bottom 10 areas of educational disadvantage: Australian Capital Territory

AUSTRALIAN CAPITAL TERRITORY		EDUCATION ACHIEVEMENT				RESOURCES		SOCIAL AND DEMOGRAPHIC				ACCESS		ECONOMIC		
Local area (SA2)	Share of pre-school <15 hours	Share of vulnerable children on number of AEDC domains	1 +	2 +	Non attendance rate	Average year 5 NAPLAN scores	Gross income per student	Student - teacher ratio	ATSI share	Language spoken at home	One parent families	Remoteness (ARIA)	No family internet	Unemp. Rate	Youth engaged	
	%	%	%	%	%	reading	\$	%	%	%	%	%	%	%	%	
Top 10																
1 Deakin	21.6	18.2	6.1	6.0	575	539	\$21,841	10.1	0.4	13.0	4.7	Major City	1.5	2.7	87.7	
2 Aranda	24.5	5.7	0.0	5.7	558	536	\$12,761	16.7	0.4	12.0	5.5	Major City	3.3	2.9	82.1	
3 Kingston - Barton	27.0	25.0	2.6	6.0	556	527	\$14,137	12.9	1.9	13.9	3.8	Major City	4.4	2.6	77.1	
4 Weetangera	36.8	3.6	0.0	6.0	518	516	\$12,870	14.5	0.5	15.0	3.8	Major City	2.3	3.4	85.5	
5 Forrest	11.8	25.0	2.6	6.0	525	517	\$11,273	16.3	0.2	15.1	1.7	Major City	-	2.8	89.9	
6 Chapman	28.2	8.3	2.6	6.0	550	518	\$11,609	16.3	0.7	10.1	3.8	Major City	-	2.4	85.8	
7 Garran	34.4	20.0	13.8	5.6	550	526	\$16,063	13.9	0.5	21.7	4.1	Major City	1.7	2.8	93.9	
8 Red Hill (ACT)	20.0	16.7	7.1	5.3	561	539	\$22,336	11.4	1.2	19.6	6.9	Major City	4.7	4.1	89.9	
9 Curtin	28.0	22.2	9.7	5.2	561	522	\$11,480	16.6	1.1	12.1	6.2	Major City	1.3	3.0	86.9	
10 Hughes	37.3	15.8	2.6	3.0	546	513	\$15,417	13.9	0.9	15.3	5.2	Major City	2.7	3.7	80.8	
AVERAGE - top 10		27.0	16.1	4.7	5.5	550	525	\$14,979	14.2	0.8	14.8	4.6	Major City	2.2	3.0	86.0
Bottom 10																
1 Richardson	36.9	40.0	22.5	10.0	426	433	\$17,731	9.8	2.6	12.1	12.8	Major City	6.0	4.9	73.9	
2 Charnwood	30.6	30.4	16.1	7.5	478	463	\$13,101	14.0	3.3	14.6	12.4	Major City	8.5	3.9	73.4	
3 Giralang	27.5	40.0	22.2	7.0	495	467	\$16,350	11.6	1.4	18.3	6.4	Major City	2.8	3.7	78.0	
4 Gilmore	16.0	23.9	9.1	9.0	480	466	\$20,199	9.9	2.7	10.9	12.3	Major City	7.1	3.7	84.2	
5 Belconnen	43.6	43.2	29.5	23.0	527	512	\$15,576	10.4	1.3	30.5	5.8	Major City	9.3	6.2	67.9	
6 Holt	26.8	24.1	10.8	10.8	479	478	\$20,489	10.9	1.9	12.7	8.4	Major City	6.3	3.1	72.7	
7 Gordon (ACT)	38.1	23.4	9.0	8.8	476	453	\$13,321	13.2	2.1	14.4	9.4	Major City	3.6	2.9	81.7	
8 Kambah	20.4	20.7	10.9	8.7	473	466	\$15,926	12.6	2.2	10.5	8.8	Major City	4.7	3.5	80.0	
9 Theodore	31.6	24.5	8.2	9.0	463	470	\$15,171	12.6	2.1	10.2	9.2	Major City	3.8	2.8	85.0	
10 Isabella Plains	31.4	27.9	13.1	9.8	497	481	\$16,059	14.2	2.4	16.5	11.1	Major City	3.0	3.3	82.6	
AVERAGE - bottom 10		30.3	29.8	15.1	10.4	479	469	\$16,392	11.9	2.2	15.1	9.7	Major City	5.5	3.8	77.9
AVERAGE - AUSTRALIA		32.9	22.4	11.4	7.9	493	487	\$14,346	14.1	3.7	14.7	11.3	8.0	5.7	76.8	

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

Summary

The divide between the most and least disadvantaged areas across Australia is a sobering reminder of the level of educational inequality that exists in our community – and worse than this, the inequality that exists for a ‘service’ that is intended to play a role in bridging this gap.

The new BCEC Educational Disadvantage Index highlights not just those common factors that contribute to improved educational outcomes across all state jurisdictions, but also reveals some important differences between and within states and territories in relation to some of the key drivers of educational advantage and disadvantage at a local area level.

Children living in the most remote regions of Australia and on the fringes of state capital cities are more likely to be experiencing high levels of educational disadvantage. This division is particularly noticeable in the Northern Territory, Queensland and Western Australia where the gap between children living in the least and most disadvantaged areas is the widest within these states. In fact, the most disadvantaged 10 per cent of children in the ACT are no more disadvantaged than the most advantaged 10 per cent of children in the NT.

While there are common factors driving the level of disadvantage across regions, there are also points of distinction that need to be understood in order to drive better outcomes for children living in these areas. Some areas are falling short in children in their year before schooling accessing at least 15 hours of pre-school each week, whereas others are struggling more with school attendance and retention and others still with poor access to educational resources such as the internet at home. These area-specific differences invite either different solutions, or, at least, a flexible suite of programs and initiatives that can be weighted differently depending on the local environment and needs base.

Drivers

of educational inequality:
what do we learn?

Drivers of education inequality: what do we learn?

The most disadvantaged areas are more likely to have children attending government schools than independent schools, but almost equally as likely to be attending a Catholic school when compared to those in the least disadvantaged areas.

Using the BCEC Educational Disadvantage Index to rank Australia's local areas nationally, and within states and territories, provides us with a valuable device to capture the relative advantage and disadvantage faced by children in different parts of the country.

By profiling areas at the top and bottom of the rankings list, we gain useful insights into the economic, social, educational and community factors at play in driving educational inequality. The analysis also demonstrates the extent to which such factors vary across states and territories, and in doing so, highlights the potential benefits of a portfolio of policies and measures to narrow the education gap.

Table 19 compares a range of markers of educational access, achievements and outcomes, as well as socio-economic characteristics, between the top and bottom 50 areas ranked according to the Educational Disadvantage Index. The contrasts in Table 19 are striking, and serve to illustrate the divide that exists between the most and least disadvantaged children in Australia.

The most disadvantaged areas are characterised by low educational participation, high rates of developmental vulnerability and risk, lower achievement in national literacy and numeracy testing, poor high school retention rates and lower pre-school and school attendance rates.

The most disadvantaged areas are more likely to have children attending government schools than independent schools, but almost equally as likely to be attending a Catholic school when compared to those in the least disadvantaged areas.

It is instructive to focus further on some of the more important comparisons between the most and least disadvantaged areas in terms of access, achievements and outcomes.

Pre-school and early years

Some of the most pronounced differences between the most and least disadvantaged areas are revealed when comparing the physical, social, emotional, and cognitive development and communications competencies of children according to the five domains in Australian Early Development Census (AEDC). **Four times** the share of children are assessed as vulnerable on at least one AEDC domain in those 50 areas at the greatest educational disadvantage (49.7%) compared with children in the 50 least disadvantage areas (11.9%). This rises to a **sevenfold** difference when looking at the share of children vulnerable on at least two domains (33.5% compared with 4.8%).

More than twice the share of children in the most disadvantaged areas have had no exposure to pre-school education at age 4 (59.4% compared with 26.8%) and nearly a half of children who are in pre-school receive less than 15 hours of care, compared with just over a quarter of children in the least disadvantaged 50 areas.

Table 19 Profiles of top 50 and bottom 50 areas of educational disadvantage: Australia

Indicator	Averages among small areas: by ranking of education index				Ratio to Australia	
	Australia	Top 50	Bottom 50	Difference: bottom vs top	Top 50	Bottom 50
EDUCATION ACHIEVEMENT						
Share of 3yr olds with no preschool education	71.7	48.7	83.8	1.72	0.68	1.17
Share of 4yr olds with no preschool education	43.2	26.8	59.4	2.22	0.62	1.38
Pre-school children with less than 15 hours of care	32.9	25.5	48.7	1.91	0.77	1.48
AEDC - vulnerable on one domain	22.4	11.9	49.7	4.17	0.53	2.22
AEDC - vulnerable on two domains	11.4	4.8	33.5	7.02	0.42	2.94
NAPLAN average score - Reading						
Year 3	420	493	306	0.62	1.17	0.73
Year 5	493	563	399	0.71	1.14	0.81
Year 7	539	597	455	0.76	1.11	0.85
Year 9	573	631	492	0.78	1.10	0.86
NAPLAN average score - Writing						
Year 3	410	461	308	0.67	1.13	0.75
Year 5	471	522	367	0.70	1.11	0.78
Year 7	499	558	370	0.66	1.12	0.74
Year 9	533	601	396	0.66	1.13	0.74
NAPLAN average score - Numeracy						
Year 3	393	459	308	0.67	1.17	0.78
Year 5	487	553	408	0.74	1.13	0.84
Year 7	534	600	463	0.77	1.12	0.87
Year 9	584	654	514	0.79	1.12	0.88
Non-attendance rate	7.9	4.5	22.1	4.86	0.57	2.79
Average student/staff ratio	14.1	14.4	10.7	0.74	1.02	0.76
Average gross income per student (\$)	\$14,346	\$16,396	\$24,069	1.47	1.14	1.68
Share of children in Government schools	73.8	58.5	83.5	1.43	0.79	1.13
Share of children in Catholic schools	15.5	12.3	13.0	1.06	0.79	0.84
Share of children in Independent schools	10.7	29.2	3.5	0.12	2.72	0.32
Share of children not studying at age 16	7.3	0.8	29.5	34.80	0.12	4.06
Share of children not studying at age 17	17.7	2.8	49.4	17.36	0.16	2.79
Share with no post-school qualifications	45.1	29.9	52.7	1.76	0.66	1.17
ACCESS						
Share of families with no internet	8.0	1.3	44.5	35.28	0.16	5.57
Remoteness (1=Major City; 5=Very Remote)	1.7	1.0	4.1	4.14	0.59	2.44
Major City	56%	100%	4%	0.04	1.77	0.07
Inner regional	23%	0%	6%	-	0.00	0.26
Outer regional	15%	0%	14%	-	0.00	0.93
Remote	2%	0%	24%	-	0.00	11.54
Very remote	2%	0%	52%	-	0.00	21.36
ECONOMIC OUTCOMES						
Average unemployment rate	5.7	4.2	9.7	2.31	0.74	1.71
Share of young people not earning or learning	23.2	12.8	49.7	3.89	0.55	2.14
SOCIAL AND DEMOGRAPHIC						
Average age	38.4	39.0	32.1	0.82	1.01	0.84
Average population aged 0-14	4,211	2,861	1,082	0.38	0.68	0.26
Share of population aged 0-14	19.1	17.1	23.5	1.38	0.89	1.23
Share of ATSI in population	3.7	0.2	40.7	183.49	0.06	10.96
Share born overseas	26.8	37.9	18.1	0.48	1.41	0.67
Languages other than English spoken	14.7	21.6	25.3	1.17	1.47	1.73
Share single parents	11.3	7.8	17.1	2.19	0.69	1.52
Share single persons	23.7	24.3	24.8	1.02	1.02	1.05
Share couples, with dependent children	26.5	30.3	26.6	0.88	1.14	1.00
Share couples, with non-dependent children	5.6	5.3	3.8	0.72	0.95	0.68
Share couples, no children	28.1	26.2	22.6	0.86	0.93	0.80
Share other households	4.9	6.1	5.2	0.84	1.24	1.05
Average family size	2.99	3.02	3.26	1.08	1.01	1.09

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions. Averages have been weighted by the population of children aged 0 to 14.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources

Over four times the share of children are assessed as vulnerable on at least one AEDC domain in those 50 areas with the greatest educational disadvantage: 49.7% compared with children in the 50 least disadvantage areas - 11.9%.

Nearly half of young people (49.4%) in the lowest ranked areas are not studying at age 17, compared with 2.5% in areas of least educational disadvantage.

The formula for disbursement of financial resources does appear to be functioning according to needs-based criteria.

Primary and secondary school

Average NAPLAN scores are typically between 150 and 190 points lower among children attending schools in the most educationally disadvantaged areas, compared with the least disadvantaged. The gap in NAPLAN scores between Year 3 to Year 9 narrows to a degree in reading (down from 187 to 139), but remains relatively fixed across year groups in writing and numeracy.

There is a particularly stark difference in non-attendance rates between the most educationally disadvantaged areas and the least. For the most disadvantaged areas, the non-attendance rate stretches to nearly 22.1%. This compares with a non-attendance rate of only 4.5% for schools in areas with the least educational disadvantage.

Nearly half of young people (49.4%) in the lowest ranked areas are not studying at age 17, compared with 2.5% in areas of least educational disadvantage, and less than half (47.3%) complete any type of post-school qualification. Around the same share (49.7%) of young people in the most disadvantaged areas are neither earning or learning. This compares with only 12.8% of young people who are neither working nor studying.

The formula for disbursement of financial resources does appear to be functioning according to needs-based criteria, with those schools in areas of greatest educational disadvantage receiving a gross income \$24,069 per student, some 50% higher than the average of \$16,396 for the top 50 areas. However, there is a huge gulf in access to internet resources available to students to support their learning away from school. Around 44.5% of families in the lowest ranked areas, almost entirely living in very remote areas, have no internet access. At the other end of the scale, virtually all families in the most advantaged areas have the benefit of internet access.

Socio-demographic profiles

Indigenous children suffer by far the most significant inequality in educational disadvantage. Over **two in five** of those children attending schools in the most disadvantaged SA2 areas are from Indigenous communities. This is in stark contrast to school areas of least educational disadvantage, where only **one fifth of one percent** of children are Indigenous.

More than twice the share of single parents (17.1%), and half the share of families born overseas (18.1%), live in areas of greatest educational disadvantage compared with the least disadvantaged areas (at 7.8% and 37.9% respectively). It is also noticeable that the share of the local area population aged 0 to 14 is larger in areas of greatest disadvantage, at nearly one quarter of the full local population 23.5 per cent, compared to 17 per cent in the least disadvantaged areas. This may be indicative of resourcing pressures in areas with a larger share of school-aged children.

To explore further the variation in school income per student across different local areas, Table 20 looks at how the level of (Federal and State) government income (shown in panel a), and the level of gross income per student (panel b) varies by

the share of children in the local population, both overall and at different levels of remoteness. Areas with the largest child populations, regardless of their location, will typically receive lower average gross income per student than areas with smaller populations. This divide is particularly evident among remote areas of Australia. Remote or very remote areas with more than a quarter of the population aged 0 to 14 receive 28 per cent less per student in government funding, and 26 per cent less in total gross funding than remote areas with child populations of less than 15 per cent.

Table 20 Average income per student: by child population share and remoteness

(a) Federal and State government income per student

Share of children in local population	Remoteness of area				Total
	Major City	Inner Regional	Outer Regional	Remote/ Very Remote	
0% to 15%	9,527	11,714	11,989	30,747	9,920
15% to 20%	10,244	11,977	13,963	24,077	11,009
20% to 25%	10,460	11,609	14,163	19,155	11,553
more than 25%	10,021	10,598	12,642	22,276	11,155
Total	10,223	11,752	13,897	21,004	11,143
<i>Perc. difference (largest vs smallest share)</i>	+5%	-10%	+5%	-28%	+12%

(b) Total gross income per student

Share of children in local population	Remoteness of area				Total
	Major City	Inner Regional	Outer Regional	Remote/ Very Remote	
0% to 15%	14,817	13,522	14,406	31,519	14,838
15% to 20%	12,956	13,424	15,002	25,136	13,325
20% to 25%	12,272	12,981	15,332	20,233	13,146
more than 25%	11,818	12,024	13,957	23,222	12,821
Total	12,803	13,172	15,061	22,041	13,325
<i>Perc. difference (largest vs smallest share)</i>	-20%	-11%	-3%	-26%	-14%

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions. Averages have been weighted by the population of children aged 0 to 14.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from ACARA and National Regional Profile data.

Indigenous children suffer by far the most significant inequality in educational disadvantage.

Remote or very remote areas with more than a quarter of the population aged 0 to 14 receive 28 per cent less per student in government funding, and 26 per cent less in total gross funding than remote areas with child populations of less than 15 per cent.

How much do educational outcomes vary by level of disadvantage?

Governments and education providers should be concerned not just with the *level* of educational outcomes across areas of different educational disadvantage, but also the *variation* in outcomes.

Governments and education providers should be concerned not just with the level of educational outcomes across areas of different educational disadvantage, but also the *variation* in outcomes. A high degree of inequality in educational outcomes can be divisive to a community, affect student motivation and engagement, and lower the economic and social benefits that would otherwise accrue by raising educational outcomes at all levels.

In Figure 52 we first divide SA2 local areas into five quintiles according to the overall level of educational disadvantage, from greatest to least, and then illustrate the distributions of key education outcomes within each group using the box and whisker plots.

Panel (a) of Figure 52 shows an extremely strong negative association between the average (SA2) share of 4 year olds in some form of pre-school education, and the level of local area educational disadvantage. The typical (median) share of 4 year old children enrolled in pre-school (the vertical line in the middle of the lowest yellow box) is nearly 71 per cent in the least educationally disadvantaged SA2 areas, but only 44 per cent in the most disadvantaged areas.

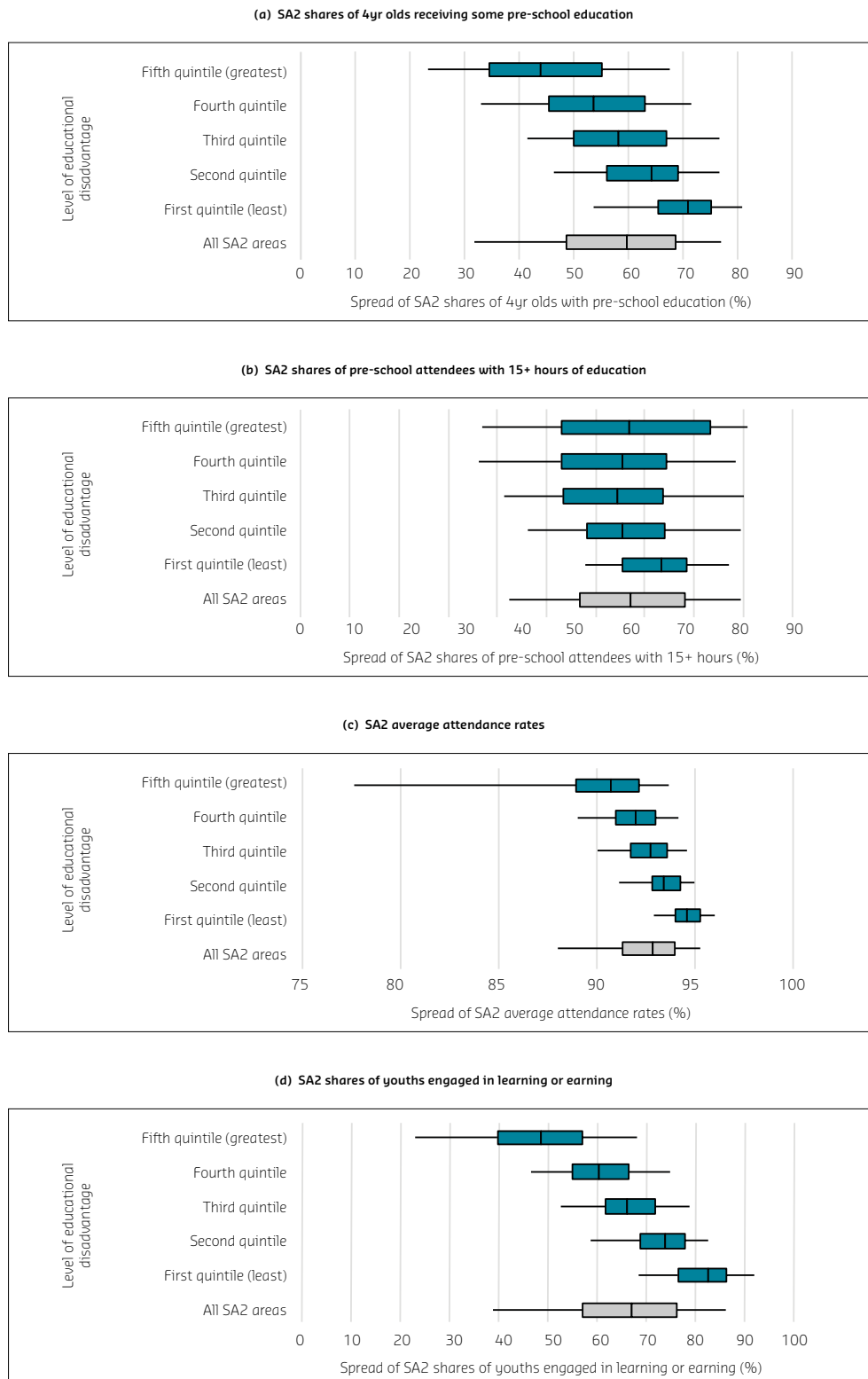
Moreover, the *variation* in the average share of 4 year olds in pre-school education is far greater among SA2 areas with the most disadvantage. Shares range between 34 per cent and 55 per cent for the middle half of SA2s in the most disadvantaged category (the *inter-quartile* range). This compares with a much tighter distribution of shares of 4 year olds in pre-school in the least disadvantaged local areas, ranging from 66 per cent to 75 per cent among the middle half of shares.

Typically, nearly three quarters (74%) of pre-school attendees receive an average of at least 15 hours of education in areas of least disadvantage (panel b of Figure 52). This median share is some 10 percentage points higher than the medians among areas at other levels of educational disadvantage. The variation in the share of pre-school children with 15 or more hours is also far broader within areas of greatest disadvantage – between 54 per cent to 83 per cent for the middle half of SA2s.

The typical SA2 average attendance rate is higher (94.7%) and the spread of average SA2 attendance rates is tighter (94% to 95%) for those areas of least disadvantage, as shown in Panel (c) of Figure 52. In contrast, there is a far wider spread of attendance rates among SA2s at greatest educational disadvantage. The middle half of attendance rates are between 89 per cent and 92 per cent in these areas, with 5 per cent of SA2s having attendance rates below 77% (as shown by the length of the line extending beyond the lower limit of the box chart).

So too do we see a striking negative association between educational disadvantage and the share of young people engaged in some form of learning or earning. Panel (d) of Figure 52 contrasts a typical SA2 average youth engagement rate of 86 per cent in the least disadvantaged areas with a far lower rate of 69 per cent in the most disadvantaged areas. In these latter areas, the middle half of SA2s show engagement rates of between 65 and 73 percent, with 5 per cent of areas facing youth engagement rates of less than 57 per cent.

These graphs reveal significant inequality in educational outcomes across SA2 areas, but serve also to highlight the latent economic and social benefits from improving engagement through increased attendance rates, as well as improving the quality of engagement whilst at school.

Figure 52 Distribution of SA2 average educational outcomes: by quintile of educational disadvantage

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions. Estimates are weighted by the number of children in each SA2.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources.

How much does school income per student vary by level of disadvantage?

We saw earlier how schools can benefit from different - and multiple - sources of income, from Federal and State government funding to private fee income. Figure 2 shows how school funding compares (and varies) by local area educational disadvantage, both by component sources and in terms of overall gross school income.

Looking first at the component sources of income received by schools, and particularly how public and private funding varies between schools according to the degree of educational disadvantage, reveals some important insights – particularly in the context of current debates on changes to need-based school funding under the Gonski 2.0 proposals.

Federal government funding per student is distributed relatively evenly on average to SA2 localities at different levels of educational disadvantage (panel b in Figure 2). The least disadvantaged fifth of SA2 areas typically receive funding of \$2,900 per student from the Federal government, compared to around \$3,500 - around 20% more - among areas at greatest educational disadvantage. The spread of Federal funding directed towards areas with the greatest need is a little wider, up to an average of \$6,900 in income per student. This is around 30% more than the highest average payments of \$5,300 per student for those areas at least disadvantage.

The story is somewhat different when we look at the distribution of State government funding (panel c in Figure 2). Our analysis shows a clear pattern of higher state government funding targeted towards schools at greater educational disadvantage. State government funding per student rises by just over 50% according to average local area needs, from \$6,000 in areas at least disadvantage to \$9,100 in areas of greatest need.

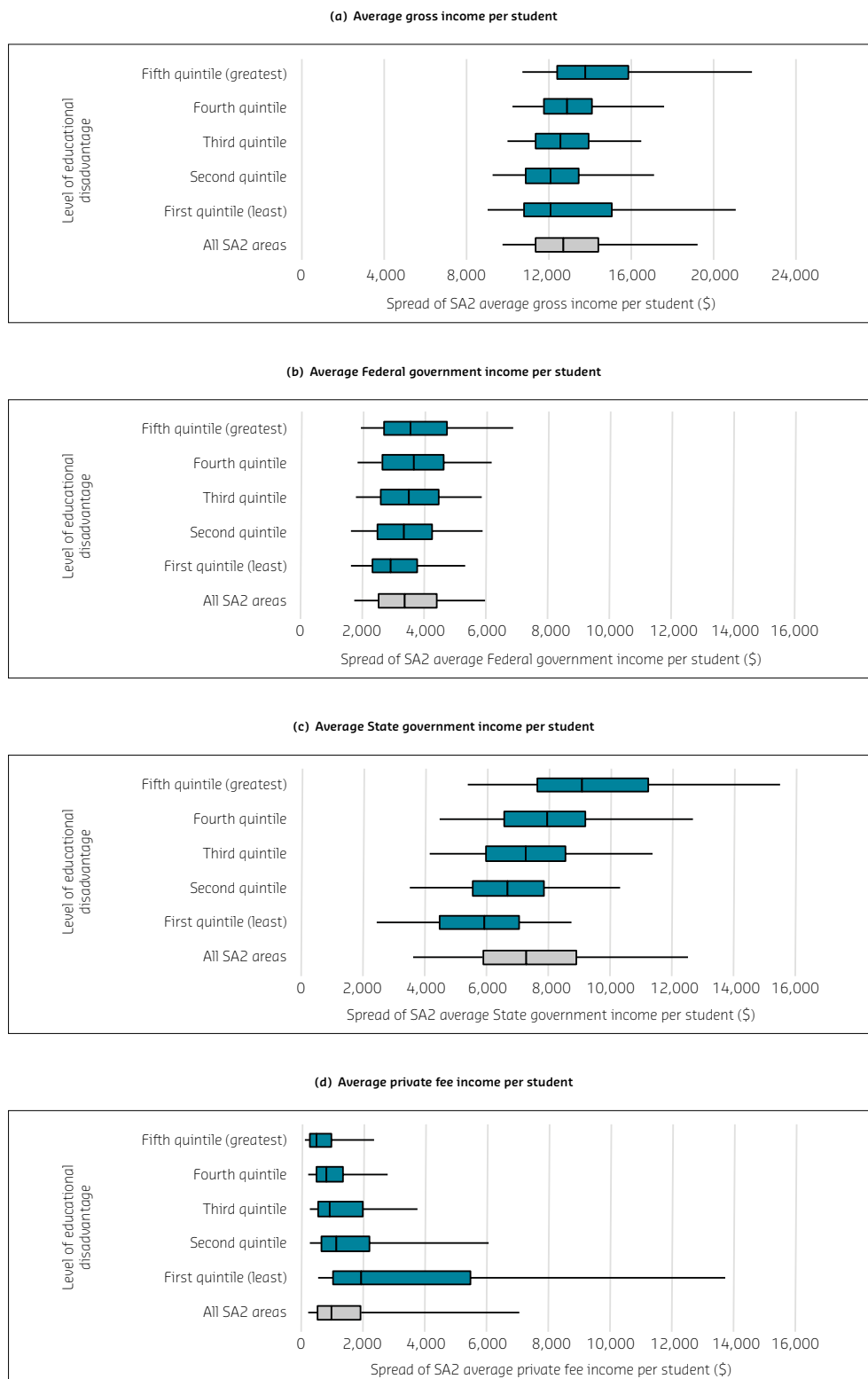
The spread of State government funding also rises substantially across SA2 areas depending on the level of educational disadvantage. Local areas at least educational disadvantage receive state government funding of between \$2,400 and \$8,800 per student on average – a spread of \$6,400. In comparison, SA2 areas at greatest disadvantage receive a far wider spread of funding from state and territory governments, from \$5,400 to \$15,600.

This suggests that the needs-based funding formulae currently in place for the majority of state jurisdictions appear to be directed towards areas at greatest educational disadvantage.

As expected, private fee income (panel d) is heavily skewed toward areas of least educational disadvantage. Private funding per student can extend to a local area average of \$13,800 in areas with higher share of fee-paying schools in the Catholic and independent sectors.

Interestingly, when component sources are added together, the distribution of overall gross incomes across SA2s reveals that the typical income per student rise gradually - but only slightly - with the level of disadvantage, from a median of \$12,000 per student in the least disadvantaged areas to \$13,800 in areas of greatest disadvantage. This translates to a difference of around 15%.

However, the upper ranges of gross income per student within each educational disadvantage group are more U-shaped, with the top 25% of gross incomes per student exceeding \$15,000 both in areas of least and most disadvantage, but at most \$14,000 in areas with other levels of disadvantage. This U-shaped pattern is driven by the counter-acting influence of state government funding (panel c in Figure 53) and private fee income (panel d).

Figure 53 Distribution of SA2 average income per student: by quintile of educational disadvantage

Note: The Statistical Area level 2 (SA2) classification has been used as the spatial unit to assess educational disadvantage across Australian regions. Estimates are weighted by the number of children in each SA2.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' calculations from numerous data sources.

Summary

This chapter of the report has focussed on some of the key drivers of educational disadvantage at a local area level in Australia. Using the new BCEC Educational Disadvantage index to profile local areas at greatest and least educational disadvantage, we have been able to gain some important insights into the economic, social, educational and environmental factors that contribute to educational inequalities both between and within states and regions.

The widening gap between the most and least educationally disadvantaged often starts at the earliest point on a child's educational journey, in the transition from pre-school through to the first years in primary education. Compared to the most advantaged areas of Australia, children in the fifty areas of greatest educational disadvantage are half as likely to be enrolled in pre-school at age 4, half as likely to attend pre-school for 15 hours or more, and up to seven times as likely to be vulnerable on two or more developmental domains in their first year of schooling.

Following the transition to secondary school, the findings in this section of the report shows that the most disadvantaged areas are characterised by low participation in schooling and lower attendance and retention rates. The most disadvantaged areas are also more likely to have children attending government schools than independent schools, but almost equally as likely to be attending a Catholic school when compared to those in the least disadvantaged areas. The findings show that the most disadvantaged students are averaging half the NAPLAN scores in reading, writing and numeracy than those in the least disadvantaged areas.

The gap between the most and least educationally disadvantaged areas is a sobering reminder that inequalities still exists in Australia society.

Government funding appears to be targeted towards areas at greatest educational disadvantage, with schools in areas of greatest educational disadvantage receiving a total of \$24,100 per student in funding from public and private sources, some 50% more than the average of \$16,400 per student among the 50 areas at least disadvantage. Yet significant disparities still remain.

This demonstrates the need for education policies to go far beyond funding reform, by addressing the complex barriers that impede our most vulnerable children during the course of their education journey.

Reform of the current needs-based school funding system under the Gonski 2.0 proposals is a topic of live and current debate. The debate relates both to funding adequacy, and the degree to which funding is distributed effectively between schools according to needs-based criteria.

However this debate is resolved, what is clear from these findings is that funding alone will not provide the solution to narrowing the education gap in Australia. Many factors go towards delivering strong educational outcomes beyond the resources channelled to schools, from the development of teachers' talents, the promotion of innovation in the delivery of education, and a school culture that balances NAPLAN achievements within broader educational outcomes.

Summary

and Discussion

Summary and Discussion

“Education is the most powerful weapon which you can use to change the world.” Nelson Mandela

Education is a fundamental human right, acknowledged as essential to the advancement of society and as a means by which people raise themselves out of disadvantage. As a result, the right to education is something that should be available equally and without discrimination to all people, regardless of race, gender, background or location.

The Rudd/Gillard government introduced a suite of reforms as part of their education revolution when Labor came to power in 2007. These broad-sweeping reforms incorporated reviews into school funding and access to higher education; the introduction of national standardised testing in literacy and numeracy; universal access to pre-school for children in their year before schooling; a national census to assess child development in the first year of schooling; and expanded access to higher education. These path-breaking reforms have been influential in broadening access to education, and improving outcomes for students and particular equity groups on a number of criteria across the full education life-course.

Yet work remains to ensure that this progress continues.

This fifth report in the Bankwest Curtin Economics Centre’s Focus on the States is motivated by a desire to better understand the education journey taken by our children, to explore the degree to which improvements in education outcomes are evenly distributed across the full range of equity groups, and to support effective policy development on an issue of central importance to Australia.

The analysis in the report makes it clear that many of today’s young children will not receive a ‘fair go’ in accessing education opportunities, for no other reasons than family background, demographic characteristics and geography.

A child from low socio-economic background is up to three times more likely to be developmentally vulnerable by the time she or he starts primary school. An Indigenous child is 40% less likely to finish high school and 60% less likely to go to university compared with a non-Indigenous child. A child born in remote Australia is only a third as likely to go to university as a child born in a major city.

This report is motivated by a desire to better understand the basis for these inequities, and provide signposts to possible solutions that could contribute to narrowing the education gap.

Early Childhood Education

It has long been recognised that the early years of a child’s life can play a big part in influencing future outcomes and pre-school is the point on the education journey where we can be making a big difference. Quality pre-school programs help provide children with the learning foundations and skills that they need to enter their first year of schooling and are closely associated with better developmental and learning outcomes in the first few years of schooling. The over-arching message is: Get early years education right, and future outcomes are fundamentally improved.

There have been significant improvements during the last five years in access to pre-school education under the National Partnership Agreement, with a target for all Australian children in the year before full-time schooling to access 15 hours of pre-school each week. Around three quarters of those enrolled in a pre-school program now attend for at least 15 hours each week in the year before full-time school, up from two thirds in 2013.

Yet inequalities emerge even when children are seeking to take the first steps on their education journey. The share of pre-school enrolments is substantially lower than should be the case for children in remote areas of Australia, for those from a low socio-economic background, and for those from a non-English speaking background.

The level of developmental vulnerability is concerning for a number of equity groups, and for those that are not always considered to be disadvantaged; boys, who are twice as likely to be developmentally vulnerable in their first year of schooling and typically perform worse than girls as they progress through the schooling system.

The widening gap in developmental vulnerabilities between the least and most disadvantaged children over time is concerning. More needs to be done to ensure those that are in most need of early childhood education are accessing at least the prescribed 15 hours of pre-school each week and that other additional assistance to special needs groups is provided.

Primary and Secondary School

Primary and secondary school education continues to build on the foundation of early childhood education, providing the necessary knowledge and skills that are considered essential to a young person's development and future participation in the community and labour force. Key policies have been introduced in order to enhance participation and performance during the schooling years, including raising the school minimum leaving age, the introduction of national standardised performance testing, a greater emphasis on early childhood education and a more targeted needs-based funding model. As a result, improvements in a number of indicators can be seen, including greater enrolment and attendance rates and more young people going on to complete year 12 than ever before.

Notwithstanding the progress achieved in extending school participation and retention there is clear evidence that engagement is not equal across equity groups. One of the most concerning findings in this report is the degree to which school attendance rates and participation in NAPLAN testing drop off among equity groups as they transition from primary to secondary school.

The transition from primary school to secondary school is often challenging for young people, but clearly more so for Indigenous students and, to a lesser extent, young people from lower socio-economic backgrounds and those living in regional and remote areas of Australia. While this is a concern, it also presents an opportunity for policy interventions to make a real difference to the educational outcomes for these young people.

Differences among equity groups between states and territories drive optimism that specific programs and policy initiatives can make a real difference to student engagement, especially when we see that attendance rates have improved over time for those equity groups in specific state jurisdictions. But they also reveal the greater challenges that some states face from the compounding effects of multiple vulnerabilities and disadvantages. For example, the gap in secondary school attendance rates between Indigenous and non-Indigenous students is far wider in very remote areas of Australia, by some 33 percentage points, than in major cities (at 10 percentage points). This means that challenge to raise Indigenous engagement in school is far more acute in Western Australia, Queensland and the Northern Territory than in other jurisdictions.

Higher Education

Participation in higher education has been rising rapidly in Australia, both from a longer-term historical perspective and more recently with the introduction of the demand-driven funding system.

A number of equity groups face substantial barriers to participation, most notably Indigenous Australians, those from regional and remote Australia and persons from low SES backgrounds. For Indigenous students these barriers to entry are compounded by lower pass rates. However, for Indigenous students and other equity groups generally, it is the factors that inhibit entry to, and retention at, university that most need to be addressed to promote higher attainment of tertiary qualifications - it is not a matter of differences in academic performance given commencement of a degree.

The findings in this report also confirm that students from regional areas are less likely to follow the traditional pathway directly from high school to university. We are seeing a greater share of university enrolments now coming from non-traditional pathways, and success rates once in tertiary education are at least comparable.

Outreach programs have an important role to play to build a positive impression of higher education pathways and broaden university access among students from less advantaged backgrounds. However, the use of outreach programs is *ad hoc* rather than coordinated, and there is scope for a more systematic outreach strategy across the national schools network, supported through partnerships between schools, universities and government sectors, to ensure that particular schools and students don't fall through the gaps.

There is manifestly an important role for targeted scholarships, and appropriate funding arrangements, to overcome financial barriers to access especially among those in regional areas, those from low SES backgrounds and those who may not have the benefit of family wealth to support their participation.

Reducing inequality in educational opportunity requires effective school outreach and engagement strategies to raise aspirations among those without family traditions of access to further and higher education, and to extend educational opportunities to those equity groups that face challenges, financial barriers to access and other forms of disadvantage. Such outreach programs should also promote greater gender balance in accessing STEM and other subjects that lead to higher earning professional careers.

Geographic Divide

The divide between the most and least disadvantaged areas across Australia is a sobering reminder of the level of inequality that exists in our community – and worse than this, the inequality that exists for a ‘service’ that is intended to play a role in bridging this gap – education.

The new *BCEC Educational Disadvantage Index* launched in this *Focus on the States* report provides us with some important insights into those common factors that contribute to improved educational outcomes across all state jurisdictions, but also reveals some important differences between and within states and territories on the key drivers of educational advantage and disadvantage at a local area level. The index is based on a collection of indicators related to access, performance and outcomes at each stage of the education journey from pre-school through to primary, secondary school and beyond. This composite structure provides us with a powerful tool through which to profile ‘hotspots’ of educational advantage and disadvantage.

Unsurprisingly, the majority of the most educationally advantaged areas in Australia are located in the more affluent suburbs of Sydney and Melbourne. The profiles for these localities show a combination of higher engagement in pre-school, low rates of developmental vulnerabilities of children on entry to primary school, high attendance rates and NAPLAN achievements, high youth engagement and low overall unemployment.

In contrast, the most disadvantaged areas are located in remote regions of South Australia, Western Australia and the Northern Territory, and for almost all, a very high Indigenous population share. These localities combine low rates of pre-school enrolment, with few attending for 15 hours per week or more. Rates of developmental vulnerability, school non-attendance and unemployment are high, and NAPLAN achievement and youth engagement are low.

Compared to the most advantaged localities in Australia, children in those fifty areas at greatest educational disadvantage are, on average, half as likely to be enrolled in pre-school at age 4, half as likely to attend pre-school for 15 hours or more, and **seven times** as likely to be vulnerable on two or more developmental domains. Non-attendance rates are nearly five times as high, at 22%, in areas at greatest disadvantage compared to areas at least disadvantage, and nearly half of young people in areas of greatest need are neither learning nor earning.

Resources do vary according to educational disadvantage, with gross school income per student 50% higher on average, at \$24,000 per student, in areas at greatest need, but this greater quantum commonly weighs against multiple challenges. The BCEC Educational Disadvantage Index highlights that drivers often co-exist in combination for those areas at greatest disadvantage – especially for Indigenous communities in remote areas, with multiple challenges of high unemployment, low youth engagement and low socio-economic background,

School Funding and Need

Reform of the needs-based school funding system under the Gonski 2.0 proposals is a topic of live and current debate. The current debate relates both to funding adequacy, and the degree to which funding is distributed effectively between schools according to needs-based criteria.

So how does this *Focus on the States* report inform the current funding debate?

Our research shows a clear pattern of higher funding from state governments directed towards schools at greater educational disadvantage. Average State government funding per student rises by just over 50%, from a typical \$6,000 in areas at least disadvantage to \$9,100 in areas of greatest disadvantage. However, it is important to note also the wide spread of state government funding to areas at greatest need, up to an SA2 average of \$15,600 for the highest funded localities.

Federal government funding distributes resources more evenly to schools relative to their level of disadvantage, but is nevertheless also targeted to some degree on the basis of needs. Taken together, the combination of Federal and State funding does look to vary according to needs-based criteria.

What is absent from the current debate on needs-based funding is a clear understanding of the extent to which the funding changes being proposed under Gonski 2.0 would lead to improvements in educational outcomes. The current student-based school funding formula does allocate resources according to the needs of different equity groups. One of the unanswered questions in the current conversation is the extent to which funding reforms will lead to improved access, performance and achievement across schools. This is a challenging question to answer, especially when set in context of the changing environment within which educators operate.

But whatever the outcome of this debate, the complex challenge to improve education outcomes for all students cannot be addressed simply by 'throwing funding at the issue'. Many factors go towards delivering strong educational outcomes beyond the intrinsic abilities of students, and the resources of their schools. These include the development of teachers' talents as educators, a stable and supportive class environment, a positive school culture that encourages innovation and balances formal NAPLAN and ATAR achievements within a broader education environment.

There are some key points in the education journey where issues emerge, and where we need better approaches and policy responses to make transitions easier. These include:

- Early intervention and outreach programs to expand access to pre-school education and care, making sure every child is receiving at least 15 hours a week in their year before full-time schooling.
- Increased resources and investment to support the first few years of schooling, effectively targeted towards equity groups at most need, and supported by appropriate metrics by which success in students' outcomes and achievements can be measured.

- Strategies to promote improved school attendance and student engagement, with a particular focus on the transition period between primary to secondary school.
- An expansion of programs and initiatives that drive greater school engagement among Indigenous students, both for early years and in primary and secondary school.
- Local community involvement in schools, and a school culture founded on a positive recognition of Indigenous students' needs, capabilities and identities.
- More universal and coordinated outreach programs to target increased access to higher education for equity groups, especially with reach into remote and very remote Australia.
- Support for more flexible pathways into higher education to broaden access among prospective student who don't take a traditional route from secondary to tertiary education.
- Community level responses to community-specific challenges.

In building an education future for Australian children, it is clear that 'more of the same' will not achieve the outcomes to broaden access, raise levels of achievements, and ensure students' attendance to see them through their education journey.

To achieve greater engagement, it is essential that the education sector innovates through the development of flexible learning environments that cater for different preferences and learning styles, absorbing new technologies that add to the education experience and building regional, national and global connectivity between schools.

No single service or stakeholder should bear the full responsibility for reducing the equity gap in educational opportunity. Alongside students, their teachers and the schools that provide their education, the role of parents and families, communities, and the business sector cannot be understated.

Glossary

and Technical Notes

Glossary and Technical Notes

AEDC Scores

For each domain, an AEDC domain score is calculated by combining together information on the specific domain items, provided that each child has 75 per cent or more of these items completed. For each of the five AEDC domains, children receive a score between zero and ten, where zero is most developmentally vulnerable.⁶ The three Domain Indicator categories, and associated 'cut-off' scores are outlined in Table 2. The cut-off scores used in 2009 have remained the same across each collection cycle to provide a reference point against which later AEDC results can be compared.

Source: AEDC (2015) Australian Early Development Census National Report 2015: A Snapshot of Early Childhood Development in Australia.

AEDC Language Background Other than English

Language background other than English (LBOTE) Children are considered 'LBOTE' if they speak a language other than English at home, or if they speak English at home but are still considered to have ESL status. Indigenous children who have LBOTE status are part of the LBOTE group. For example, it is possible for children to be both Indigenous and have LBOTE status.

Source: AEDC (2015) Australian Early Development Census National Report 2015: A Snapshot of Early Childhood Development in Australia

AEDC Socio-Economic Indexes for Areas (SEIFA)

The AEDC classifies socio-economic status according to the Socio-Economic Indexes for Areas (SEIFA), developed by the Australian Bureau of Statistics (ABS). They are a set of measures, derived from Census information, that summarise different aspects of socioeconomic conditions in an area. The Index for Relative Socio-Economic Disadvantage, which is used in AEDC results, looks at Census information that reflects disadvantage such as low income, low educational attainment, high unemployment, and jobs in relatively unskilled occupations. Every geographical area in Australia is given a SEIFA score that ranks the disadvantage of an area, compared with other areas in Australia.

Source: AEDC (2015) Australian Early Development Census National Report 2015: A Snapshot of Early Childhood Development in Australia

Exempt Students - NAPLAN

Exempt students are not assessed and are deemed not to have met the national minimum standard. Students with a language background other than English, who arrived from overseas less than a year before the tests, and students with significant intellectual disabilities or co-existing conditions may be exempted from NAP testing.

Source: <http://www.nap.edu.au/information/glossary#e>

⁶ The Australian Government has licenced the domain score calculation methodologies from the Offord Centre of Child Studies at www.offordcentre.com operating through McMaster University in Canada. These calculation methodologies are the intellectual property of McMasters and are not available to the public. The Domain scores are population based measure of children's development and have not been psychometrically tested for application in relation to individual children.

Withdrawn Students - NAPLAN

Students may be withdrawn from the testing program by their parent/carer. Withdrawals are intended to address issues such as religious beliefs and philosophical objections to testing.

Source: <http://www.nap.edu.au/information/glossary#e>

Absent Students - NAPLAN

Absent students are students who did not sit the tests because they were not present at school when the test was administered or were unable to sit the test as a result of an accident or mishap.

Source: <http://www.nap.edu.au/information/glossary#e>

Remoteness Structure

The Remoteness Structure is a geographic classification designed by the ABS in the Australian Statistical Geography Standard (ABS Cat. No. 1270.0.55.005). The concept of remoteness is an important dimension of policy development in Australia. The provision of many government services are influenced by the typically long distances that people are required to travel outside the major metropolitan areas.

Remoteness Area classifies areas sharing common characteristics of remoteness into six broad geographical regions. The remoteness of a point is measured by its physical distance by road to the nearest urban centre. As remoteness is measured nationally, not all Remoteness Areas are represented in each state or territory. The six Remoteness Areas are: Major Cities of Australia; Inner Regional Australia; Outer Regional Australia; Remote Australia; Very Remote.

The five Remoteness Areas are:

1. Major Cities – relatively unrestricted accessibility to a wide range of goods and services and opportunities for social interaction.
2. Inner Regional – some restrictions to accessibility of some goods, services and opportunities for social interaction.
3. Outer Regional – significantly restricted accessibility of goods, services and opportunities for social interaction.
4. Remote – very restricted accessibility of goods, services and opportunities for social interaction.
5. Very Remote – very little accessibility of goods, services and opportunities for social interaction.

State-specific year before full-time schooling (YBFS)

The state-specific year before full-time schooling (YBFS) population is made up of an age range of children specific to each state based on that state's preschool and school starting age provisions.

Source: 4240.0 - Preschool Education, Australia, 2016

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