

# Unfinished business: PISA shows Indigenous youth are being left behind

**Tony Dreise and Sue Thomson**

Australian Council for Educational Research

The latest international assessment of students' mathematical, scientific and reading literacy – the Programme for International Student Assessment (PISA) – shows that the gap between Indigenous and non-Indigenous students has remained the same for the last decade. In short, Indigenous 15-year-olds remain approximately two-and-a-half years behind their non-Indigenous peers in schooling.

This essay provides a précis of the results and analysis of some of the issues; it compares Indigenous performance in 2012 with that from previous PISA cycles; and discusses a range of implications for policy and practice.

## Background

Every three years Australian students participate in PISA. PISA measures the mathematical, scientific and reading literacy performance of approximately half a million 15-year-olds from around the globe. The Australian Council for Educational Research (ACER) has managed the international delivery of PISA from its inception to the 2012 survey, and also coordinates Australia's participation. In 2012, around 14 500 Australian youth participated in the survey including 1991 Indigenous students from across urban, regional and remote settings.

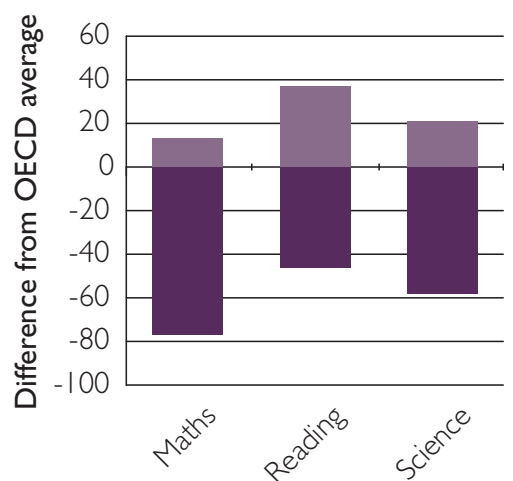
## Indigenous results in 2012

The 2012 PISA results from an Indigenous perspective are deeply concerning. In mathematical literacy, the data indicate that Indigenous students are more than a two-and-a-half years behind their non-Indigenous peers. In scientific literacy, the difference of 84 score points equates to about two-and-a-half years of schooling. And in reading literacy, the gap of 87 points equates to two-and-a-half years. The figure on the right illustrates the gaps between Indigenous students and non-Indigenous Australian students compared to the average for students across OECD countries.

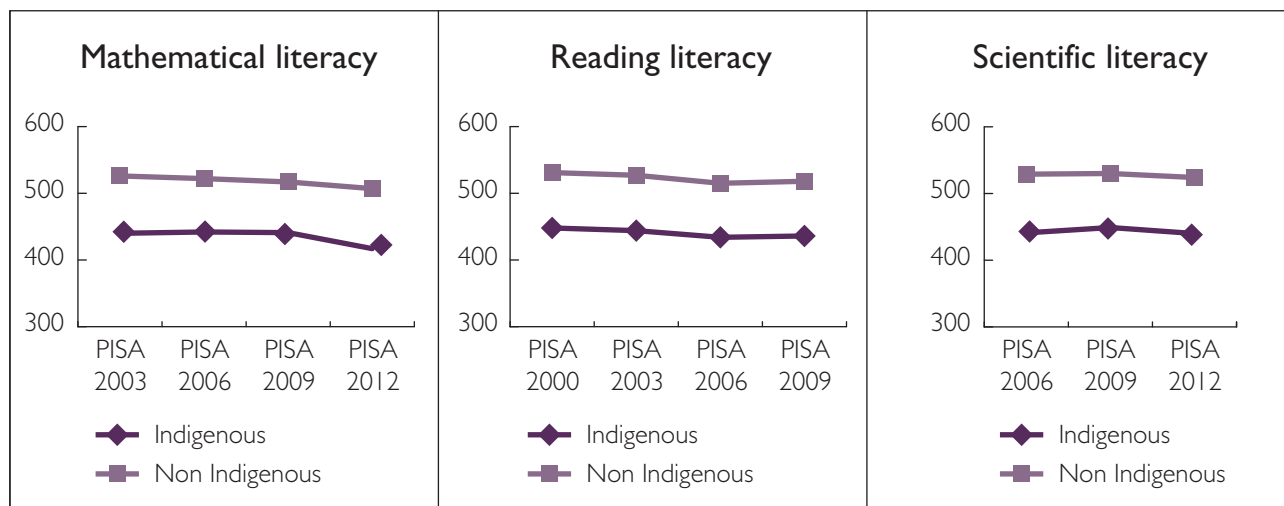
The results from PISA (Thomson, De Bortoli & Buckley, 2013) also show that:

- Indigenous students are underrepresented at the higher end of the mathematical literacy proficiency scale and overrepresented at the lower end of the scale.
- Only two per cent of Indigenous students were top performers in mathematical literacy compared to 15 per cent of non-Indigenous students.
- Half of the Indigenous students were low performers in mathematical literacy compared to 18 per cent of non-Indigenous students.
- Two per cent of Indigenous students were top performers in scientific literacy compared to 14 per cent of non-Indigenous students.
- Thirty-seven per cent of Indigenous students were low performers in scientific literacy compared to 13 per cent of non-Indigenous students.
- Two per cent of Indigenous students were top performers in reading literacy compared to 12 per cent of non-Indigenous students.
- Thirty-nine per cent of Indigenous students were low performers in reading literacy compared to 14 per cent of non-Indigenous students.

## Left behind



◆ Indigenous    ◆ Non Indigenous



In terms of gender, Indigenous females outperformed Indigenous males by 45 score points (450 compared with 405) in reading literacy. This equates to almost one-and-a-third years of schooling.

### The gap remains the same: Comparison of 2012 results and those from previous cycles

As with previous PISA surveys, the relatively low achievement of Australia’s Indigenous students continues to be of major concern.

While results for Indigenous students have generally remained stable over time, a significant change was recorded in mathematics literacy in PISA 2012, which declined from 441 points in 2009 to 417 points in 2012. Results for non-Indigenous students also declined during this period.

### Issues

In recent years, Australian governments – principally through the Council of Australian Governments – have adopted a bipartisan approach to ‘Closing the Gap’ in outcomes, including in education, between Indigenous and non-Indigenous Australians. The ‘Closing the Gap’ agenda of the Rudd and Gillard governments mirrored the ‘Overcoming Indigenous Disadvantage’ approach of the Howard government in so far as it identifies a range of equity performance indicators and looks to tailor investments and interventions to bridge current disparities between Indigenous and other Australians. Of particular interest to governments have been strategies to bridge gaps in literacy and numeracy, as illustrated by the Howard

government’s *National Indigenous English Literacy and Numeracy Strategy*, which commenced implementation in the early 2000s, roughly at the same time as the 2012 PISA cohort of 15-year-olds commenced their schooling.

Despite this and a raft of other initiatives in Indigenous education, and Indigenous affairs more broadly, over the past decade and more, performance data across a range of sources point to little gain or ‘mixed results’ at best. For example, a number of audits<sup>1</sup> indicate that Indigenous programs have either failed dismally, or have not achieved their objectives, or were unable to demonstrate that they have achieved their objectives. Whilst PISA and other results point to worrying trends in education, other data such as the 2011 Census data show that Year 12 or equivalent attainment for Indigenous young people grew encouragingly by 6.5 per cent to 53.9 per cent between the Census of 2006 and the Census of 2011. (That said, when compared to the overall population, at 53.9 per cent, the result for Indigenous students falls well shy of the overall Australian attainment rate of 85 per cent recorded in the 2011 Census.) Other encouraging trends presented in the 2011 Census include:

- Fifty-six per cent of three- to five-year-old Indigenous children attended pre-school or

1 NSW Auditor-General’s 2011 Report on Two Ways Together: NSW Aboriginal Affairs Plan; Victorian Auditor-General’s 2011 Report on Indigenous Education Strategies for Government Schools; Australian Department of Finance’s 2010 Strategic Review of Indigenous Expenditure Report to the Australian Government

primary school, up from 53 per cent in the 2006 Census

- Sixty-one per cent of Indigenous people aged 15 to 17 years were attending secondary school, up from 53 per cent in 2006
- more than one in three (37 per cent) Indigenous people aged 15 years and over had attained Year 12 or equivalent and/or Certificate II or higher qualification, up from 30 per cent in 2006. (Australian Bureau of Statistics (ABS), 2012)

The results in Indigenous educational performance (such as in PISA 2012) need to be viewed within a wider frame of socioeconomic and geographical disadvantage. PISA data in Australia show that students (Indigenous and non-Indigenous alike) who reside in regional and remote areas generally perform significantly more poorly than students in urban areas. It is therefore noteworthy that Australia's Indigenous population is more geographically dispersed than the general Australian population, with roughly a third of Indigenous people residing in urban areas, a third in regional areas and a third in remote areas. The 2012 PISA data also show that Australian students from lower socioeconomic backgrounds generally perform more poorly than students in the highest socioeconomic quartiles. Census and other data show that Indigenous households are more likely to earn less, live in overcrowded housing and live in low socioeconomic areas.

The 2012 PISA survey shows that Indigenous young people are more likely (53 per cent) than non-Indigenous students (41 per cent) to identify family demands and other problems impacting on the time they spent on school work. This highlights the particular demands that Indigenous young people typically face including being members of relatively larger, younger and extended families living on smaller incomes and in overcrowded homes. Positively, the survey shows a high degree of 'personal responsibility' and appreciation of the importance of science, maths and literacy among Indigenous young people. The survey shows, for example, similar levels of interest and valuing of mathematics among Indigenous and non-Indigenous students. However, the data also show that Indigenous young people are less likely to be confident and more likely to be 'anxious' about mathematics and maths testing.

## Implications for policy and practice

Improving Indigenous education is a complex exercise. Communities, governments and education authorities have long been frustrated by slow or little progress. Indigenous education easily fits the definition of 'wicked public policy problems' from the Australian Public Service Commission (2007), in so far as it:

- is difficult to clearly define
- has many interdependencies and is multi-causal
- leads to unforeseen consequences
- has no clear solution, and
- is socially complex.

The complexity of Indigenous education is partly illustrated by the barriers to education that Indigenous children and families continue to encounter, which, as Helme and Lamb (2011) identify, include:

- physical barriers, such as geographic isolation
- cultural barriers, such as discrimination
- economic barriers, such as high costs, low income
- informational barriers, such as lower levels of literacy in communities. (p.1)

Such cases of complexity require different responses to one-size-fits-all and top-down solutions. A number of reviews have identified the folly of such approaches (Morgan Disney & Associates, 2006). Initiatives that are more likely to work require greater innovation and flexibility; sustained investment; stronger collaboration and work across boundaries; ground-up resourcing, drive and effort; school leadership; and a broad and lateral (not narrow) approach to problem solving. Approaches to improve Indigenous affairs have been highly siloed including the creation of new institutes and new programs, which have been uncoordinated. In schooling, a plethora of 'new initiatives' are leading to a sense among teachers of drowning in a sea of fads and disjointed innovations (Hattie, 2008).

Unless educational outcomes for Indigenous young people vastly improve, then the downstream impact and cost in terms of social wellbeing, welfare, health, employment and economic sufficiency will be heavy. Data from the ABS show that the Indigenous Australian population at 30 June 2011 had a much younger age structure than the non-

Indigenous population. That is, in 2011 35.8 per cent of the Indigenous population were under 15 years of age compared with 18.3 per cent of the non-Indigenous population.<sup>2</sup>

## A way forward

The PISA Indigenous results underscore the importance of needs-based funding in education. Smart and highly targeted investment in early intervention literacy and numeracy programs, teacher quality improvement, school leadership and personalised learning support are key to turning results around. High-needs learners – such as Indigenous students in bilingual and/or bidialectal settings or with health or disability issues (such as otitis media) – often require additional and personalised learning support. Furthermore, the fact that many Indigenous children come from homes that do not speak Standard Australian English means that there is often an instant ‘catch up’ to be made in the early years of schooling.

Personalising learning and removing barriers to learning are key challenges facing teachers and principals in an ongoing quest for school reform and improvement (Hopkins, 2013). Within Indigenous contexts, school reform will need to embrace added dimensions of greater cultural competency and tailored student support services including one-on-one tuition in the case of high-needs learners. Teacher quality will mean greater attention to systematic monitoring and assessment of student performance which can be enabled by robust and deep personalised learning plans. Similarly, greater attention will need to be given to assessment and pedagogy. Adopting a ‘growth mindset’ in assessment (Masters, 2013) could be highly appropriate to Indigenous contexts (think ‘personal best’ rather than ‘world records’) along with ensuring that pedagogy is targeted toward personalised learning as opposed to the assumption that all children learn the same from the same instruction (Pritchett & Beatty, 2012).

When schools become contextually literate by positioning the school within community via social

capital, trust and networking, then greater gains can be made (Mulford, 2011). Similarly, high-performing schools are ones that take a wider lens to student well being. Emerging models such as the *Connected Communities* strategy in New South Wales are repositioning schools to become hubs which facilitate access to other support services for Indigenous children and young people such as health, employment, and community services. This approach appears consistent with principles promoted by UNICEF which has called for schools to embrace broader indicators of child wellbeing beyond education indicators to include material wellbeing, health and safety, family and peer relationships, subjective wellbeing, risk and behaviour (UNICEF, 2007).

High-performing schools in Indigenous contexts are also likely to adopt a school culture and leadership approach that embraces:

- a shared vision for the school community
- high expectations of success for both staff and students
- a learning environment that is responsive to individual needs
- a drive for continuous improvement
- involvement of the Indigenous community in planning and providing education (Helme & Lamb 2011, p.1).

Large gaps in student performance are likely to have a negative impact on students’ sense of confidence and heighten the risk of early school leaving. Studies point to a range of factors to reduce this risk. For instance, Purdie and Buckley (2010) cite a number of programs to improve Indigenous retention in schools including programs with the following key ingredients:

- tutors to assist with homework, study habits, and goal setting
- an individual education plan
- a mentor to review student progress and general wellbeing
- regular updates on academic performance
- educational excursions to develop confidence and skills
- a safe and supported environment to study after school, equipped with computers and educational resources
- career guidance. (p.13)

2 <http://www.abs.gov.au/AUSSTATS/abs@.nsf/featurearticlesbyCatalogue/DB52AB9278B0C818CA257AD7000D1067?OpenDocument>

## The work of ACER

ACER has a long history of undertaking research in Indigenous education. Through a renewed approach to Indigenous education, ACER has adopted a ‘Research +’ approach to its work in Indigenous education, by providing a suite of value-adding services as shown in the diagram below.

As an independent, not-for-profit and expert organisation, ACER is in a position to partner with Australia’s schools and education departments and work through complexity in order to improve literacy, numeracy and science results for Indigenous secondary students.

## Conclusion

The 2012 PISA results for Indigenous students again highlight the difficulty and complexity in improving educational outcomes for Indigenous students. A renewed and highly targeted approach is required to correct the downward trend of Indigenous students in secondary mathematical, reading and scientific literacy. Schools that adopt multifaceted approaches to Indigenous educational performance including quality teaching; systematic student and teacher assessment, monitoring and feedback; personalised learning for students; ongoing professional learning for teachers; school leadership and community partnership are more likely to reap rewards and turn results around for Aboriginal and Torres Strait Islander students.

## References

Australian Bureau of Statistics (2012). *Census of Population and Housing: Characteristics of Aboriginal and Torres Strait Islander Australians 2011*. Canberra: ABS Commonwealth of Australia.

Australian Department of Finance (2010.) *Strategic Review of Indigenous Expenditure*. Canberra: Australian Government.

Australian Public Service Commission (2007). *Tackling Wicked Problems: A public policy perspective*. Canberra: Commonwealth of Australia.

Hattie, J. (2008). *Visible Learning: A synthesis of over 800 meta-analyses relating to achievement*. London: Routledge.

Helme, S. & Lamb, S. (2011). *Closing the School Completion Gap for Indigenous Students: Resource Sheet Number 6 produced for the Closing the Gap Clearinghouse*. Canberra: Australian Institute of Health and Welfare.

Hopkins, D. (2013). *Exploding the Myths of School Reform*. Melbourne: Australian Council for Educational Research.

Morgan Disney & Associates and Tracey Whetnall Consulting and Wis-Wei Consulting (2006). *Synopsis Review of the COAG Trial Evaluation: Report to the Office of Indigenous Policy Coordination*. Canberra: Morgan Disney & Associates.

Mulford, B. (2011). *Teacher and School Leader Quality and Sustainability: Resource Sheet Number 5 produced for the Closing the Gap Clearinghouse*. Canberra: Australian Institute of Health and Welfare.

NSW Auditor-General (2011). *Auditor-General’s Report on Two Ways Together: NSW Aboriginal Affairs Plan*. Sydney: NSW Auditor-General’s Office.

Purdie, N. & Buckley, S. (2010). *School Attendance and Retention of Indigenous Australian Students: Issues Paper No. 1 produced for the Closing the Gap Clearinghouse*. Canberra: Australian Institute of Health and Welfare.

Thomson, S., De Bortoli, L. & Buckley, S. (2013). *PISA 2012: How Australia measures up*. Melbourne: Australian Council for Educational Research.

Thomson, S., De Bortoli, L., Nicholas, M., Hillman, K. & Buckley, S. (2010). *Challenges for Australian Education: Results from PISA 2009*. Melbourne: Australian Council for Educational Research.

Victorian Auditor-General (2011). *Indigenous Education Strategies for Government Schools*. Melbourne: Victorian Auditor-General’s Office.

UNICEF (2007). *Child Poverty in Perspective: An overview of child wellbeing in rich countries*. Florence: UNICEF.

### ACER’s REAP services in Indigenous education

