

Messages for minority groups in Australia from international studies

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Results from international studies such as the recent OECD Programme for International Student Assessment (PISA) tend to be reported in the media in terms of national averages, with a focus on the ranking of participating countries. However, the disaggregation and analysis of data collected from various social groupings within countries provides an opportunity to investigate the extent to which countries support students from various minority groups to achieve equitable educational outcomes.

In Australia, the gap between educational outcomes for Indigenous¹ and non-Indigenous students at all levels of education has long been a concern (Long et al, 1999). In recent years, Indigenous education policy has placed a high priority on gathering data on educational outcomes as a way of monitoring the extent to which educational equity is being achieved for Indigenous students. While national data collections contain achievement data of students at primary school and in the post-compulsory years, less is known about the achievement and characteristics of 15-year-old Indigenous students. The PISA study provides a unique opportunity to collect data on this group of students and to compare their achievement with non-Indigenous Australian students and students from other countries.

This summary paper provides results on some aspects of the findings from the PISA study, using primarily the data on the sampled Indigenous students. Secondly, it discusses the potential the results have for monitoring the improvement of education for Indigenous students.

Scope of PISA

The OECD Programme for International Student Assessment (PISA) provides a unique opportunity to assess and compare the skills and knowledge of students, in three key areas, as they near the end of their compulsory schooling.

Some of the questions PISA addresses are:

- How well are young adults prepared to meet the challenges of the future?
- Are they able to analyse, reason and communicate their ideas effectively?
- Do they have the capacity to continue learning throughout life?

More than a quarter of a million students from 32 countries participated in the PISA 2000 assessment. The target population was defined as those students aged 15 years and enrolled in an educational institution, either full- or part-time at the time of testing.

In Australia, a total of 5,176 students from 231 schools participated in PISA. One hundred and ninety-two of these students identified themselves as Aboriginal and/or Torres Strait Islander. In addition, a further 301 Indigenous students participated as part of a special national option to oversample this minority group. Six hundred students who were identified as Indigenous on the list of age-eligible students provided by the school, and who were not randomly selected to be part of the main sample, were invited to participate. The

¹In this paper, Indigenous students refers to Australian Aboriginal and Torres Strait Islander students. This is in contrast with the use of the term Indigenous in the international PISA report, which refers to all students born in the country where the assessment took place.

sampled and invited students together include all the Indigenous students aged 15 from the national random sample of schools and, as a consequence, results can be reliably reported for them as a group.

The consultative process

The oversampling of Indigenous students was a recommendation from the PISA National Advisory Committee. This group also suggested the formation of an Indigenous Education Consultative Group, whose main role included the assessment of items from both the assessment booklet and student questionnaire for their relevance to the Indigenous student.

ACER strongly supported this suggestion: research on Indigenous education issues at ACER is informed by its own Indigenous Education Advisory Committee and by Indigenous education policy documents and reports that encourage Indigenous participation in the evaluation of education services and Indigenous ownership of Indigenous research. Accordingly, a consultative group was formed and consisted of Indigenous representatives from each state and territory who met with researchers from ACER to discuss the assessment materials and the types of data analyses that would benefit Indigenous students and their communities.

The consultative group was particularly keen to identify individual and school factors associated with success for Indigenous secondary school students. In the past, research has focussed on factors that mitigate against success for Indigenous students including low

literacy achievement, socio-economic status, high levels of absenteeism and remoteness. Less is known about the factors that enable and support Indigenous students to stay at school and succeed.

After much discussion, recommendations were made, including minor adaptations to terminology and vocabulary to the items in the assessment booklets to avoid Indigenous students being confronted with unfamiliar vocabulary and the inclusion of additional items in the student questionnaire. These included Indigenous status, amount of time spent on a variety of out-of-school activities, travel time to school, periods of absence from school in the previous three years and students' educational aspirations.

Results

Some of the findings that have emerged from a preliminary analysis of the data relating to reading achievement and selected student background variables are presented below. There are still many data to be analysed and further results will be given in the conference presentation.

Reading achievement

The relative standings of the 32 participating countries serve as important indicators to monitor key learning objectives and to acknowledge the strengths and weaknesses of their own country's educational system. Australia's results were favourable in comparison to

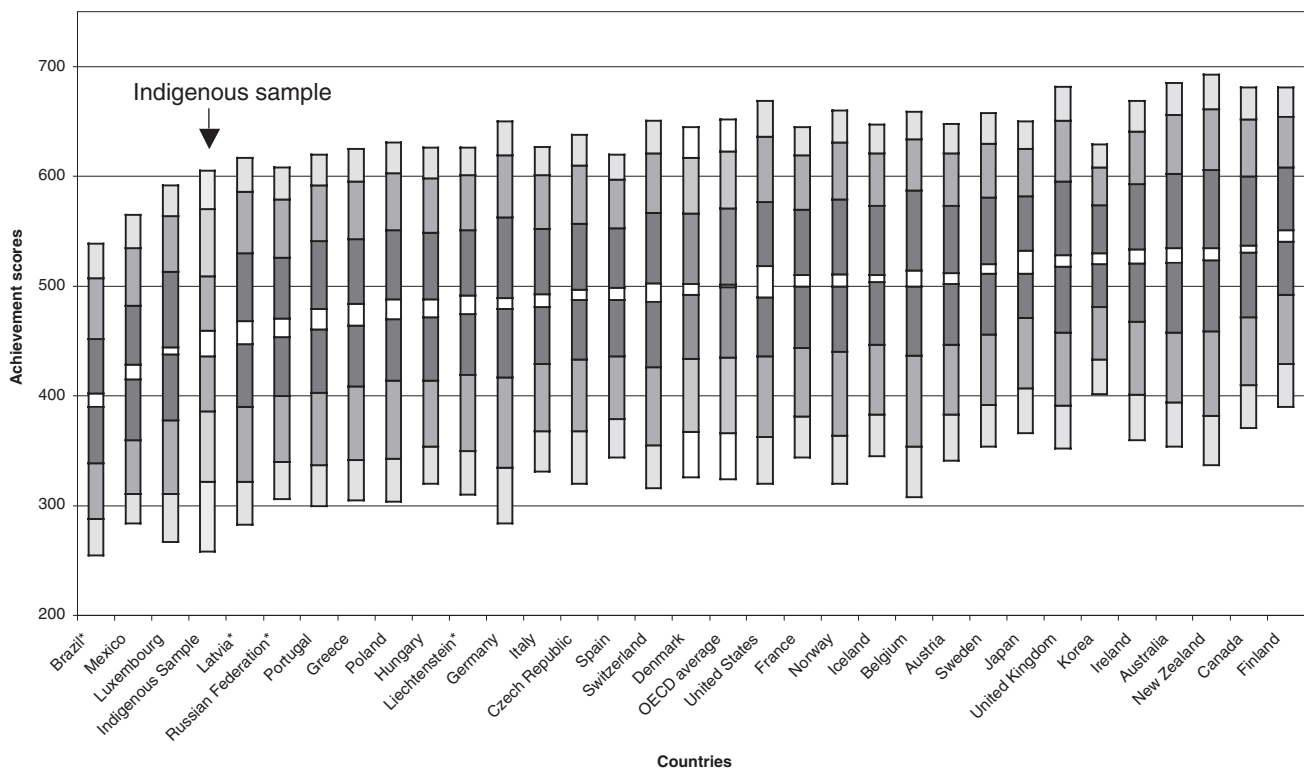


Figure 1 Student achievement on the Reading Literacy Scale by country and including the Indigenous sample

the other countries, achieving significantly higher than the international means in each of the three domains (reading literacy, mathematical literacy and scientific literacy).

In Figure 1, the Indigenous sample has been treated as a 'separate country' and their mean score and distribution of results plotted on the same chart as for all other participating countries. The mean reading literacy score for the Indigenous sample was 448 (compared to a mean reading literacy score of 528 for Australia.) Figure 1 shows that, on average, the Indigenous sample achieved significantly below the international mean and is positioned between Latvia and Luxembourg. It should be noted that there is a range of achievement by Indigenous students. Indigenous students achieved at all proficiency levels for reading literacy, including at the highest level.

When interpreting this data, however, it should also be noted that the Indigenous students who participated in PISA may not necessarily be representative of their age peers. By the age of 15, around 20 per cent of Indigenous students have already left school. Also, 41 very remote mainland schools were excluded from the PISA study and no island schools were included. Finally, of the 600 Indigenous students who were eligible to participate PISA, around 50 per cent participated.

Student characteristics

In addition to completing an assessment booklet, students were asked to complete a student questionnaire. Detailed information about the students' home backgrounds, including parents' occupations, out-of-school activities, attitudes and habits to reading, aspirations for the future and assessment of self-regulated learning were obtained.

The contextual data collected in the student questionnaire provides valuable information in helping to understand the achievement results. It may also provide evidence regarding the factors contributing to student success. Case study research which focuses on successful Indigenous students notes that they have a positive self-concept as learners, are comfortable with their Aboriginality, expect and are determined to succeed and find encouragement and support from significant others in their lives (Russell, 1999; Mecurio & Clayton, 2001).

Socio-economic status

The data collected on parents' occupations was used to create an index of socio-economic status (SES), and was found to be one of the most important student background variables in relation to achievement in Australia. Figure 2 shows the social gradient for SES in reading literacy for several countries, and also for the

Indigenous sample. The social gradient is able to provide information about how well a country has achieved on the reading assessment, how strongly students' results are related to SES and the range of SES for a country.

Generally, the relationship shows that students with lower levels of SES are more likely to have a lower achievement level. Likewise, students with higher levels of SES are more likely to have a higher achievement level.

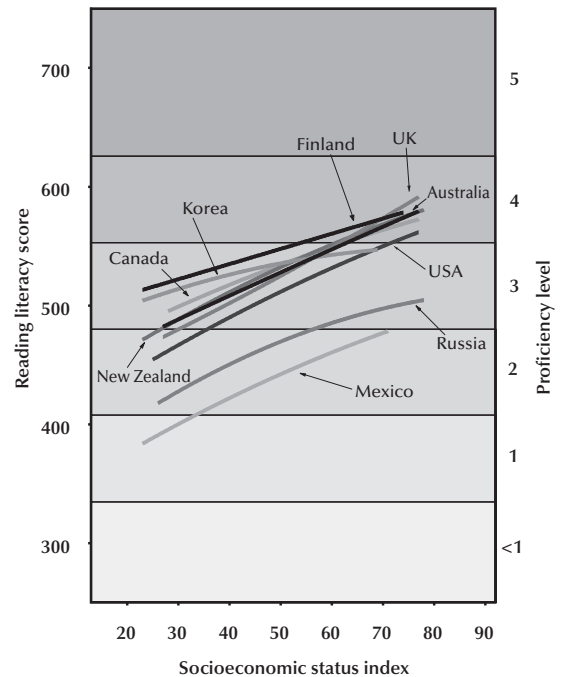


Figure 2 Relationship between reading achievement and SES for several countries and the Indigenous sample

The figure shows the Indigenous sample has a smaller range of SES compared to the whole Australian sample. There is also a notable difference towards the end of the social gradient between the whole sample and the Indigenous sample. In the case of the whole sample, students with a high SES were also those students who were more likely to achieve higher. For the Indigenous sample, however, the social gradient shows there is less SES effect, ie those students from a high SES are not necessarily more likely to achieve higher. A flatter SES gradient is only of concern if achievement levels are relatively low, as in the case of the Australian Indigenous group. On its own, a flatter SES gradient indicates greater equity of outcomes in relation to background. The challenge is to raise the overall level rather than just the top end (see, for example, Korea, which shows relatively high achievement as well as relatively high equity in comparison with other countries).

The example above suggests there may be other factors operating in relation to achievement for the Indigenous students, more strongly than for the Australian sample as a whole where SES is a dominant factor.

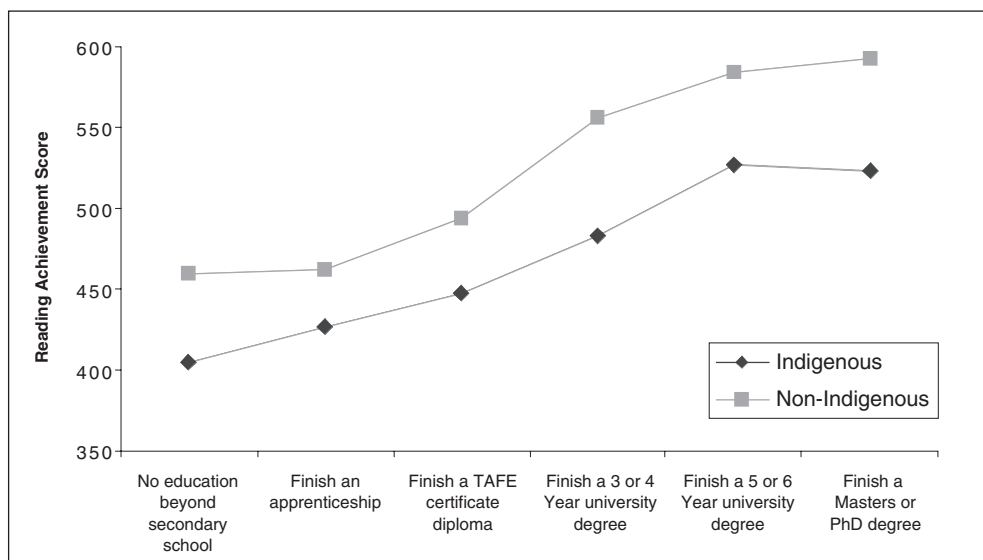


Figure 3 Reading achievement and educational aspirations beyond secondary school for the Indigenous and non-Indigenous sample

Aspirations and attendance

Review papers and research studies consistently state that Indigenous students and their parents have high aspirations and place a high priority on education. The student questionnaire asked students about their educational aspirations beyond secondary school. The findings show students who intended to strive higher educationally were more likely to have a higher reading achievement (Figure 3).

A tenth of the Indigenous students planned not to undertake any education after completing secondary school. A quarter of students expected to finish an apprenticeship and a further quarter indicated they would complete a TAFE certificate or diploma. For those students indicating they planned to attend university, of which almost a quarter indicated they would finish a three or four-year degree, a tenth would complete a five or six-year degree and only a small percentage intended to complete a Masters or a PhD degree (see Table 1).

Educational aspirations	Indigenous students (%)	Non-Indigenous students (%)
No education beyond school	11.9	6.3
Finish an apprenticeship	24.9	12.1
Finish a TAFE certificate or diploma	26.1	20.0
Finish a 3 or 4-year university degree	23.2	37.3
Finish a 5 or 6-year university degree	9.7	18.5
Finish a Masters or PhD degree	4.4	5.8

Table 1 Educational aspirations beyond secondary school

Two of the factors which may be expected to reveal significant differences between the Indigenous and non-Indigenous samples are absenteeism and travel time to school. Interestingly, there was no significant difference between Indigenous and non-Indigenous students in self-reported absences from school over the past three years and travelling time to school was slightly less for the Indigenous students (see Table 2).

Absence from school	Non-Indigenous students (%)	Indigenous students (%)
A few days, if any	47.7	42.6
One or two weeks	39.3	39.8
Three weeks to a month	8.4	10.6
Half a term	2.4	4.3
More than half a term	2.3	2.6

Travelling time to school	Non-Indigenous students (%)	Indigenous students (%)
Less than 15 mins	47.2	56.5
15–30 mins	27.5	24.8
30–60 mins	18	15.7
More than 60 mins	7.4	3.0

Table 2 Absenteeism and travel time to school

It may be that the performance of the Indigenous students is more specifically related to other aspects of their experience as Indigenous students in western education systems. Further exploration of the data will include an analysis of the test items and other individual and school characteristics and will be discussed in the presentation.

Conclusion

The lower average performance of the Indigenous students raises important questions relating to the degree of knowledge and the effective skills these young adults possess in order to meet the challenges of the future.

The fact that the preliminary analysis of the data reveals some unexpected results in the differences in student characteristics between the Indigenous and non-Indigenous students in this study poses some interesting questions about the significantly lower reading literacy levels of the Indigenous students. The main aim of future data analysis will be to examine more closely the individual and school characteristics related to higher achievement by Indigenous students.

The ongoing nature of the PISA study also provides an opportunity to collect data at two further points over next six years from students who will have experienced a range of strategic intervention programs implemented by state and territory education departments and through funding from the Commonwealth's Strategic Initiatives program. These programs aim to improve education for Indigenous students and support them to achieve educational outcomes equal to non-Indigenous students. The closing of the gap between the achievement of Indigenous and non-Indigenous students in future testing provides one measure of the attainment of educational equity.

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