

Early post-school outcomes of Indigenous young people: the role of literacy and numeracy

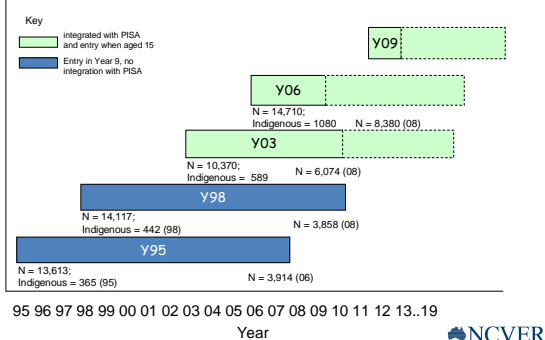
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Introduction

- Despite improvements significant gaps exist between Indigenous & non-Indigenous people
- Governments at both levels are striving to improve Indigenous people's outcomes
 - Closing the Gap (COAG)
- Multiple factors contribute to Indigenous disadvantage and are highly interconnected
- Due to the consistently lower scores, improving literacy and numeracy is one of the key target areas to help close the gap

Longitudinal Surveys of Australian Youth (LSAY) cohorts



What can LSAY tell us?

- Longitudinal Surveys of Australian Youth (LSAY)
- Provides a comparison between cohorts to see whether improvements have occurred
 - 1998 (Y95) and 2007 (Y03)
- Outcomes of Indigenous young people can be segmented by background characteristics
- Literacy and numeracy levels at 15 yrs
 - Program of International Student Assessment (PISA)
- But caution needed when generalising results
 - Small sample size

Gap between Indigenous & non-Indigenous young people

Outcomes	1998 (%)			2007 (%)		
	Indigenous	Non-Indigenous	Gap	Indigenous	Non-Indigenous	Gap
Completed Year 12	49	76	-27	↓ Gap	46	-12
Employed (FT)	36	32	+4	46	42	+4
FT employment or education	66	80	-14	66	79	-13
Bachelor degree	18	34	-16	↑ Gap 7%	30	-23
Cert III or higher VET qualification	26	26	0	30	29	+1

↑ 4% going to VET

Source: LSAY Y95 cohort in 1998 and Y03 cohort, 2007

How much does literacy & numeracy contribute?

- How much does literacy and numeracy levels contribute to the educational gap?
- Break down the gap in school, post-school study and employment outcomes:
 - 'Literacy/numeracy effect' – how much the difference in distributions of the group achievement quartiles contributes to the gap
 - 'Other contributing factors' – how much is attributed to differences between Indigenous and non-Indigenous groups that are not related to ability e.g. health, parental income, locality, occupation, etc.

Longitudinal Surveys of Australian Youth

Decomposing the gap

The methodology to break down the gap into its two components is:

$$\text{Gap} = \frac{1}{n} \sum_{i=1}^n x_{ij} - \frac{1}{m} \sum_{j=1}^m y_{ij}$$

$$= \frac{1}{n} \sum_{i=1}^n \frac{n_i}{n} \sum_{j=1}^m x_{ij} - \frac{1}{m} \sum_{j=1}^m \frac{m_j}{m} \sum_{i=1}^n y_{ij}$$

$$= \sum_{i=1}^n \frac{n_i}{n} \bar{x}_i - \sum_{j=1}^m \frac{m_j}{m} \bar{y}_j$$

If we replace $\frac{n_i}{n} = p_i$ and $\frac{m_j}{m} = q_j$ then we obtain:

$$= \sum_{i=1}^n (p_i \bar{x}_i - q_i \bar{y}_i)$$

$$= \sum_{i=1}^n [p_i (\bar{x}_i - \bar{y}_i) + \bar{y}_i (p_i - q_i)]$$

Which decomposes the gap into the 'literacy/numeracy effect' & 'other contributing factors'

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Year 12 completion 19 year olds, 2007(%)

Reading Achievement Quartiles					
Quartile	Indigenous	Non-Indigenous	Gap	Literacy/numeracy effect	Other factors
Lowest	55	55	0	0	-
Second	65	65	0	0	-
Third	71	71	0	0	-
Highest	83	83	0	0	-
Total	71	83	-12	-4	-8

Higher levels of literacy & numeracy increase completion of year 12

But there are still significant gaps across achievement quartiles

More than half of the gap explained by other contributing factors

But close to half attributed to poorer literacy & numeracy levels of Indigenous youth

Source: LSAY Y03 cohort, 2007

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FT Employment 19 year olds, 2007 (%)

Reading Achievement Quartiles					
Quartile	Indigenous	Non-Indigenous	Gap	Literacy/numeracy effect	Other factors
Lowest	46	59	-13	-	-
Second	52	49	+3	-	-
Third	42	36	+6	-	-
Highest	44	27	+17	-	-
Total	46	42	+4	-2	+6

Indigenous 19 year olds in the top quartiles have higher employment rates

employment

Source: LSAY Y03 cohort, 2007

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Bachelor degree 19 year olds, 2007 (%)

Reading Achievement Quartiles					
Quartile	Indigenous	Non-Indigenous	Gap	Literacy/numeracy effect	Other factors
Lowest	6	6	0	0	-
Second	16	16	0	0	-
Third	39	39	0	0	-
Highest	66	66	0	0	-
Total	16	39	-23	-10	-13

Higher levels of literacy & numeracy increase participation university

But this rate is higher for non-Indigenous 19 year olds, particularly at the top quartiles

The gap can be attributed to poor literacy & numeracy levels of Indigenous youth

Other contributing factors equally contribute to lower university participation

Source: LSAY Y03 cohort, 2007

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Certificate III + 19 year olds, 2007 (%)

Reading Achievement Quartiles					
Quartile	Indigenous	Non-Indigenous	Gap	Literacy/numeracy effect	Other factors
Lowest	30	39	-9	-	-
Second	27	37	-10	-	-
Third	20	30	-10	-	-
Highest	26	15	+11	-	-
Total	30	29	+1	-	+1

Higher uptake of VET by Indigenous higher achievers – despite a large % wanting to go to university

This can be explained in part by access issues – VET study is more accessible than university in non-metro areas where over one third of Indigenous higher achievers reside

Source: LSAY Y03 cohort, 2007

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Findings

- Significant gains have been made in Year 12 completion for Indigenous youth, with the gap between them and non-Indigenous youth narrowing
- The proportion of Indigenous 19 year olds participating or completing VET study at certificate III or above increased by 4% between 1999 and 2007.
- Higher literacy and numeracy levels are associated with higher Year 12 completion and university post-school study. However, these rates are lower for Indigenous youth, hence the gap remains.

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Findings continued

- Slightly larger proportions (four percentage points) of Indigenous youth aged 19 years are in full-time employment, among them many high achievers.
- High achieving Indigenous youth are not participating in university study at the rate of their non-Indigenous counterparts, despite a large proportion of these young people aspiring to university study.
- Instead, a large proportion of them are undertaking VET study. This may be because in non-metropolitan areas, there is better access to VET than university.

Conclusions

- Many Indigenous young people face multiple disadvantages, such as poor access to post-school education and poor health, in addition to low literacy and numeracy levels that subsequently affect their outcomes.
- A multiple level approach is required to improve Indigenous outcomes in education and employment.
- But raising the levels of literacy and numeracy for Indigenous youth contributes significantly to close the educational and employment gap between Indigenous and non-Indigenous youth.