

Chapter 5

PERFORMANCE AT SCHOOL

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Chapter 5

PERFORMANCE AT SCHOOL

School can be a major developmental experience for children, young people and their families. As a social institution it exerts a lifelong influence on developmental opportunities and expectations. Performance at school is associated with onward participation in education as well as social and vocational opportunities in the short and long term. This chapter describes Aboriginal students' levels of overall academic performance as rated by their teachers. The relationship between academic performance and key demographic variable such as age, sex and Level of Relative Isolation are also explored. Additionally, student results on performance measures of Matrices and Word Definitions as well as educational benchmark test data are used to assess how well these items correlated with teacher rated overall academic performance.

SUMMARY

Various aspects of the academic performance of Western Australian Aboriginal students aged 4–17 years have been measured in the WAACHS using teacher reports, independent tests of verbal and non-verbal performance and administrative data linked to the survey. In this chapter, the methods used to measure academic performance are described. The performance of Aboriginal students in terms of these measures is also detailed. Where possible, comparisons of school performance with all students have also been made.

Two measures of the academic performance of Aboriginal students were collected in the WAACHS:

- ◆ Teacher rated literacy, numeracy and overall academic performance.
- ◆ Two standardised tests were administered to survey students by school teachers. A test of visuo-spatial reasoning ('Matrices' test) where students were asked to complete a pattern or design, and a test of English language word definitions ('Word Definitions' test).

A third measure entailed using test scores from the West Australian Literacy and Numeracy Assessment (WALNA). These were obtained by linking survey respondents with data held by the Western Australian Department of Education and Training.

In respect of teacher ratings of Aboriginal students aged 4–17 years:

- ◆ The proportion of Aboriginal students rated by their teachers as having low academic performance is disturbingly high. Almost six in ten students (58 per cent) were rated by their teachers as 'far below age' or 'somewhat below age' level in terms of overall academic performance.
- ◆ The proportion of Aboriginal students with low academic performance was significantly higher than the comparable proportion of all Western Australian students (19 per cent).



SUMMARY (continued)

- ◆ Teacher rated academic performance was significantly associated with Aboriginal students' sex, age, Level of Relative Isolation and category of school. Male students, students aged 8–14 years, students living in areas of high and extreme isolation and students attending Independent schools were factors associated with an increased likelihood of low academic performance.

Comparisons with other students:

- ◆ While data that enables direct comparisons of the academic performance of Western Australian Aboriginal students with Aboriginal students in other Australian states is limited, the available evidence suggests that the lower performance of Aboriginal students relative to all students is consistent with findings in other Australian jurisdictions.
- ◆ Not only are West Australian Aboriginal students faring poorly in terms of academic performance when compared with all Western Australian students, international evidence suggests that the relative educational disadvantage of Indigenous students living in New Zealand, Canada and the United States is of a much smaller magnitude than the educational disparity observed between Australian Aboriginal students and all Australian students.

Analysis of the tests of verbal and non-verbal performance indicate:

- ◆ Western Australian Aboriginal students showed higher ability in the Matrices test, where their mean centile score was 42. This was significantly higher than Aboriginal students mean centile score of 19 in the Word Definitions test.
- ◆ Relative to Aboriginal students, on average all students scored significantly higher in both the Matrices (Mean: 59) and Word Definitions test (Mean: 45).
- ◆ For both Aboriginal and all students, performance in the Matrices and Word Definitions tests declined with age. Average test scores dropped markedly after age 4–5 years for Aboriginal students, whereas a decline for all Western Australian students did not occur until age 9–10 years.
- ◆ Aboriginal students whose main language spoken in the classroom was English scored significantly higher in both the Matrices and Word Definitions tests relative to students who spoke a language other than English. However, a comparison of Aboriginal students who spoke English with all Aboriginal students reveals no difference in performance across the two groups, suggesting that English language skills are not the sole reason for the lower performance of Aboriginal students in these two tests.

Administrative data linked to the survey also confirm inequalities in academic performance between Aboriginal students and all Western Australian students:

- ◆ The proportion of Aboriginal students in the survey achieving the national benchmarks in WALNA testing was highest in Year 3 testing, where results ranged from 52 per cent to 77 per cent in numeracy, spelling, writing and reading tests. For Year 7 testing, the proportion of Aboriginal students achieving the national benchmarks was significantly lower where results ranged from 36 per cent to 43 per cent.



SUMMARY *(continued)*

- ◆ By way of comparison, administrative data covering the period 2001–2004, indicates that the proportion of all students achieving the national benchmark in Year 3 testing was between 81 per cent and 95 per cent. The corresponding proportions meeting the benchmark for all students in Year 7 testing was between 76 per cent and 85 per cent. While the performance of all students also declines between Year 3 and Year 7 testing, the deterioration in performance is much greater for Aboriginal students. These results further confirm wide disparities in educational outcomes between Aboriginal and all students.
- ◆ A separate analysis of surveyed Aboriginal students who completed a Year 3, Year 5 and Year 7 WALNA test also revealed that levels of performance declined over time. While only a small number of survey students completed all three tests, for this group the proportion meeting the numeracy benchmark declined by over 20 percentage points over the four year period – falling from 65 per cent to 42 per cent. Over the same period, the proportion achieving the reading benchmark declined by 30 percentage points, falling from 85 per cent to 55 per cent.
- ◆ A key measure of academic performance available from the survey is teacher ratings of overall academic performance, as this measure is available for all surveyed students. Analysis of teacher ratings with reference to independent measures of academic performance including Matrices and Word Definitions testing and WALNA test scores, shows good agreement between teacher's overall rating of academic performance and other measures of student performance.



MEASURING ACADEMIC PERFORMANCE OF ABORIGINAL STUDENTS

Data describing some aspects of the school performance of Aboriginal children aged 4–17 years, at school at the time of survey and whose carers gave consent to approach schools is the focus of this chapter.

Two measures of academic performance were collected in the Western Australian Aboriginal Child Health Survey (WAACHS):

- ◆ Data were gathered from the teachers of surveyed students. These data were in the form of a teacher rating for three areas of performance: literacy, numeracy and overall academic performance.
- ◆ Two standardised cognitive tests were directly administered to surveyed students – a test of non-verbal performance (the ‘Matrices’ test) and a test of one aspect of English language reasoning (the ‘Word Definitions’ test). The commentary box entitled *Verbal and non-verbal performance measures* discusses both of these tests in more detail.

Additionally, test scores from the West Australian Literacy and Numeracy Assessment (WALNA) were obtained by linking survey respondents with data held by the Western Australian Department of Education and Training. See commentary box entitled *Western Australian Literacy and Numeracy Assessment (WALNA) data* for more details.

This chapter describes the levels of educational performance of Aboriginal students with reference to these measures. The relationship between academic performance and key demographic variables such as age, sex and Level of Relative Isolation (LORI) are also explored. In later sections, student’s results in the measures of Matrices and Word Definitions and linked WALNA data are also analysed. These independent performance measures are also analysed to assess how well they correlate with teacher rated overall academic performance.

TEACHER RATED ACADEMIC PERFORMANCE

Teachers were asked to rate each student in the survey in comparison with students of the same age. Teachers were asked to describe the student’s achievement in the key learning areas of literacy and numeracy along with their overall academic performance. Each student’s performance in each of these areas was rated on the following five point scale:

- ◆ far below age level
- ◆ somewhat below age level
- ◆ at age level
- ◆ somewhat above age level
- ◆ far above age level.

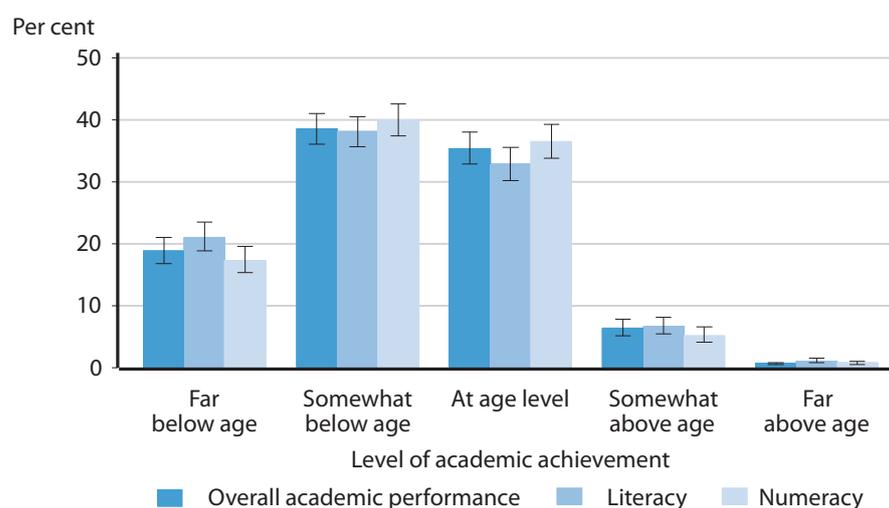
Information on these key learning areas of academic performance (literacy, numeracy and overall academic performance) was collected for all surveyed students.



Overall academic performance

The overall academic performance of almost one in five Aboriginal students (18.9 per cent; CI: 16.8%–21.1%) was rated at ‘far below age level’ by their teachers. A further 38.6 per cent (CI: 36.1%–41.1%) were rated at ‘somewhat below age level’. The corresponding proportion rated at ‘far above age level’ was 0.7 per cent (CI: 0.5%–0.9%) (Figure 5.1).

FIGURE 5.1: ABORIGINAL STUDENTS AGED 4–17 YEARS — TEACHER RATED ACADEMIC PERFORMANCE



Source: Table 5.1

Performance in literacy and numeracy

The distribution of teacher rated academic performance was similar across all three key learning areas of academic performance. Around one in five students were rated ‘far below age level’ in overall academic performance (18.9 per cent; CI: 16.8%–21.1%), in literacy (21.1 per cent; CI: 18.9%–23.5%) and in numeracy (17.4 per cent; CI: 15.4%–19.6%). The corresponding proportions were also similar across all three measures within each of the other achievement categories for students rated at ‘somewhat below age level’, ‘at age level’, ‘somewhat above age level’ and ‘far above age level’ (Figure 5.1).

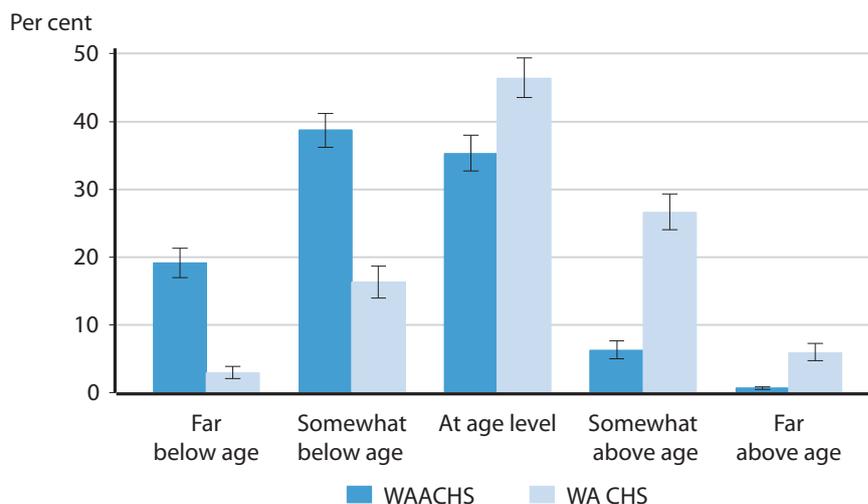
TEACHER RATED OVERALL ACADEMIC PERFORMANCE – COMPARISON WITH ALL STUDENTS

As the 1993 *Western Australian Child Health Survey* (WA CHS) asked the same questions of teachers of all Western Australian students aged 4–16 years, it was possible to compare the academic performance of Aboriginal students with the general Western Australian student population.¹

Restricting the WAACHS data to the age range 4–16 years in order to allow a direct comparison with the 1993 WA CHS, almost one in five Aboriginal students (19.1 per cent; CI: 17.0%–21.3%) were rated at ‘far below age level’ overall academic performance by their teachers. The corresponding proportion for all students surveyed in the 1993 WA CHS was 2.9 per cent (CI: 2.1%–3.9%). A little less than one per cent (0.7 per cent; CI: 0.5%–0.9%) of Aboriginal students aged 4–16 years were rated at ‘far above age level’ overall academic performance, compared with 5.9 per cent (CI: 4.7%–7.3%) of all students aged 4–16 years (Figure 5.2).



FIGURE 5.2: STUDENTS AGED 4–16 YEARS — DISTRIBUTION OF TEACHER RATED OVERALL ACADEMIC PERFORMANCE, WAACHS COMPARED WITH WA CHS



Source: Tables 5.2, 5.3

DEFINING ACADEMIC PERFORMANCE

In this publication, ‘low academic performance’ is defined by grouping those students who were ‘far below age level’ or ‘somewhat below age level’ using teacher ratings of overall academic performance. The remaining students who were ‘at age level’, ‘somewhat above age level’ or ‘far above age level’ are classified as having ‘average or above average academic performance’.

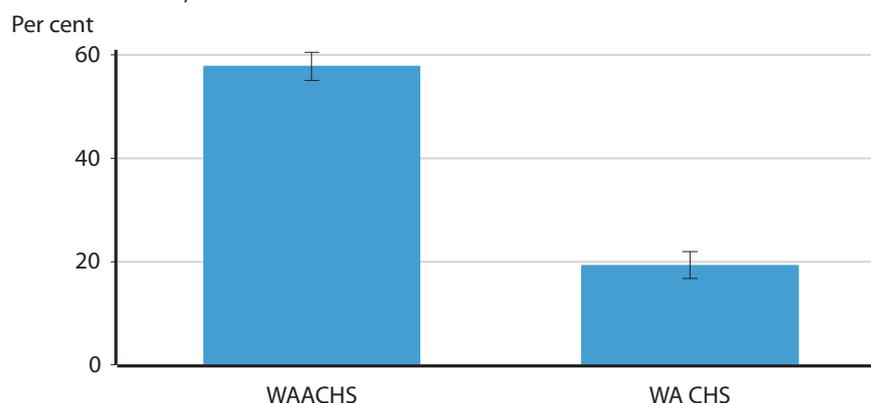
Using this definition, around six in ten Aboriginal students aged 4–17 years (57.5 per cent; CI: 54.7%–60.3%) were rated by their teachers as having low academic performance (Table 5.4).

The 1993 CHS of all Western Australian children estimated that around one in five students aged 4–16 years (19.2 per cent; CI: 16.7%–21.9%) in the general population were rated at low academic performance. In comparison, the proportion of Aboriginal students aged 4–16 years with low academic performance was a significantly higher 57.8 per cent (CI: 55.1%–60.6%) (Figure 5.3).

5



FIGURE 5.3: STUDENTS AGED 4–16 YEARS — PROPORTION AT LOW ACADEMIC PERFORMANCE, WAACHS COMPARED WITH WA CHS



Source: Tables 5.5, 5.6

ABORIGINAL EDUCATIONAL ATTAINMENT: AUSTRALIAN RESEARCH

Findings from the WAACHS detailing lower levels of academic performance of Aboriginal students are consistent with other Australian research and data sources relating to Aboriginal educational attainment.

Comparisons with other Western Australian data

Consistent with findings reported throughout this chapter, the WALNA data relating to all Western Australian Aboriginal students gathered from 2000–2004 show that a substantially lower proportion of Aboriginal students achieved the national benchmarks in numeracy, reading, writing and spelling testing compared with all students in Years 3, 5 and 7.

Comparison of Year 3 student assessment data show that the proportions of Aboriginal students meeting the national benchmarks were around 15–35 percentage points lower than the proportion of all students in Western Australia. Similarly in Year 5 testing, the proportions of Aboriginal students meeting the benchmarks were in the range of 21–37 percentage points lower than for all students. The inequality between Aboriginal and all students was even more marked in Year 7 testing over the same time frame, with around 30–44 percentage point differences in the proportion meeting the reading, writing, spelling and numeracy benchmarks. In Year 7 testing in 2004, less than half of all Aboriginal students achieved each of the benchmarks. The best results among Aboriginal students occurring in the reading and spelling tests, where 43 per cent met the national benchmark. Comparable proportions for all students ranged from around 76–84 per cent achieving the benchmark figure in these subject areas.²

Continued



ABORIGINAL EDUCATIONAL ATTAINMENT: AUSTRALIAN RESEARCH (continued)

When the 2004 data are analysed by individual WALNA test, the difference in the proportion of Aboriginal students achieving the spelling benchmark in comparison to all students remains relatively stable, at around 34 percentage points in each of the three testing years. For the reading tests, the gap in performance between Aboriginal students and all students increased from 16 percentage points in Year 3, to 25 percentage points in Year 5 and 40 percentage points in Year 7. The corresponding gap for the numeracy and writing tests also increased, though not as dramatically as for the reading tests. The gap in writing performance increased from around 30 percentage points in Year 3 to 36 percentage points in Year 7, while the performance gap for numeracy was 27 percentage points in Year 3 and 41 percentage points in Year 7.

PROPORTION OF WESTERN AUSTRALIAN STUDENTS ACHIEVING THE NATIONAL BENCHMARK, 2001–2004

WALNA test	Population group	2001	2002	2003	2004
Year 3 testing (%)					
Reading	Aboriginal students	76.6	77.5	78.3	79.5
	All students	93.3	94.4	94.7	95.0
Writing	Aboriginal students	52.1	54.7	57.2	56.6
	All students	84.0	85.6	85.8	86.4
Spelling	Aboriginal students	47.5	51.5	46.8	46.9
	All students	81.9	84.8	80.7	81.4
Numeracy	Aboriginal students	70.5	57.8	60.8	60.9
	All students	91.0	86.7	88.7	88.3
Year 5 testing (%)					
Reading	Aboriginal students	71.3	73.0	70.7	67.0
	All students	93.5	94.4	93.0	92.4
Writing	Aboriginal students	49.5	56.9	55.1	56.0
	All students	82.7	87.6	87.1	86.8
Spelling	Aboriginal students	49.7	47.0	50.3	48.5
	All students	81.8	80.5	82.7	82.0
Numeracy	Aboriginal students	56.9	48.8	59.2	55.0
	All students	88.2	85.9	89.2	87.4
Year 7 testing (%)					
Reading	Aboriginal students	40.0	42.4	45.9	43.0
	All students	83.9	84.9	83.5	83.3
Writing	Aboriginal students	38.9	38.0	41.6	40.0
	All students	78.2	77.7	77.3	76.4
Spelling	Aboriginal students	46.0	40.6	50.3	43.4
	All students	79.6	76.8	80.7	77.3
Numeracy	Aboriginal students	35.5	38.4	39.8	38.5
	All students	77.8	81.0	79.4	79.5

Source: Western Australian Department of Education and Training (unpublished data)

Continued . . .



ABORIGINAL EDUCATIONAL ATTAINMENT: AUSTRALIAN RESEARCH *(continued)*

Interstate comparisons

National literacy and numeracy benchmarks are part of an agreement by all Australian Education Ministers, through the Ministerial Council for Education, Employment, Training and Youth Affairs (MCEETYA), to enable each State and Territory to annually report aggregate student achievement data based on a common set of measurement standards. This allows for comparisons to be made across jurisdictions and for national level reporting. Data was first reported for 1999, and is currently available for children in Years 3, 5 and 7. WALNA data is the Western Australian component of the national benchmark testing.³

While there were variations across the states in terms of the proportion of students achieving the national benchmarks, the proportion of Aboriginal students meeting the benchmark in each test was consistently lower when compared with the performance of all students.

Across all tests and testing years, the greatest differences in performance levels between Aboriginal students and all students were observed in the Northern Territory and Western Australia. In Year 7 writing, reading and numeracy testing, the difference in the proportion of Aboriginal and all students in these two jurisdictions meeting the benchmark was between 30 and 40 percentage points.

Also evident in these data were marked declines in the proportion of Aboriginal students achieving the national benchmark between Year 3 and Year 7 testing across all Australian states. This result was most noticeable in numeracy testing, where the decline in the proportion of Aboriginal students achieving the numeracy benchmark from Year 3 to Year 7 ranged between 15 to 50 percentage points.

Time series data covering the period 1999–2003 also allow Australia-wide comparisons of the performance of Aboriginal and all students in reading, writing and numeracy testing and an assessment of how these are changing over time. The following figure shows the proportion of Aboriginal students achieving the benchmarks in Year 3 and Year 7 testing. The corresponding proportion for all Australian students is also provided for comparison. Clearly evident from these data is the lower level of performance of Aboriginal students relative to all Australian students. This difference was most pronounced in Year 7 numeracy and reading testing (The Year 7 benchmark data has only been available nationally since 2001). Moreover, there has been little or no progress in closing the gap in academic performance levels in primary school in recent years.

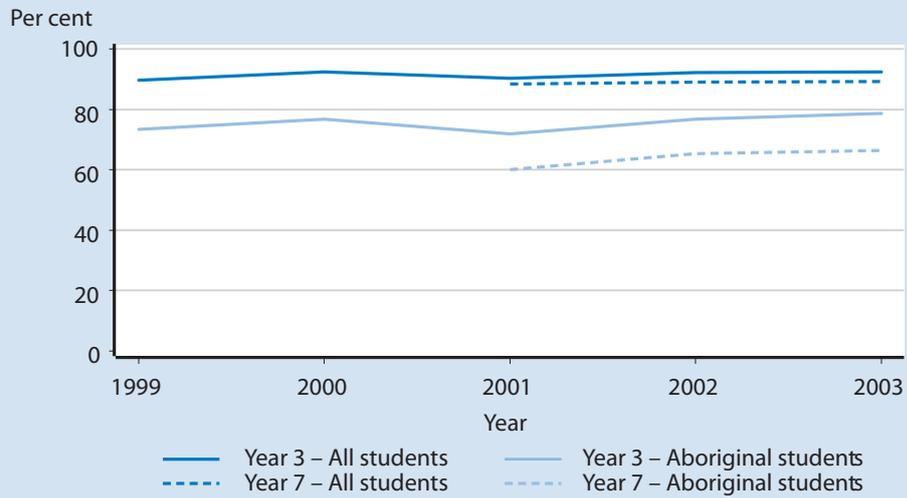
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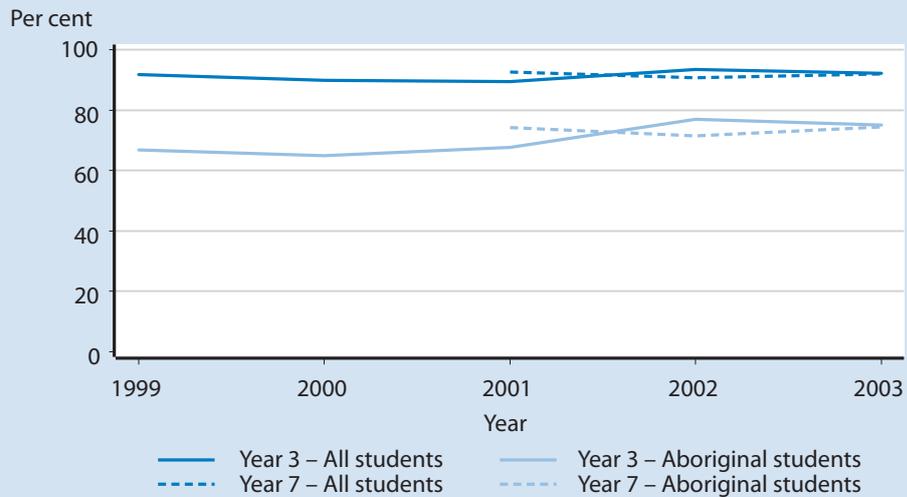
ABORIGINAL EDUCATIONAL ATTAINMENT: AUSTRALIAN RESEARCH *(continued)*

AUSTRALIAN STUDENTS — PROPORTION ACHIEVING THE NATIONAL BENCHMARKS IN READING, WRITING AND NUMERACY, BY YEAR

Reading



Writing

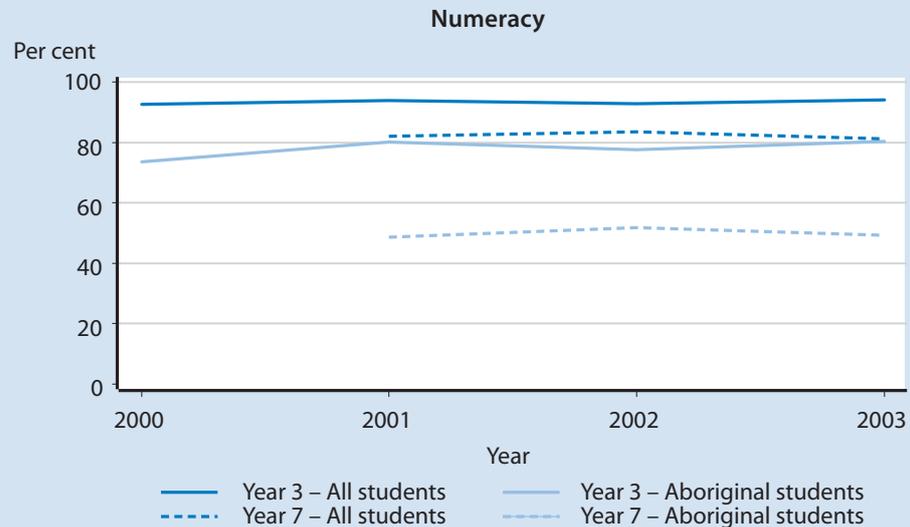


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ABORIGINAL EDUCATIONAL ATTAINMENT: AUSTRALIAN RESEARCH (continued)

AUSTRALIAN STUDENTS — PROPORTION ACHIEVING THE NATIONAL BENCHMARKS IN READING, WRITING AND NUMERACY, BY YEAR (continued)



National comparisons

The 1996 *National School English Literacy Survey* (NSELS) collected information on a wide range of literacy achievements of Year 3 and Year 5 students in Australian schools.^{4,5} Achievement was assessed in various aspects of literacy including reading, writing, spelling, listening and viewing.

As part of this survey, a Special Indigenous Sample (SIS) was also collected. This consisted of sampling students in schools reporting at least five Aboriginal students in both Year 3 and Year 5. For this reason, the SIS was not a nationally representative sample of all Aboriginal students and so direct comparisons between Aboriginal students and all students cannot be made. Rather, the SIS provides a picture of the literacy achievement of a subgroup of Aboriginal students living in predominantly rural and remote areas where Aboriginal students are more concentrated. WAACHS analysis of academic performance by relative isolation, suggests that the academic performance of Aboriginal students is lower in more isolated areas, so this should be borne in mind when interpreting the results of the SIS survey.

Findings from the NSELS highlighted that students in the SIS have very low average levels of English literacy achievement. Survey results showed that in terms of English literacy achievement, students in the SIS were three to four year levels below other students.⁵ Aboriginal students also faced barriers in achieving national standards in reading and writing. Less than 20 per cent of Year 3 Aboriginal students in the SIS achieved the identified reading standards and 29 per cent met the writing standards. In contrast, over 70 per cent of all surveyed students in Year 3 achieved the reading and writing standards. The disparity in educational outcomes between Aboriginal students and all students persisted in Year 5 testing, where 23 per cent of Aboriginal students met the identified performance standard in reading and 24 per cent in writing. The comparable proportions of all students achieving the benchmarks was over 75 per cent in both reading and writing.⁴

Continued



ABORIGINAL EDUCATIONAL ATTAINMENT: AUSTRALIAN RESEARCH *(continued)*

While students in the SIS with the highest level of literacy skill in Year 3 appeared to make good progress between Year 3 and Year 5, the NSELS found consistent evidence across all aspects of literacy that those Aboriginal students with very low levels of literacy skill in Year 3 made little or no progress by Year 5.

TEACHER RATED OVERALL ACADEMIC PERFORMANCE AND DEMOGRAPHIC FACTORS

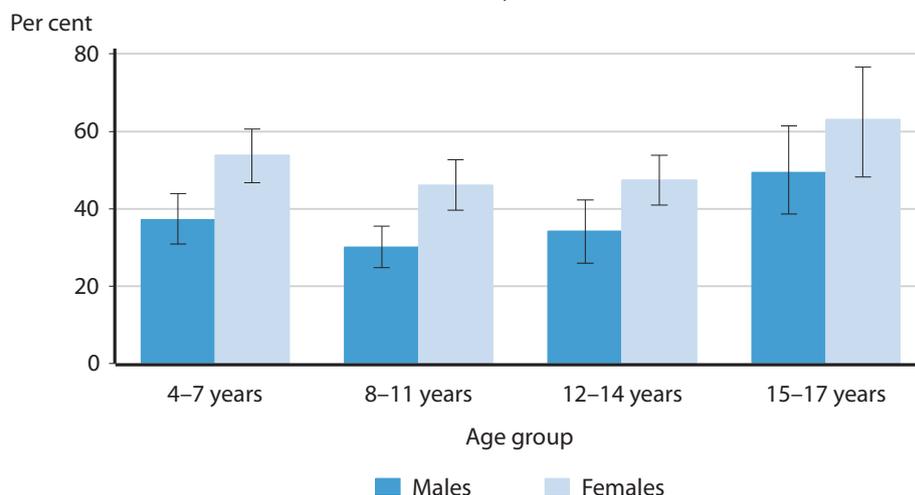
The following sections describe the relationship between teacher rated academic performance and student’s sex, year at school, LORI and category of school.

SEX AND AGE OF STUDENT

Over one half of female Aboriginal students were rated at average or above average academic performance based on teacher reports (50.4 per cent; CI: 46.5%–54.2%). This was significantly higher than the corresponding proportion for males (35.0 per cent; CI: 31.6%–38.6%) (Table 5.7).

The highest proportion of students rated at average or above average academic performance was females aged 15-17 years (63.1 per cent; CI: 48.3%–76.6%). Across all age groups, a higher proportion of females were rated at average or above average academic performance relative to male students, although these differences only reached statistical significance for students aged 4-7 years and 8-11 years (Figure 5.4).

FIGURE 5.4: ABORIGINAL STUDENTS AGED 4-17 YEARS — PROPORTION AT AVERAGE OR ABOVE AVERAGE ACADEMIC PERFORMANCE, BY AGE GROUP AND SEX



Source: Table 5.8

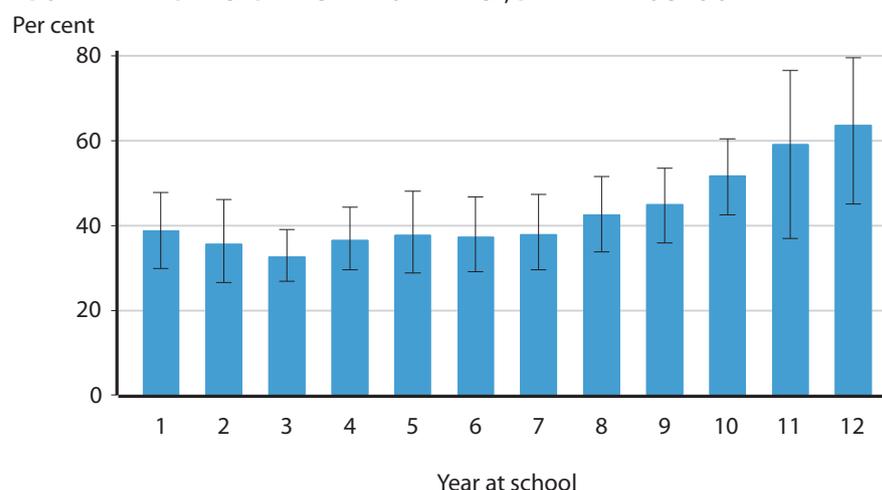
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YEAR AT SCHOOL

The proportion of Aboriginal students in Years 1 to 9 rated at average or above average academic performance ranged between 33 per cent and 45 per cent. The corresponding proportion of students in Years 10 to 12 was markedly higher at around 52 per cent to 64 per cent (Figure 5.5). A possible reason driving this result is that the poorest performing students are less likely to stay on at school beyond the last year of compulsory schooling (Year 10). This finding can also be placed in the context of lower school participation of Aboriginal students in later school grades. As noted in Table 2.3 in *Chapter 2 – Educating Aboriginal children – Issues, policy and history*, the proportion of Aboriginal students that attended school declined markedly in Years 11 and 12. Less than one quarter (24.0 per cent; CI: 17.9%–30.7%) of all Aboriginal children aged 17 years were attending school.

FIGURE 5.5: ABORIGINAL STUDENTS AGED 4–17 YEARS — PROPORTION AT AVERAGE OR ABOVE AVERAGE ACADEMIC PERFORMANCE, BY YEAR AT SCHOOL



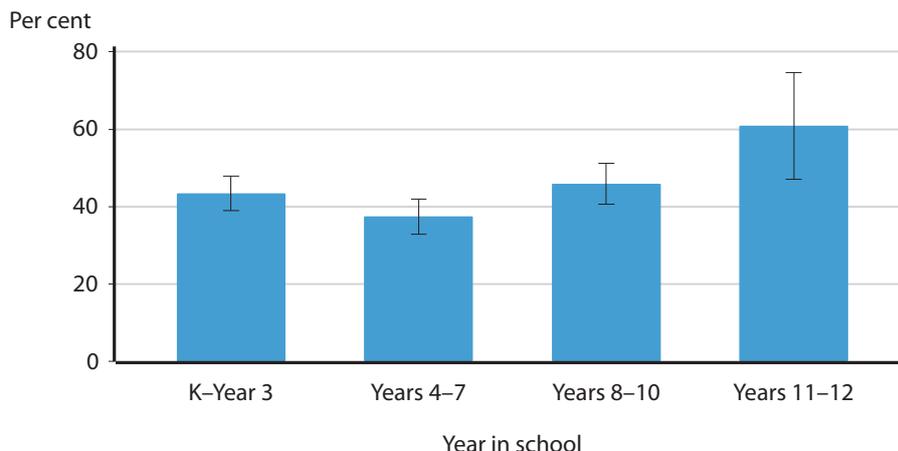
Source: Table 5.9

The level of academic performance of Aboriginal students has been further analysed by year at school (Figure 5.6). Over six in ten students (60.8 per cent; CI: 47.0%–74.7%) in Years 11 and 12 were rated at average or above average academic performance. The corresponding proportion for students in Years 4–7 was significantly lower at 37.3 per cent (CI: 32.9%–41.9%).

When interpreting academic performance by year at school, it should be noted that apparent retention rates for Aboriginal students from Year 8 onwards fall even though this group of students are still of compulsory school attendance age. Data obtained from the Western Australian Department of Education and Training (DET) indicate that in 2005, the apparent progression rates for Aboriginal students into Year 8 (from Year 7) declined by a little over 1 percentage point. The corresponding fall in Year 9 (from Year 8) was around 5 percentage points.⁶ If it is the case that poorest performing students are more likely to leave the school system than better performing students, then this will have a slight impact on the reported data in Figures 5.5 and 5.6, as only Aboriginal students remaining in the school system were able to participate in the survey and receive teacher ratings.



FIGURE 5.6: ABORIGINAL STUDENTS AGED 4–17 YEARS — PROPORTION AT AVERAGE OR ABOVE AVERAGE ACADEMIC PERFORMANCE, BY YEAR LEVEL OF STUDENT

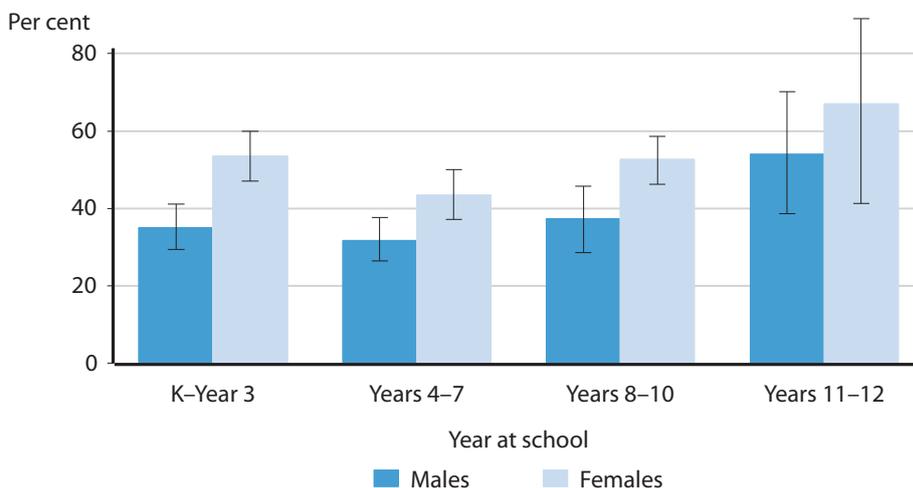


Source: Table 5.10

YEAR AT SCHOOL AND SEX

Almost seven in ten (67.0 per cent; CI: 41.3%–89.0%) female students in Years 11 and 12 were rated at average or above average academic performance. In comparison to male students, a higher proportion of female students were rated at average or above average academic performance across all year levels, although this difference was only significant for students in the kindergarten to Year 3 and Years 8–10 groups (Figure 5.7).

FIGURE 5.7: ABORIGINAL STUDENTS AGED 4–17 YEARS — PROPORTION AT AVERAGE OR ABOVE AVERAGE ACADEMIC PERFORMANCE, BY YEAR AT SCHOOL AND SEX



Source: Table 5.11

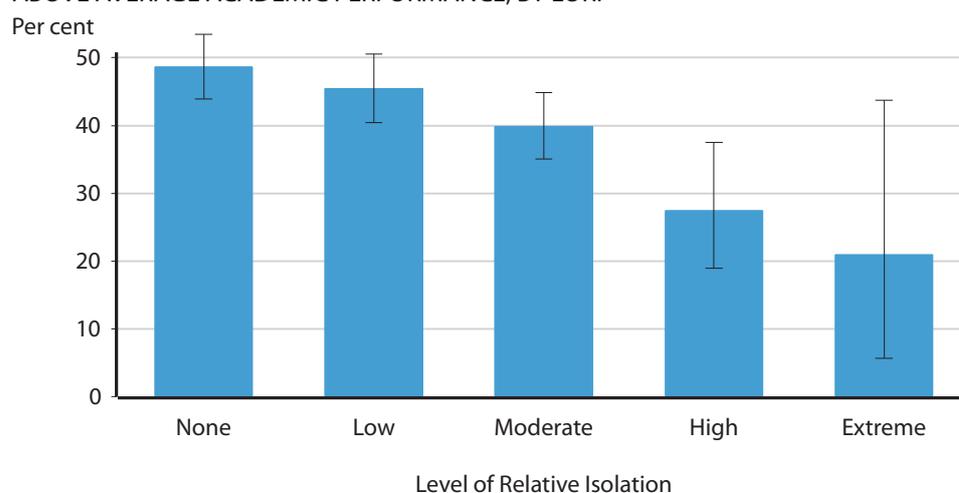
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LEVEL OF RELATIVE ISOLATION

The academic performance of Aboriginal students varied across levels of relative isolation. The proportion of students rated at average or above average academic performance declined as levels of relative isolation increased. A little under one half (48.6 per cent; CI: 43.9 %–53.4%) of Aboriginal students were found to be at average or above average academic performance in the Perth metropolitan area. The corresponding proportion in areas of extreme isolation was 20.9 per cent (CI: 5.7%–43.7%) (Figure 5.8).

FIGURE 5.8: ABORIGINAL STUDENTS AGED 4–17 YEARS — PROPORTION AT AVERAGE OR ABOVE AVERAGE ACADEMIC PERFORMANCE, BY LORI



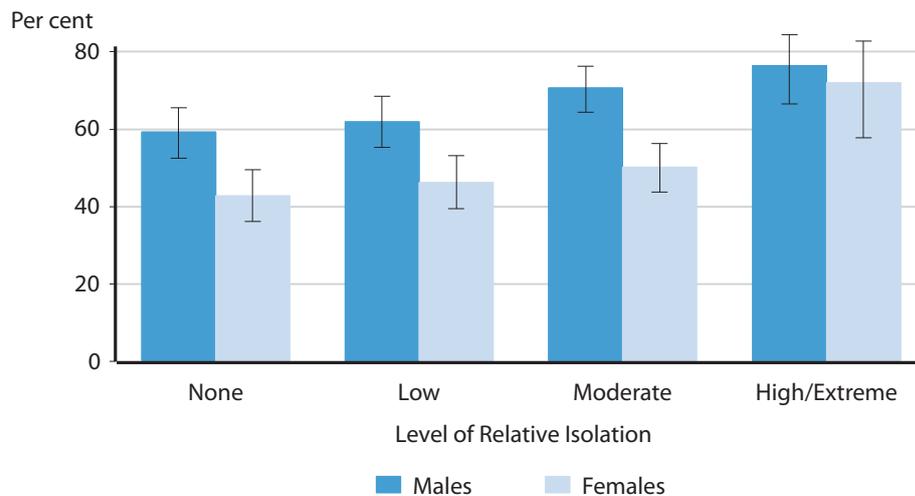
Source: Table 5.12

LEVEL OF RELATIVE ISOLATION AND SEX

Within each level of relative isolation, a higher proportion of male Aboriginal students were at low academic performance compared with female students. This difference was most prominent in areas of moderate isolation, where 70.6 per cent (CI: 64.4%–76.3%) of male students were rated at low academic performance compared with half of female students (50.2 per cent; CI: 43.7%–56.3%) (Figure 5.9).



FIGURE 5.9: ABORIGINAL STUDENTS AGED 4–17 YEARS — PROPORTION AT LOW ACADEMIC PERFORMANCE, BY LORI AND SEX



Source: Table 5.13

LEVEL OF RELATIVE ISOLATION AND AGE

Across all levels of relative isolation, there was a trend towards a higher proportion of Aboriginal students aged 4–11 years being rated at low academic performance than students aged 12–17 years, although this difference was not statistically significant (Table 5.14).

LEVEL OF RELATIVE ISOLATION AND YEAR AT SCHOOL

Aboriginal students academic performance was also analysed by LORI and year at school. No significant association was found between LORI and year at school and academic performance.

CATEGORY OF SCHOOL

The academic performance of Aboriginal students was also analysed by the category of school that they attended, but no association was found (Table 5.15).

Analysis of student performance by school’s Socioeconomic Index (SEI) score (see *Glossary*) is reported in Chapter 6.

5



ACADEMIC PERFORMANCE OF ABORIGINAL STUDENTS: A COMPARISON WITH SURVEY RESULTS FROM THE 1960s

The WAACHS findings of considerable educational disparity between Aboriginal students and all students in Western Australia can be placed in the context of survey findings from 1965–66,⁷ where the academic attainments of 1,084 ‘part-Aboriginal children’ (this was the language employed at the time to describe the Aboriginal children included in the 1965–66 survey) attending schools in the south-west region of Western Australia were compared with 273 European children attending Belmont High School. Teachers of surveyed students rated students on a three-point scale — above average, average or below average. Results for the Aboriginal and Belmont High School students are presented in the table below.

WESTERN AUSTRALIAN STUDENTS — TEACHER RATINGS OF ACADEMIC PERFORMANCE, 1965–1966

Subject	Rating	Aboriginal students		Belmont High School students	
		Number	%	Number	%
Reading	Above average	62	6	93	34
	Average	495	49	128	47
	Below average	450	45	52	19
English	Above average	48	5	87	35
	Average	451	47	131	47
	Below average	455	48	52	18
Spelling	Above average	111	12	111	41
	Average	443	48	107	40
	Below average	365	40	51	19
Arithmetic	Above average	56	6	105	39
	Average	386	39	100	37
	Below average	548	55	65	24
General knowledge	Above average	32	3	89	35
	Average	433	45	130	48
	Below average	500	52	44	17

Results from the 1965–66 survey show that between 40 and 55 per cent of Aboriginal students were rated by their teachers as below average in reading, English, spelling, arithmetic and general knowledge. For the European students, the corresponding proportions were much lower, ranging between 17 per cent and 24 per cent.

As noted in Chapter 2, the widespread exclusion of Aboriginal students from education was practiced until the 1950s. In the 1940s, one estimate put the proportion of Aboriginal children throughout Australia attending state schools at 7 per cent, with a further 25 per cent receiving any education at all (most of these in missions).⁸ Much has changed since the 1960s in terms of Aboriginal participation in education, with almost all Aboriginal children of school age enrolled in school. Educational curricula and delivery have changed markedly for all children.

Continued



ACADEMIC PERFORMANCE OF ABORIGINAL STUDENTS: A COMPARISON WITH SURVEY RESULTS FROM THE 1960s (*continued*)

While results from the 1965–66 survey are not directly comparable with findings from the WAACHS, it is significant that the proportion of Aboriginal students rated at below age level by their teachers has changed little between the mid-1960s and the present day. In 1965–66, between 40 and 55 per cent of Aboriginal students in the south-west region of Western Australia were rated by their teachers as below age level in various measures of academic performance. In comparison, the WAACHS found that the proportion of all Western Australian Aboriginal students rated at below age level in various measures of academic performance ranges between 57 and 59 per cent.

MODELLING OVERALL ACADEMIC PERFORMANCE – ASSOCIATIONS WITH DEMOGRAPHIC FACTORS

The association between the demographic variables analysed above and ratings of low academic performance was further investigated using multivariate logistic regression modelling (see *Glossary*).

A model that tested the association between academic performance and the four demographic variables analysed above (sex, age, LORI and category of school) was estimated. All four demographic factors were found to be significant predictors of the likelihood of low academic performance. Figure 5.10 presents the results of this model.

Sex. Male students were over twice as likely (Odds Ratio 2.09; CI: 1.70–2.57) to be rated at low academic performance compared with females.

Age. With regard to age differences in academic performance, 12–14 year-olds were around 1.5 times more likely (Odds Ratio 1.53; CI: 1.13–2.07) to be rated as having low academic performance relative to students aged 4–7 years.

Level of Relative Isolation. Relative to Aboriginal students residing in the Perth metropolitan area, Aboriginal students living in areas of high relative isolation were three times as likely (Odds Ratio 3.01; CI: 1.80–5.05) to be rated at low academic performance. The corresponding odds ratio for students living in extremely isolated areas was 3.51 (CI: 1.90–6.51).

Category of school. Students attending Independent schools were almost twice as likely (Odds ratio 1.86; CI: 1.06–3.26) to be rated at low academic performance, compared with students attending government schools. However, as noted in *Chapter 3 — Western Australian Schools*, a very small proportion of Aboriginal students attended Independent schools (2.3 per cent; CI: 1.2%–3.6%). There are also differences between Government, Catholic and Independent schools in terms of their location (i.e. relative isolation) and the student populations they serve, that may also be driving this result. Given the substantial differences in demographic characteristics between the student populations in Government, Catholic and Independent schools, the model results do not imply that one sector is doing better than any other for Aboriginal children.



FIGURE 5.10: ABORIGINAL STUDENTS AGED 4–17 YEARS — LIKELIHOOD OF LOW ACADEMIC PERFORMANCE ASSOCIATED WITH DEMOGRAPHIC FACTORS

<i>Parameter</i>	<i>Odds Ratio</i>	<i>95% CI</i>
Sex—		
Male	2.09	(1.70 - 2.57)
Female	1.00	
Age group—		
4–7 years	1.00	
8–11 years	1.36	(1.06 - 1.74)
12–14 years	1.53	(1.13 - 2.07)
15–17 years	0.70	(0.46 - 1.06)
Level of Relative Isolation—		
None	1.00	
Low	0.97	(0.72 - 1.30)
Moderate	1.42	(0.98 - 2.06)
High	3.01	(1.80 - 5.05)
Extreme	3.51	(1.90 - 6.51)
Category of school—		
Government	1.00	
Aboriginal community governed school	0.96	(0.41 - 2.28)
Catholic	1.08	(0.74 - 1.57)
Independent	1.86	(1.06 - 3.26)

MATRICES AND WORD DEFINITIONS TESTING

The survey data also allowed for some direct assessment of verbal and non-verbal performances of the survey students. Teachers administered short assessments of visuo-spatial reasoning (Matrices) and English Word Definitions to students at the time of the survey (see commentary box entitled *Verbal and non-verbal performance measures*).



VERBAL AND NON-VERBAL PERFORMANCE MEASURES

The 1993 *Western Australian Child Health Survey* (WA CHS) used two measures of verbal and non-verbal performance administered by teachers to the survey students.¹ Identical measures, procedures and normative standards were used in the WAACHS. These measures are taken from the 1983 *British Ability Scales*.⁹

Matrices and Word Definitions tests

The first test was a Matrices test designed to measure non-verbal visuo-spatial reasoning. This test has 11 items where students were asked to complete a pattern or design. The second test was a Word Definitions test in which students were asked to provide definitions for twenty words of progressive difficulty.

The raw score of each test can be converted into an ability score as well as a centile score, based on a scoring algorithm that takes into account the test score and the age of the child at the time of the test. The centile score can range from 0 to 100 and provides an indication of the child's performance in relation to other children. For example, a centile score of 75 indicates that, on average, 75 children out of 100 would score at the same level or below, and 25 out of 100 would score higher.

In this survey, the centile score is the primary measure used to assess the Matrices test and Word Definitions abilities of the students.

The selection of English language word definitions was made in consultation with the survey's Aboriginal Steering Committee and the Education Reference Group that supported the schools component of the survey. Some students speak English as a second (or third) language – approximately 12.9 per cent (CI: 10.9%–15.1%) of primary carers reported that at least one child in their care was conversant in an Aboriginal language.¹⁰ English, however, remains the primary language of instruction in Western Australia and some indication of student proficiency in English was seen to be important.

The provision of a non-verbal measure (i.e. Matrices) was also seen to be desirable as it was less likely to be influenced by proficiency in English. These measures were also selected because identical measures were previously used in the 1993 WA CHS.¹

Matrices and Word Definitions – Response issues

Of the students for whom WAACHS obtained school and teacher information, 82.0 per cent (CI: 79.9%–83.9%) had completed a Matrices test, while slightly less students had completed a Word Definitions test (78.9 per cent; CI: 76.6%–81.1%). There are several contributing factors to non-completion of tests by surveyed students.

Unlike the Principal's and Teacher's questionnaires, the Matrices and Word Definitions tests required the presence of the selected child within the school before the tests could be administered. Each child would generally be taken outside or to a room away from the rest of the class by the classroom teacher and have both tests administered. This process could take up to 30 minutes per child and required

Continued . . .



VERBAL AND NON-VERBAL PERFORMANCE MEASURES *(continued)*

arrangements for supervision of the rest of the class. The testing had to be conducted individually to ensure students could not influence each other's response.

In some schools, particularly those with larger numbers of Aboriginal children, this may have represented an extra difficulty for teachers over and above the requirement for information not involving the direct participation of each child.

Additionally, there were issues of both general absenteeism and mobility between schools that meant the selected student was not always present at a particular school. Also, because the school survey collection spanned more than one academic year, the mobility issue was compounded (e.g. moving from primary to high school; or finishing school altogether). These and other issues related to non-response are discussed in Chapter 1.

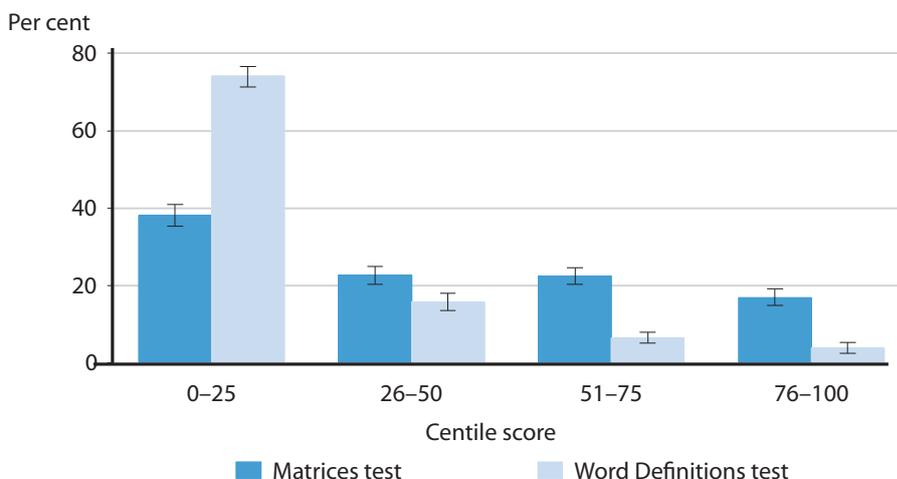
As previously noted (see commentary box entitled *Verbal and non-verbal performance measures*) it was not possible to collect Matrices and Word definitions tests for all surveyed students. For those Aboriginal students who completed a Matrices test, 38.1 per cent (CI: 35.3%–41.0%) scored in the 25th centile or below, while 16.9 per cent (CI: 14.9%–19.1%) scored in the 76th centile or above (Table 5.16).

Compared to the Matrices test results, Aboriginal students performed to a lower standard in the Word Definitions test. Almost three-quarters (74.1 per cent; CI: 71.3%–76.6%) of students who completed a Word Definitions test scored in the 25th centile or below. Less than four per cent of Aboriginal students scored in the 76th centile or above (3.8 per cent; CI: 2.5%–5.3%) (Figure 5.11).

The same Matrices and Word Definitions tests were administered to all Western Australian students in the 1993 WA CHS. However, in the 1993 WA CHS only students aged 5–16 years completed these two tests. The distribution of test results for all students is shown in Figure 5.12. Western Australian students performed to a higher standard in the Matrices test relative to the Word Definitions test. An estimated 35.1 per cent of students (CI: 32.3%–38.0%) scored in the 76th centile or above in the Matrices test. The corresponding proportion for the Word Definitions test was significantly lower at 18.3 per cent (CI: 15.8%–21.1%).

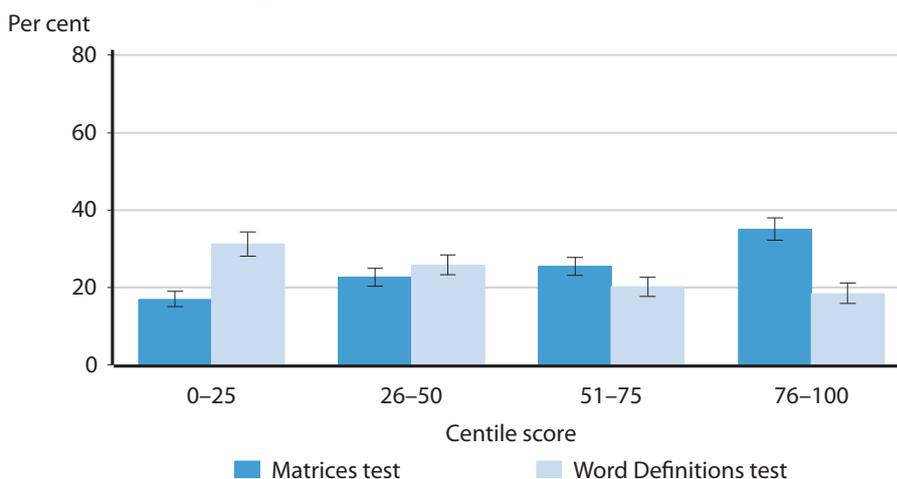


FIGURE 5.11: ABORIGINAL STUDENTS AGED 4–17 YEARS — CENTILE SCORES FOR MATRICES AND WORD DEFINITIONS TESTS



Source: Tables 5.16 & 5.17

FIGURE 5.12: ALL STUDENTS AGED 5–16 YEARS — CENTILE SCORES FOR MATRICES AND WORD DEFINITIONS TESTS



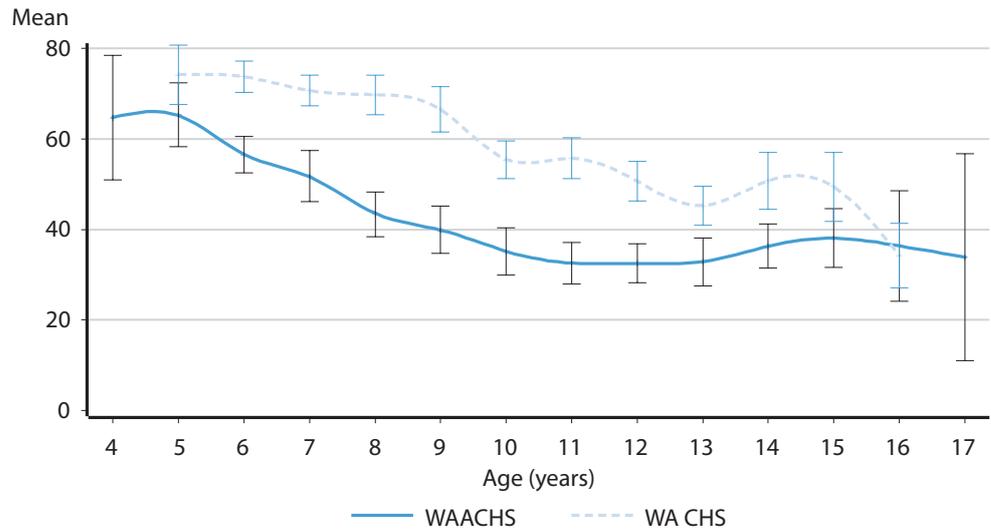
Source: Tables 5.18 & 5.19

Further evidence of the higher level of achievement of Aboriginal students in the Matrices test relative to the Word Definitions test is provided through analysis of the mean centile scores. The mean centile score for the Matrices test was 42 (CI: 40–44). This was significantly higher than the mean centile score for the Words Definitions test (19; CI: 17–20) (Table 5.20).

In comparison, all students scored significantly higher in both the Matrices test (59; CI: 57–61) and the Word Definitions test (45; CI: 43–47) (Table 5.21). These differences between Aboriginal and all students are also evident when further analysed by age (Figures 5.13 and 5.14).

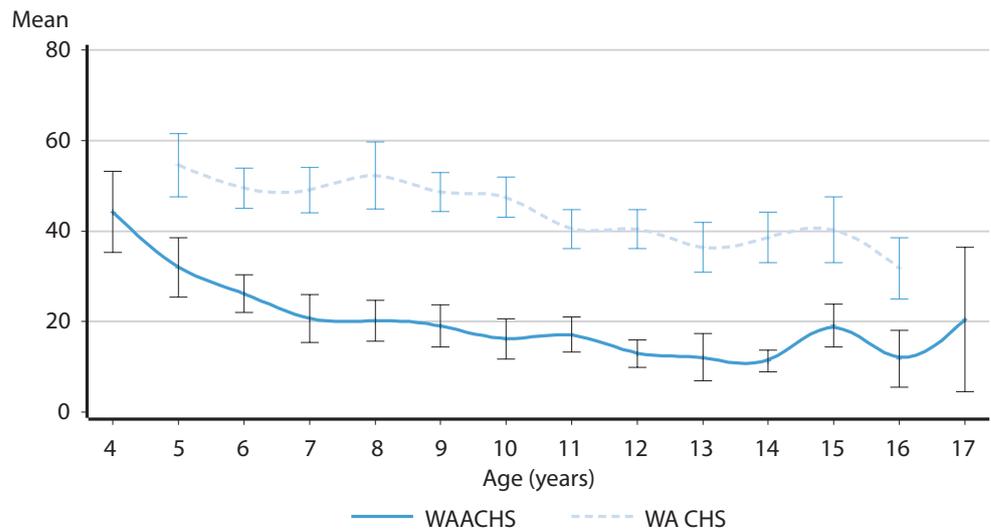


FIGURE 5.13: STUDENTS AGED 4–17 YEARS — MEAN MATRICES CENTILE SCORES, BY AGE, WAACHS COMPARED WITH WA CHS



Source: Tables 5.20 & 5.21

FIGURE 5.14: STUDENTS AGED 4–17 YEARS — MEAN WORD DEFINITIONS CENTILE SCORES, BY AGE, WAACHS COMPARED WITH WA CHS



Source: Tables 5.20 & 5.21

It was also observed that the mean centile score for Aboriginal students in both tests declines markedly from around age 4 or 5 years. In contrast the mean centile score for all students tends to decline at a later age — between 9 and 10 years.



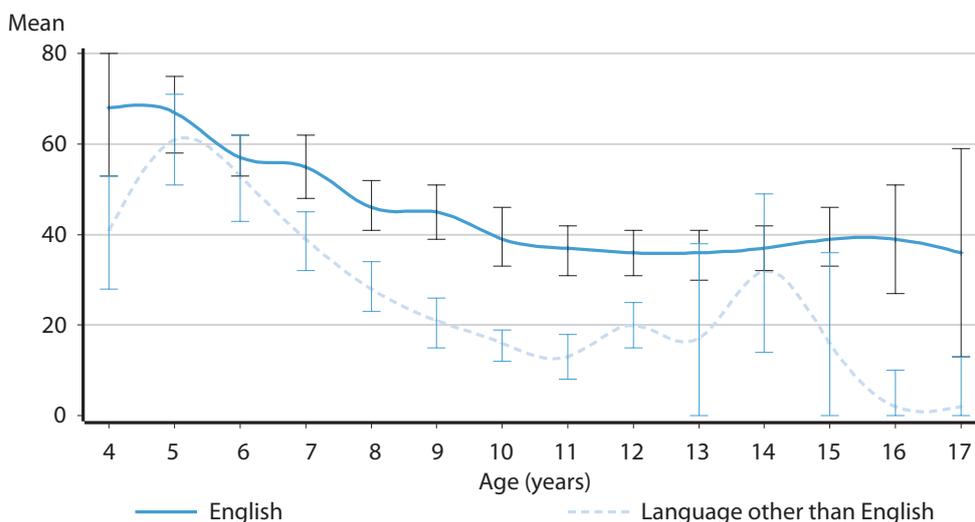
MATRICES AND WORD DEFINITIONS TEST SCORES BY LANGUAGE SPOKEN IN THE CLASSROOM

Recognising potential issues surrounding the appropriateness of English language Word Definitions tests for students who do not speak English as a first language, further analysis of the Matrices and Word Definitions test scores by language spoken in the classroom was also undertaken. For further information on language spoken see *Main language spoken* in the *Glossary*.

For Aboriginal students whose main language spoken in the classroom was English, 71.5 per cent (CI: 68.4%–74.5%) scored in the 25th centile or below on the Word Definitions test. A significantly higher proportion (87.6 per cent; CI: 82.4%–91.8%) whose main language spoken in the classroom was Aboriginal English scored in the lowest 25th centile band. This finding also extended to those students whose main language was Kriol/Creole, where the corresponding proportion was 91.8 per cent (CI: 81.5%–97.9%) (Table 5.22).

Mean centile scores for both tests have also been analysed by language spoken. Aboriginal students whose main language spoken in the classroom was English scored significantly higher in both tests, relative to students who spoke a language other than English. The mean centile score in the Matrices test for students who spoke English was 44 (CI: 42–46), while for students who spoke a language other than English the mean centile score was 29 (CI: 26–31) (Table 5.23). The mean centile scores for the Word Definitions test was 20 (CI: 19–22) for students who spoke English and 11 (CI: 8–13) for students who spoke a language other than English (Table 5.24). Further analysis of mean centile scores by age also shows higher average scores for students who spoke English across most age groups. The mean score in both tests also tended to decline with age, regardless of the language spoken in the classroom (Figures 5.15 and 5.16).

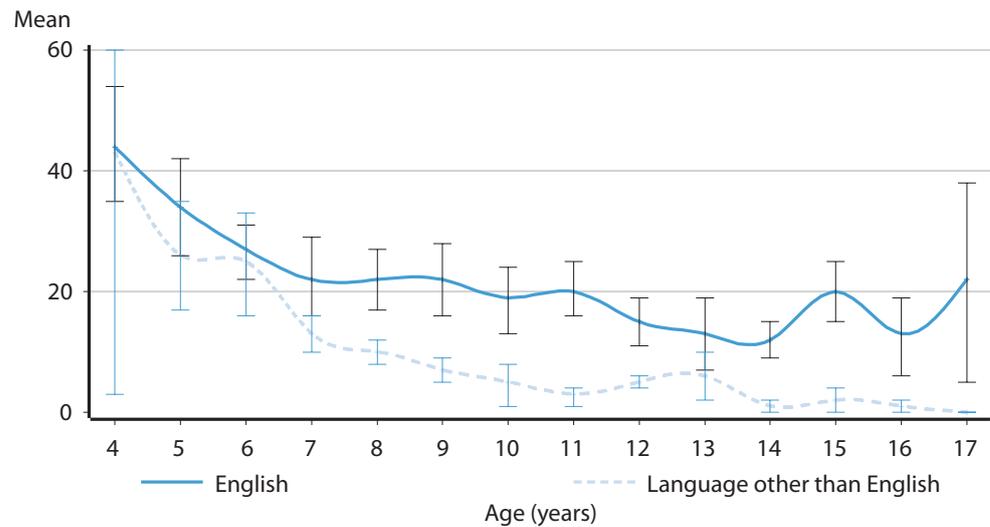
FIGURE 5.15: ABORIGINAL STUDENTS AGED 4–17 YEARS — MEAN MATRICES CENTILE SCORE, BY AGE AND LANGUAGE SPOKEN IN THE CLASSROOM



Source: Table 5.23



FIGURE 5.16: ABORIGINAL STUDENTS AGED 4–17 YEARS — MEAN WORD DEFINITIONS CENTILE SCORE, BY AGE AND LANGUAGE SPOKEN IN THE CLASSROOM



Source: Table 5.24

The gap in performance between Aboriginal students and all students can not be attributed solely to language spoken by the student. While there are differences in performance between Aboriginal students who speak English and Aboriginal students who speak a language other than English, a comparison of the results of the Matrices and Word Definitions test restricted to Aboriginal students who speak English with the corresponding results for all Aboriginal students (Tables 5.20, 5.22 and 5.23) reveals no significant difference in performance across the two groups.

These findings for Aboriginal students can also be placed in the context of data reported in the 2003–2004 Western Australian Department of Education and Training *Annual Report*.¹¹ National benchmark testing covering the period 1999–2004 showed little difference in the proportion of students with a Language Background Other Than English (LBOTE) achieving the reading, writing, spelling and numeracy benchmarks compared with all students. Table 5.25 presents the average difference in the proportion meeting the benchmark for the two groups in each test over the period 1999–2004. As shown in this table, the average difference in the four tests in Years 3, 5 and 7 testing between students from a language background other than English and all students ranged between 1–9 percentage points. The corresponding differences between Aboriginal students and all students were of a much greater magnitude, where the differences in the proportion achieving the benchmarks in Year 7 testing in 2004 were between 30 and 44 percentage points (see commentary box entitled *Aboriginal educational attainment: Australian research*).



ABORIGINAL STUDENTS AND THE EARLY YEARS OF SCHOOL

The Matrices and Word Definitions tests administered in the WAACHS are broad indicators of the verbal and non-verbal performances of Aboriginal students. The centile scores analysed in this chapter are best appreciated in terms of their:

- ◆ low level on entry to school and disparity when compared with all Western Australian students
- ◆ pattern of rapid decline with age
- ◆ association with other measures of school performance.

Identical measures have been used for both Aboriginal and all Western Australian students.

The general level of performance of Aboriginal students on both the Matrices and Word Definitions tests is consistently lower than all Western Australian students across the entire period of development from ages 4–16 years. This difference is substantial, it is persistent throughout all age groups, and even after accounting for students whose first language is not English, it remains at the same level for both measures.

The highest levels of performance for Aboriginal students on these measures is observed at age 4 years and performances thereafter rapidly decline through ages 5–9 years. At age 10 years, levels of poor performances appear to be entrenched and no improvement is shown in each advancing cross-sectional age cohort. While a similar trend is observed in the non-Aboriginal population, this trend is not as strong, and starts at a later age. The implication of this for Aboriginal children is a serious one. Too many Aboriginal students fall behind in the first years of schooling and never catch up. As will be seen in the following section, this observation is paralleled in the longitudinal data on the same children over time for the benchmark measures.

Government and non-Government organisations, such as Good Beginnings and the National Investment for the Early Years (NIFTeY) alike, have placed considerable effort into the development of ‘Early Years’ strategies.¹² This reflects a worldwide trend in the importance of investments that seek to improve health and wellbeing as a major mechanism for improving population capability.^{13,14} Similarly, the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) has identified nine health issues relevant to the development of Aboriginal children aged 0–8 years and central to the improvement of their educational outcomes.¹⁵ Based on the findings presented in this chapter, two broad courses of action are suggested.

Firstly, there is a critical need to implement early developmental programmes for Aboriginal infants and kindergarten children that substantially increase their readiness to start school. This entails increasing the exposure of Aboriginal infants, children and their carers to enriched educational day care and kindergarten. While the current provision of these services is not within the ambit of educational authorities, the evidence here suggests that improving access to, and participation in, day care and kindergarten programmes of high quality, frequency and intensity

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ABORIGINAL STUDENTS AND THE EARLY YEARS *(continued)*

would yield fundamental improvements in their school entry skills. This will require changing the programme content and focus of existing day care and kindergarten programmes to explicitly support enriched educational care. Thus, the findings here are of direct relevance to both the Australian Government Department of Family and Community Services and the Western Australian Department of Education and Training. How can existing day care and kindergarten programmes for children be improved to provide developmental enrichment that will result in measurable benefit to Aboriginal children on entry into pre-school and primary school? The answer to this question requires government direction to these departments to recommend and implement administrative and programme strategies that will secure these improvements for children.

Secondly, with respect to what the education system has direct control over, enriched curricula that support Aboriginal child development from ages 4–12 years is essential to modify, halt and reverse the measured declines in their performance levels over this period. This will require improving population rates of Aboriginal school attendance (see *Chapter 4*), as well as a focus on evidence-based teaching and curricula that specifically targets the developmental skills and capacities, and basic literacy and numeracy skills of Aboriginal children. Issues around poor academic performance are further discussed in *Chapter 6*.

Without these strategies, the continued pattern of school failure, non-attendance, low performance, early school leaving, and poor lifelong educational opportunity and benefit will confront successive governments, Aboriginal communities and the families within these communities.

WESTERN AUSTRALIAN LITERACY AND NUMERACY ASSESSMENT

Data on the academic achievement of Aboriginal students has also been obtained by linking survey responses to Western Australian Literacy and Numeracy Assessment (WALNA) data held by the Western Australian Department of Education and Training (see commentary box entitled *Western Australia Literacy and Numeracy Assessment (WALNA) data*).



WESTERN AUSTRALIAN LITERACY AND NUMERACY ASSESSMENT (WALNA) DATA

The Western Australian Literacy and Numeracy Assessment (WALNA) is a curriculum-based assessment that tests students' knowledge and skills in numeracy, reading, spelling and writing. The WALNA test is administered annually to students in Years 3, 5 and 7.¹⁶

The WALNA assessment programme commenced in 1998 when students in Year 3 were assessed in reading, writing and spelling. A year later the programme was extended to Year 5 students and a numeracy test was added. In 2001, the WALNA was further extended to Year 7 students. In 2004, some 79,000 Western Australian students from all Government, Catholic and Independent schools were assessed in the WALNA programme. All WALNA tests are scored using the Western Australian Measuring Standards in Education scale. This scale allows comparisons over time within a particular WALNA test. Comparisons between tests (e.g. reading and numeracy) can not be made. Test results can also be related to national benchmark figures. These benchmarks are the agreed standards of performance that professional educators across the country deem to be the minimum level required for Years 3, 5 and 7 students. Achievement in relation to the national benchmark also provides important information about students at educational risk.¹⁷

The Western Australian Department of Education and Training has provided WALNA programme scores for Aboriginal students aged 4–17 years who participated in the WAACHS school survey. The WALNA data covers the period 1999–2004 and has been linked to WAACHS student records. Over two-thirds of eligible Aboriginal students were successfully matched to a WALNA record. Throughout this chapter, analysis involving WALNA test scores are reported in terms of achievement in relation to the national benchmarks.

A comparison of the WALNA tests scores linked to the survey students' records with WALNA data available for all Western Australian Aboriginal students show good agreement between the two data sources. In absolute terms, the benchmark WALNA results of the WAACHS sample are within an average of 3.9 percentage points of the published WALNA data for all Western Australian Aboriginal students.²

It was not possible to link every student record in the WAACHS with a WALNA record. This was due to the time frame covered by the WALNA data. WALNA data for testing in Years 3 and 5 were obtained for the period 1999–2004. Linked data covering Year 7 testing were available from 2001–2004. As noted in *Chapter 1 — The Survey – Objectives, Design and Process*, the WAACHS surveyed students over the period 2001–2002. Therefore a student surveyed as part of the WAACHS in 2001 in Year 9 or above, would not have an opportunity to undertake a WALNA test, and therefore no link could be made for this group of students.

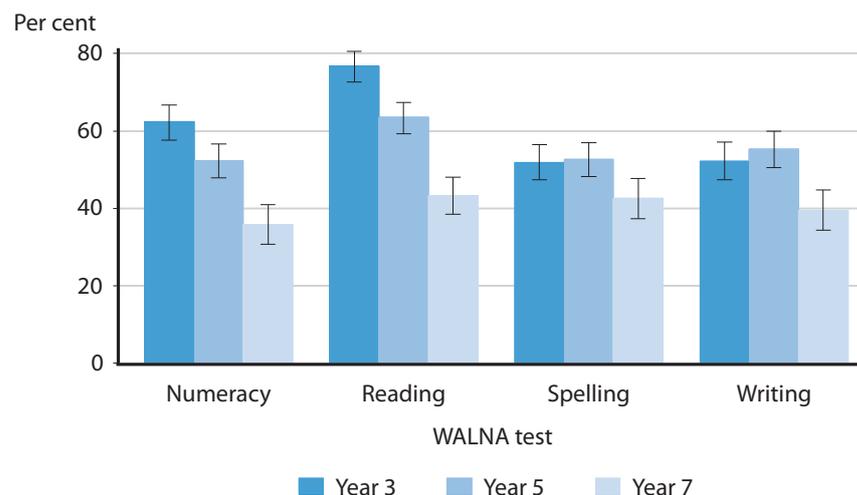
After allowing for differences between the WAACHS and WALNA data, 69.1 per cent (CI: 66.0%–72.0%) of eligible Aboriginal students were successfully matched to a WALNA record. Of students eligible to undertake WALNA testing, 27.4 per cent (CI: 24.8%–30.1%) had completed at least one WALNA test in a given year. A little over three in ten students (31.5 per cent; CI: 28.8%–34.4%) were successfully matched to two WALNA test years, and 10.1 per cent (CI: 8.9%–11.6%) completed at least one WALNA test in all three years (Table 5.26).



ACHIEVEMENT OF THE NATIONAL BENCHMARKS

The Aboriginal student benchmark results in numeracy and reading declined with each successive round of testing. The proportion achieving the national benchmarks was highest in Year 3 testing, where results ranged from 52 per cent to 77 per cent. For Year 7 testing, the proportion achieving the benchmark for each test was significantly lower, ranging between 36 per cent and 43 per cent (Figure 5.17).

FIGURE 5.17: ABORIGINAL STUDENTS AGED 4–17 YEARS — PROPORTION ACHIEVING THE NATIONAL BENCHMARK



Source: Table 5.27

ABORIGINAL EDUCATIONAL ATTAINMENT: INTERNATIONAL COMPARISONS

As a means of placing the WAACHS findings in a wider context, international comparisons of the educational performance of Australian Aboriginal students have been made with Indigenous students in New Zealand, Canada and the United States. These comparisons help to shed light on how Australian Aboriginal students are doing in relation to other Indigenous populations around the world.

New Zealand

The National Certificate of Educational Achievement is New Zealand's main national qualification for secondary school students. National standards have been set in each area of learning. Overall, in 2002, 59 per cent of Māori students achieved the national standard; the corresponding proportion of all candidates attaining the national standard was around 10 percentage points higher at 70 per cent. Between 52 and 60 per cent of Māori students attained the national standard in the English language, mathematics, science and technology learning areas. The corresponding proportion of non-Māori students was 13 to 17 percentage points higher in these learning areas.¹⁸

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ABORIGINAL EDUCATIONAL ATTAINMENT: INTERNATIONAL COMPARISONS *(continued)*

Canada

While data on the academic performance of Canadian Aboriginal students is limited, the Province of British Columbia collects and reports information on Aboriginal student performance. Student level data are available for Aboriginal students enrolled in public schools, however academic performance data are unavailable for Aboriginal students enrolled in schools on-reserve. In the 2001–2002 public school year, there were about 11,500 Aboriginal students on-reserve and approximately 36,500 Aboriginal off-reserve students, suggesting that academic performance data were available for slightly over 76 per cent of Aboriginal students in the province of British Columbia.

The academic progress of Canadian students is assessed via a standardised test (i.e. Foundation Skills Assessment) that is administered in Grades 4, 7 and 10 and covers reading, first-draft writing and numeracy. Foundation Skills Assessment data between 2000 and 2002 show that the proportions of Aboriginal students in British Columbia meeting or exceeding expectations in each testing area were between 10 and 30 percentage points lower than the corresponding proportion of non-Aboriginal students.¹⁹

United States

Educational progress of students in the United States of America is assessed through the National Assessment of Educational Progress.²⁰ This United States Department of Education programme administers various subject area assessments to nationally representative samples of students. In 1994, 48 per cent of American Indian Year 4 students scored 'at or above basic' on the reading assessment, compared with 60 per cent of all American students. In Year 8 testing the corresponding proportions were 63 per cent and 70 per cent, respectively.²¹

Comparison with Western Australia

While each country uses its own system of assessing educational performance, it is clear that Indigenous students have lower levels of educational attainment in New Zealand, Canada and the United States, as is the case in Australia. Nevertheless, the disparity between Indigenous and non-Indigenous students is substantially greater in Australia than in these other three countries. This is similar to the findings from the WAACHS with respect to country level disparities in health where it was noted that, approximately thirty years ago, Indigenous peoples in Canada, New Zealand and the United States suffered similar high infant mortality rates to those observed in Australia. By 1999 though, the infant mortality rate in First Nations Canadian people had reduced to about 1.4 times higher than the total Canadian population and, in the United States, the figures for American Indian and Alaskan Native populations had reduced to about 1.2 times higher than the total population. In contrast, the infant mortality rate in the Australian Aboriginal population between 1999–2001 was 16.0 per 1,000 live births or 2.7 times higher than the total Australian population.²²

Continued . . .

ABORIGINAL EDUCATIONAL ATTAINMENT: INTERNATIONAL COMPARISONS *(continued)*

Health disparities and educational disparities are interlinked.¹⁵ In discussing the relative narrowing of health disparities in Indigenous and non-Indigenous populations in these countries, it was noted, for example, that North American governments have had a longer history of specialised health services for Indigenous people, spent more per capita, established better traditions of partnerships and involvement of Indigenous people, and made genuine advances in recognising the past history of colonisation and dispossession.¹⁰ It is possible that these mechanisms and processes contribute both indirectly, through the better health and development of children, and directly, through their application to educational arrangements, to the better school performance of Indigenous children in these countries. While there would be value in a systematic study into the role these mechanisms have (and have had) in partially addressing disparity, Indigenous children in all of these countries still suffer significant disadvantage in outcomes, and Australian Aboriginal children specifically, continue to sustain some of the poorest outcomes of any.

PERFORMANCE OF ABORIGINAL STUDENTS OVER TIME

The longitudinal nature of the WALNA data allow the assessment of Aboriginal students' academic performance over time and also provides an insight into how the school performance of Aboriginal students is changing over time.

In order to assess the pattern of WALNA results over time, students that had completed a Year 3 test and subsequently completed a test in both Years 5 and 7 were identified. A separate analysis of this group of students who sat all three tests was then undertaken.

Firstly, it should be noted that relatively few students completed all three tests in Years 3, 5 and 7. The estimated number of Aboriginal students completing all 3 Year tests in numeracy, reading, writing or spelling ranged between 1,100 and 1,300 students, representing between 5.6 and 6.6 per cent of all Aboriginal students (Table 5.28).

Analysis of the cohort of students who completed all three WALNA Year tests reveals that levels of performance declined markedly with increasing age. The proportion of these students achieving the numeracy benchmark declined by over 20 percentage points over the four year period — from 64.9 per cent (CI: 58.2%–71.3%) to 41.9 per cent (CI: 34.7%–49.5%). Over the same period, the proportion that achieved the reading benchmark declined by almost 30 percentage points — from 84.6 per cent (CI: 76.4%–90.2%) to 54.7 per cent (CI: 46.6%–62.7%). The proportion of Aboriginal students achieving the national spelling benchmark also declined between Year 3 and Year 7 testing, although this difference was not statistically significant (Figure 5.18).



FIGURE 5.18: ABORIGINAL STUDENTS AGED 4–17 YEARS WHO COMPLETED ALL THREE WALNA YEAR TESTS — PROPORTION ACHIEVING THE NATIONAL BENCHMARK

Benchmark test	Year 3 benchmark test		Year 5 benchmark test		Year 7 benchmark test	
	%	95% CI	%	95% CI	%	95% CI
Numeracy	64.9	(58.2 - 71.3)	56.8	(50.1 - 63.6)	41.9	(34.7 - 49.5)
Reading	84.6	(76.4 - 90.2)	72.9	(65.6 - 79.8)	54.7	(46.6 - 62.7)
Spelling	58.1	(50.6 - 64.9)	56.8	(49.4 - 63.9)	43.7	(36.5 - 51.3)
Writing	43.7	(35.6 - 52.6)	73.9	(67.1 - 79.7)	44.4	(36.8 - 52.5)

It is also possible that Aboriginal students who completed all three WALNA year tests vary systematically in some way when compared with students who did not complete all three year tests. This has been examined by comparing academic performance as measured by teacher ratings for those who completed all three year tests with Aboriginal students that did not complete all three WALNA year tests. This comparison revealed no significant difference in academic performance between the two groups.

MEASURES OF STUDENTS' PERFORMANCE – RELIABILITY OF TEACHER RATED PERFORMANCE

The teacher's rating of overall academic performance is used principally as an indicator of academic performance in this volume. To what extent do teacher ratings of school performance in the survey children correspond with measures of Matrices, Word Definitions and the WALNA data? Answers to this question provide some perspective on the usefulness of the teacher ratings as an indicator of academic performance.

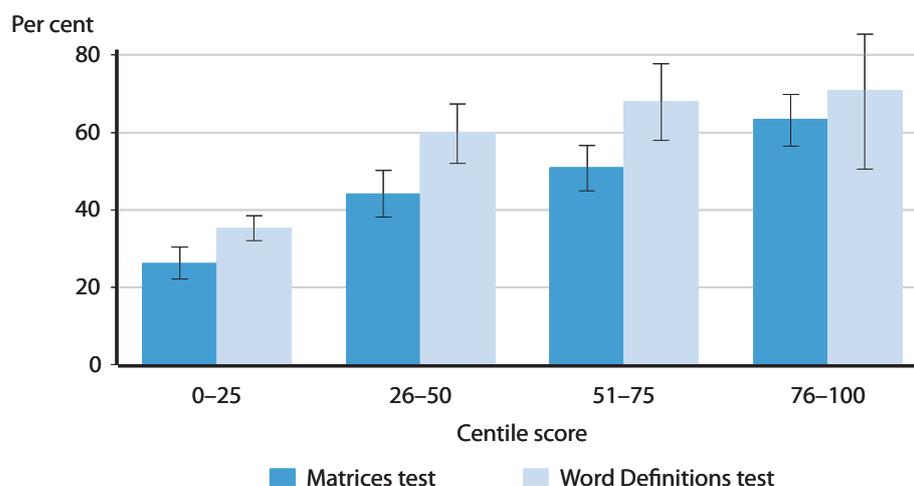
COMPARING TEACHER RATINGS WITH MATRICES AND WORD DEFINITIONS TESTS

The data show that there is a significant correspondence between students' performance on the Matrices/Word Definitions tests and teacher ratings of academic performance. In general, better performances on these tests were associated with higher teacher ratings of academic performance.

Teachers rated 63.4 per cent (CI: 56.5%–69.6%) of students at average or above average in their academic performance where their Matrices centile score was in the highest quartile. This was significantly higher than the 26.1 per cent (CI: 22.2%–30.4%) of students rated by their teachers at average or above average academic performance that scored in the lowest quartile in the Matrices test. Similarly, teachers rated 70.9 per cent (CI: 50.6%–85.3%) of students at average or above average academic performance where their Word Definitions performance was in the highest quartile. Only 35.2 per cent (CI: 32.0%–38.5%) of students rated by their teachers at average or above average academic performance scored in the lowest quartile of the Word Definitions test (Figure 5.19).



FIGURE 5.19: ABORIGINAL STUDENTS AGED 4–17 YEARS — PROPORTION AT AVERAGE OR ABOVE AVERAGE ACADEMIC PERFORMANCE, BY CENTILE SCORES FOR MATRICES AND WORD DEFINITIONS TESTS



Source: Tables 5.29 & 5.30

A similar analysis was also undertaken to assess the validity of teacher rated numeracy (by analysing Matrices test centile scores) and teacher rated literacy (with reference to the Word Definitions centile score). The results of this validation are fully reported in *Appendix B — Further validation of teacher rated academic performance*. As was the case for teacher ratings of overall academic performance, good agreement between teacher ratings and the verbal and non-verbal tests was found. This finding strongly supports teacher ratings as being a reliable measure of academic performance.

THE USE OF TEACHER RATINGS AS A MEASURE OF ACADEMIC PERFORMANCE

Several measures of academic performance of Aboriginal students were collected in the WAACHS. These indicators included teacher ratings of academic performance, completion of two tests (Matrices and Word Definitions) and national benchmark data in numeracy, reading, writing and spelling (WALNA testing in Years 3, 5 and 7).

Analysis of these measures shows a substantial proportion of Aboriginal students having low academic performance relative to all students. These findings were consistent across all of the measures of academic performance collected in the WAACHS, strongly suggesting that the lower academic performance of Aboriginal students is a genuine result not related to shortcomings in any of the individual assessment methods.

A key measure of academic performance available in the survey is teacher rated academic performance, as this is available for all students in the survey. The factors associated with low academic performance based on teacher rated academic performance are further analysed in Chapter 6. However, before this measure can be used it is important to assess how reliably this item measures academic performance. This step is critical because if teacher rated performance is not

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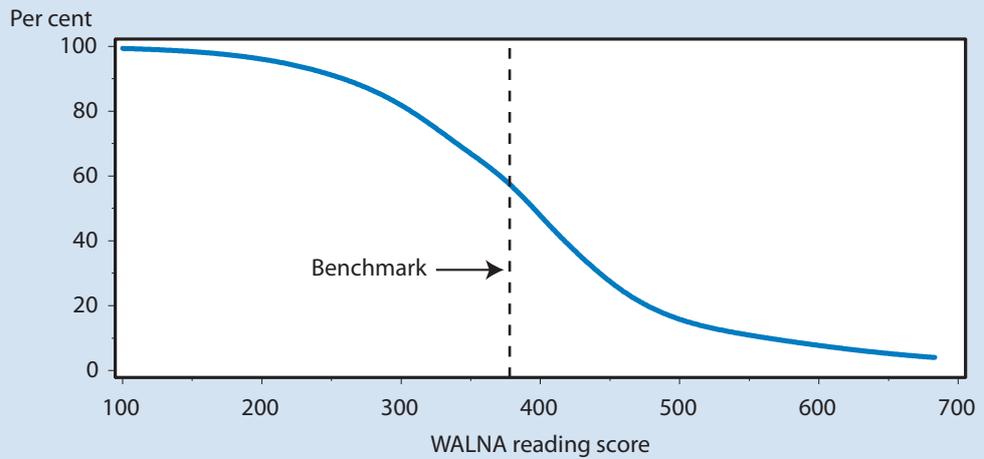


THE USE OF TEACHER RATINGS AS A MEASURE OF ACADEMIC PERFORMANCE *(continued)*

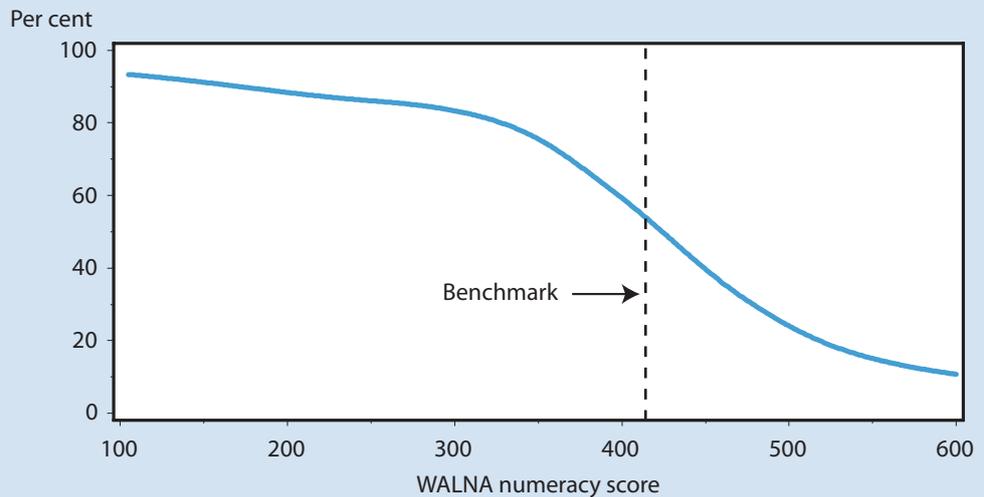
accurately measuring academic performance then any conclusions drawn from subsequent analysis of teacher rated performance may be misleading.

Teacher ratings of low academic performance have also been analysed with reference to WALNA test scores on a continuous scale. The figures below show the proportion of Aboriginal students rated at low academic performance, by WALNA scores in the Year 7 reading and numeracy tests.

ABORIGINAL STUDENTS AGED 4–17 YEARS — PROPORTION AT LOW ACADEMIC PERFORMANCE, BY YEAR 7 WALNA READING TEST SCORE



ABORIGINAL STUDENTS AGED 4–17 YEARS — PROPORTION AT LOW ACADEMIC PERFORMANCE, BY YEAR 7 WALNA NUMERACY TEST SCORE



In this chapter, teacher ratings of overall academic performance have been validated with reference to other independent measures of academic performance including students' results in the Matrices, Word Definitions and WALNA testing.

Continued

5



THE USE OF TEACHER RATINGS AS A MEASURE OF ACADEMIC PERFORMANCE *(continued)*

When interpreting these results, several factors are worth noting:

- ◆ While teacher ratings and the independent testing measure broadly similar concepts (i.e. students' academic performance), they do not measure the exact same concept of academic performance.
- ◆ Teachers have the benefit of observing students' school work over the course of a year. Test results reflect a student's performance on the particular day the test was undertaken, while teachers' assessments draw upon varying lengths of experience in several teaching and learning contexts.

Bearing in mind these differences, and noting that observed associations are not expected to be perfect, findings from this chapter highlight the strong associations between teacher rated academic performance and other independent measures of academic performance including Matrices and Word Definitions test results and national benchmark results in Numeracy, Reading, Writing and Spelling. These results suggest that the teacher rated academic performance information collected in the WAACHS is a reliable measure of academic performance. Confirmation of the reliability of teacher rated academic performance is important, not just of itself, but because it allows the exploration of the relationship between academic performance and other life outcomes. Factors influencing low academic performance of Aboriginal students are examined in *Chapter 6 — Factors influencing academic performance*.

TEACHER RATINGS AND THE WALNA DATA

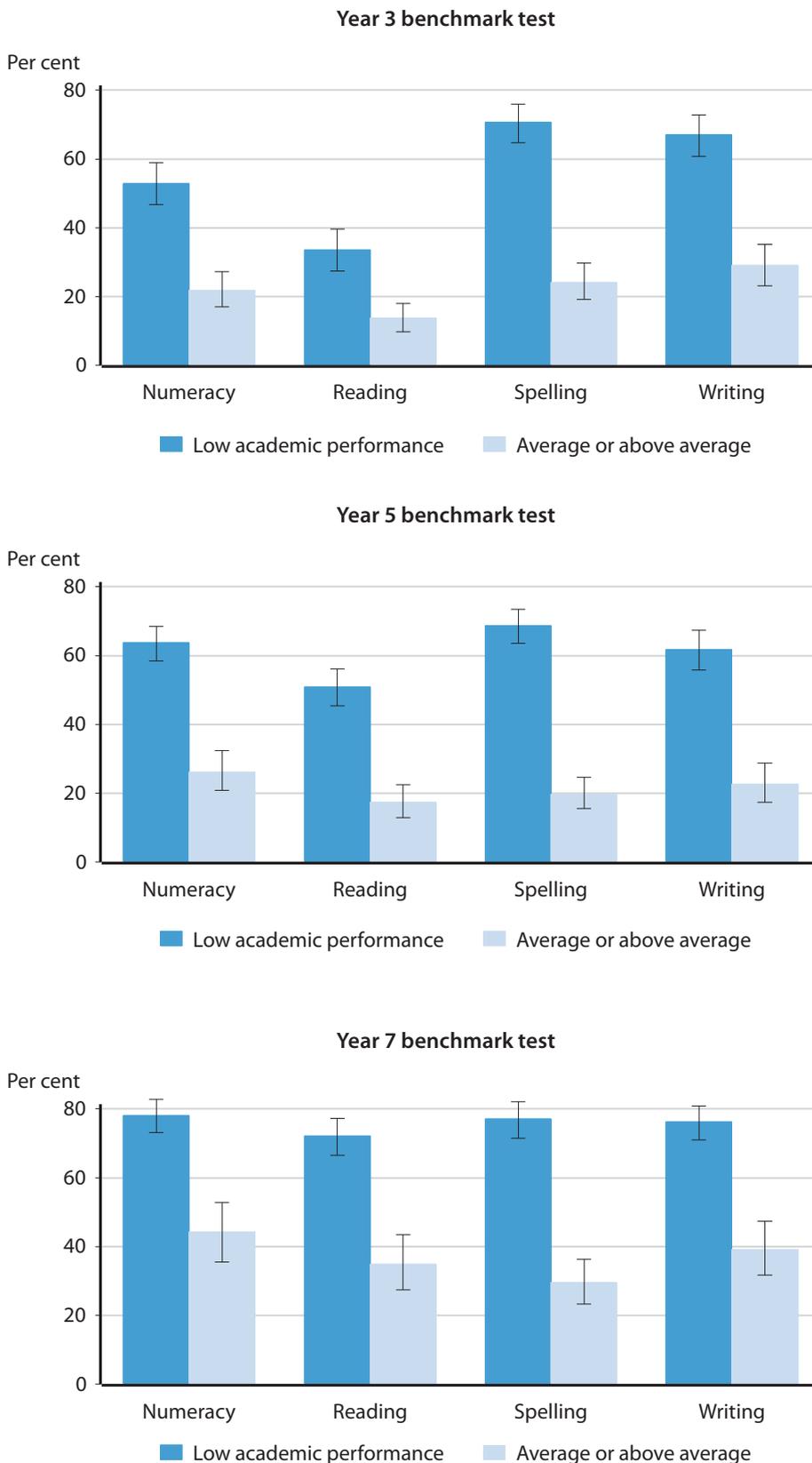
The WALNA data were also analysed to assess how well test scores correlated with teacher rated performance. Figure 5.20 shows the proportion of students that did not achieve the national benchmark for each of the four WALNA tests (numeracy, spelling, reading and writing) for Years 3, 5 and 7, by teacher rated overall academic performance.

Of those Aboriginal students who were successfully linked to a WALNA record, the proportion not meeting WALNA numeracy, reading, spelling and writing benchmarks across the three years was between 20–50 percentage points higher for students that were rated at low academic performance compared with students rated at average or above average academic performance (Table 5.31). These results further support teacher ratings as being a reliable measure of academic performance.

Further validation of teacher rated numeracy and literacy with reference to WALNA benchmarks are reported in *Appendix B — Further validation of teacher rated academic performance*.



FIGURE 5.20: ABORIGINAL STUDENTS AGED 4–17 YEARS — PROPORTION NOT ACHIEVING THE NATIONAL BENCHMARK, BY TEACHER RATED ACADEMIC PERFORMANCE



Source: Table 5.31

5



THE ACADEMIC PERFORMANCE OF ABORIGINAL STUDENTS: KEY MESSAGES

This chapter describes the methods used in the survey to measure various aspects of the school performance of Aboriginal children and young people. The central measure used is the teacher's rating of overall academic performance. Additional teacher ratings of performance in literacy and numeracy were also gathered. Information on the academic performance of Aboriginal students from the teacher's perspective has also been supplemented with measures of Matrices and English Word Definitions and administrative data covering national benchmark testing.

Disparity in educational outcomes

The WAACHS data highlight the considerable disparity between the academic performance of Western Australian Aboriginal students and all Western Australian students. Almost 58 per cent of Aboriginal students aged 4–17 years were rated by their teachers as having low overall academic performance (either far below age or somewhat below age in comparison with all students of the same age). This was significantly higher than the comparable proportion of all Western Australian students aged 4–16 years — less than 20 per cent of these students were rated at low academic performance. This finding of poor academic performance is consistent with other independent measures of academic performance available from the survey.

At present there are indications of slight improvements in the numbers of Aboriginal children and young people that are being retained into Years 11 and 12 (see *Chapter 2*) and of greater numbers of Aboriginal students entering post-school training and education.²³ While these are encouraging signs of some progress in educational participation, the findings provided in this chapter and *Chapter 4 — Attendance at school* highlight the vast disparities in educational outcomes faced by Aboriginal students and stress the challenges ahead in the establishment of parity and equity in achieving outcomes comparable to those for all Australian children.

These findings of large disparities in educational outcomes between Aboriginal students and all students are somewhat analogous to outcomes in the health domain where it is widely acknowledged that Aboriginal children suffer poorer health outcomes relative to non-Aboriginal children.^{10,24} For example, 11 per cent of Aboriginal children were born with low birth weight compared with 7 per cent of all children.¹⁰ In terms of risk of clinically significant emotional or behavioural difficulties, 24 per cent of Aboriginal children were at high risk, compared with 15 per cent of non-Aboriginal children.²⁴ In comparison, 58 per cent of Aboriginal students were rated at low academic performance — three times the proportion of all students at low academic performance (19 per cent). The much larger difference in educational outcomes for Aboriginal children relative to all children suggests that a greater level of investment and focus of attention is required in the education sector to improve outcomes for Aboriginal students.

Continued . . .



THE ACADEMIC PERFORMANCE OF ABORIGINAL STUDENTS: KEY MESSAGES *(continued)*

Lessons from overseas

Not only are Western Australian Aboriginal students faring poorly in comparison to all Western Australian students, international evidence points to the relative educational disadvantage of Indigenous students in New Zealand, Canada and the United States being much smaller than the observed inequality between Australian Aboriginal students and non-Aboriginal students. Perhaps this is best evidenced by the observation that most of the North American educational policy in the area of poor academic performance is targeted at Black and Hispanic students rather than Native American students. This suggests that a possibly useful step in the formulation of new educational policy would be a systematic examination of the overseas experience to identify what policy instruments have and have not worked in bridging the gap in educational outcomes. What, if any, of these lessons from overseas could be applied in the context of improving the educational outcomes of Australian Aboriginal students?

As noted in Volume One,¹⁰ Australian Aboriginal people have worse health outcomes in terms of mortality, infant mortality and chronic disease than Indigenous people in Canada, New Zealand and the United States. Each of these countries have, in different ways, achieved greater gains for Indigenous peoples over a longer period of time than Australia. It is possible that the greater disparity in educational outcomes for Aboriginal people in Australia compared with these other countries reflects the cross-sectoral improvements in Indigenous disadvantage that have been achieved in Canada, New Zealand and the United States. This might suggest that improving educational outcomes for Aboriginal people is intertwined with the overall lessening of Aboriginal disadvantage across all key sectors including health, housing, employment and economic opportunity.

Language and cultural factors

Issues of different learning styles and culture, which students from a language background other than English also possibly face, have not resulted in large educational disparities between this group and all students. The average difference in the proportion achieving the national benchmarks between students from a non-English speaking background and all students ranged between one and nine percentage points.¹¹ These differences were of a much smaller magnitude than the corresponding differences between Aboriginal students and all students which reached up to 44 percentage points in Year 7 testing.

The importance of the early years

Another important message arising from these findings is the importance of the first years of schooling for Aboriginal children. This finding is most clearly noticeable with reference to Matrices and Word Definitions test scores and national benchmark testing. The highest scores in the Matrices and Word Definitions tests for Aboriginal students were observed for children aged 4 years, thereafter students'

Continued . . .

THE ACADEMIC PERFORMANCE OF ABORIGINAL STUDENTS: KEY MESSAGES *(continued)*

performance markedly declines through the ages of 5–9 years. At ages 10 years and older, students' performances in these tests show no improvement. This pattern of results is mirrored in the national benchmark testing, where differences in the proportion of Aboriginal students meeting the national benchmark in numeracy and reading testing fell by around 30 percentage points between Years 3 and 7. Even at the earliest years, Aboriginal students have lower academic performance than non-Aboriginal children.

These results suggest that Aboriginal children start school less school-ready than other children. The majority of Aboriginal students quickly fall behind in the first years of schooling, establishing patterns of achievement that are extremely difficult to correct in later years. These results highlight the importance of early years strategies to improve the school readiness of Aboriginal children and the importance of the primary school years, particularly the first four years of formal schooling. Interventions aimed at the secondary school level are unlikely to be successful given the degree to which many Aboriginal students have fallen behind by this age.

Without strategies that support Aboriginal students from ages 4 to 12 years, it is likely that the pattern of low academic performance, poor attendance and early school leaving will continue to be issues of concern. For information on the implication of these issues for older children, see *Chapter 8 — School, health and young people*.

Findings from this chapter also highlight the strong associations between teacher rated academic performance and other independent measures of academic performance including the Matrices and Word Definitions tests and national benchmark testing. In the next chapter (*Chapter 6 — Factors influencing academic performance*), the associations between teacher rated performance and school attendance and other characteristics of the students, their carers, families and schools are explored in detail.

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DETAILED TABLES

MEASURING ACADEMIC PERFORMANCE OF ABORIGINAL STUDENTS

TABLE 5.1: ABORIGINAL STUDENTS AGED 4–17 YEARS — TEACHER RATED ACADEMIC PERFORMANCE

<i>Teacher rating</i>	<i>Number</i>	<i>95% CI</i>	<i>%</i>	<i>95% CI</i>
Overall academic performance				
Far below age	3 700	(3 290 - 4 130)	18.9	(16.8 - 21.1)
Somewhat below age	7 560	(7 070 - 8 050)	38.6	(36.1 - 41.1)
At age level	6 940	(6 440 - 7 470)	35.4	(32.9 - 38.1)
Somewhat above age	1 250	(1 020 - 1 540)	6.4	(5.2 - 7.9)
Far above age	130	(90 - 170)	0.7	(0.5 - 0.9)
Literacy				
Far below age	4 140	(3 710 - 4 600)	21.1	(18.9 - 23.5)
Somewhat below age	7 470	(6 990 - 7 950)	38.2	(35.7 - 40.6)
At age level	6 440	(5 920 - 6 960)	32.9	(30.2 - 35.6)
Somewhat above age	1 320	(1 080 - 1 600)	6.7	(5.5 - 8.2)
Far above age	220	(150 - 310)	1.1	(0.8 - 1.6)
Numeracy				
Far below age	3 410	(3 010 - 3 830)	17.4	(15.4 - 19.6)
Somewhat below age	7 850	(7 350 - 8 350)	40.0	(37.5 - 42.6)
At age level	7 150	(6 640 - 7 700)	36.5	(33.9 - 39.3)
Somewhat above age	1 030	(800 - 1 290)	5.2	(4.1 - 6.6)
Far above age	150	(100 - 220)	0.8	(0.5 - 1.1)
Total	19 600	(19 500 - 19 600)	100.0	

TABLE 5.2: ALL STUDENTS AGED 4–16 YEARS — OVERALL ACADEMIC PERFORMANCE, BY SEX

<i>Overall academic performance</i>	<i>Number</i>	<i>95% CI</i>	<i>%</i>	<i>95% CI</i>
Males				
Far below age	4 760	(3 130 - 6 970)	3.5	(2.3 - 5.2)
Somewhat below age	28 000	(23 100 - 33 700)	20.8	(17.4 - 24.4)
At age level	62 600	(56 800 - 68 900)	46.5	(42.4 - 50.6)
Somewhat above age	30 200	(25 700 - 35 400)	22.4	(19.3 - 25.8)
Far above age	6 330	(4 430 - 8 770)	4.7	(3.3 - 6.5)
Not stated	2 680	(1 450 - 4 620)	2.0	(1.1 - 3.4)
Total	135 000	(127 000 - 143 000)	100.0	
Females				
Far below age	3 220	(2 030 - 5 000)	2.3	(1.5 - 3.6)
Somewhat below age	16 400	(13 000 - 20 300)	11.9	(9.5 - 14.5)
At age level	64 300	(58 100 - 71 100)	46.4	(42.5 - 50.5)
Somewhat above age	42 500	(37 200 - 48 400)	30.6	(27.2 - 34.5)
Far above age	9 830	(7 400 - 12 700)	7.1	(5.4 - 9.2)
Not stated	2 400	(1 270 - 3 890)	1.7	(0.9 - 2.8)
Total	139 000	(131 000 - 147 000)	100.0	
Total				
Far below age	7 980	(5 800 - 10 700)	2.9	(2.1 - 3.9)
Somewhat below age	44 400	(38 300 - 51 000)	16.3	(14.0 - 18.7)
At age level	127 000	(119 000 - 135 000)	46.4	(43.5 - 49.4)
Somewhat above age	72 700	(65 600 - 79 900)	26.6	(24.0 - 29.3)
Far above age	16 200	(12 900 - 19 900)	5.9	(4.7 - 7.3)
Not stated	5 080	(3 480 - 7 310)	1.9	(1.3 - 2.7)
Total	273 000	(273 000 - 273 000)	100.0	



Source: 1993 Western Australian Child Health Survey

TABLE 5.3: ABORIGINAL STUDENTS AGED 4–17 YEARS — OVERALL ACADEMIC PERFORMANCE

<i>Student's age</i>	<i>Academic performance</i>	<i>Number</i>	<i>95% CI</i>	<i>%</i>	<i>95% CI</i>
4–16 years	Far below age	3 680	(3 270 - 4 110)	19.1	(17.0 - 21.3)
	Somewhat below age	7 480	(7 000 - 7 970)	38.7	(36.2 - 41.2)
	At age level	6 810	(6 310 - 7 330)	35.3	(32.7 - 38.0)
	Somewhat above age	1 210	(970 - 1 480)	6.2	(5.0 - 7.7)
	Far above age	130	(90 - 170)	0.7	(0.5 - 0.9)
	Total		19 300	(19 200 - 19 400)	100.0
17 years	Far below age	20	(0 - 150)	6.1	(0.3 - 48.2)
	Somewhat below age	80	(20 - 190)	30.1	(10.3 - 56.0)
	At age level	130	(80 - 200)	46.3	(23.1 - 68.5)
	Somewhat above age	50	(10 - 110)	17.5	(5.0 - 38.8)
	Far above age	0	(0 - 60)	0.0	(0.0 - 17.6)
	Total		280	(180 - 420)	100.0
Total	Far below age	3 700	(3 290 - 4 130)	18.9	(16.8 - 21.1)
	Somewhat below age	7 560	(7 070 - 8 050)	38.6	(36.1 - 41.1)
	At age level	6 940	(6 440 - 7 470)	35.4	(32.9 - 38.1)
	Somewhat above age	1 250	(1 020 - 1 540)	6.4	(5.2 - 7.9)
	Far above age	130	(90 - 170)	0.7	(0.5 - 0.9)
	Total		19 600	(19 500 - 19 600)	100.0

TABLE 5.4: ABORIGINAL STUDENTS AGED 4–17 YEARS — OVERALL ACADEMIC PERFORMANCE

<i>Academic performance</i>	<i>Number</i>	<i>95% CI</i>	<i>%</i>	<i>95% CI</i>
Low	11 300	(10 700 - 11 800)	57.5	(54.7 - 60.3)
Average or above average	8 330	(7 790 - 8 870)	42.5	(39.7 - 45.3)
Total	19 600	(19 500 - 19 600)	100.0	

TABLE 5.5: ABORIGINAL STUDENTS AGED 4–17 YEARS — OVERALL ACADEMIC PERFORMANCE, BY AGE

<i>Student's age</i>	<i>Academic performance</i>	<i>Number</i>	<i>95% CI</i>	<i>%</i>	<i>95% CI</i>
4–16 years	Low	11 200	(10 600 - 11 700)	57.8	(55.1 - 60.6)
	Average or above average	8 150	(7 620 - 8 690)	42.2	(39.4 - 44.9)
	Total	19 300	(19 200 - 19 400)	100.0	
17 years	Low	100	(30 - 230)	36.1	(14.2 - 61.7)
	Average or above average	180	(110 - 260)	63.9	(38.3 - 85.8)
	Total	280	(180 - 420)	100.0	
Total	Low	11 300	(10 700 - 11 800)	57.5	(54.7 - 60.3)
	Average or above average	8 330	(7 790 - 8 870)	42.5	(39.7 - 45.3)
	Total	19 600	(19 500 - 19 600)	100.0	



TABLE 5.6: ALL STUDENTS AGED 4–16 YEARS — OVERALL ACADEMIC PERFORMANCE, BY SEX

<i>Academic performance</i>	<i>Number</i>	<i>95% CI</i>	<i>%</i>	<i>95% CI</i>
Males				
Low	32 800	(27 600 - 38 700)	24.3	(20.8 - 28.1)
Average or above average	99 100	(92 000 - 106 000)	73.7	(69.8 - 77.2)
Not stated	2 680	(1 450 - 4 620)	2.0	(1.1 - 3.4)
Total	135 000	(127 000 - 143 000)	100.0	
Females				
Low	19 700	(15 900 - 23 800)	14.2	(11.7 - 17.1)
Average or above average	117 000	(109 000 - 124 000)	84.1	(80.9 - 86.8)
Not stated	2 400	(1 270 - 3 890)	1.7	(0.9 - 2.8)
Total	139 000	(131 000 - 147 000)	100.0	
Total				
Low	52 400	(45 600 - 59 800)	19.2	(16.7 - 21.9)
Average or above average	216 000	(208 000 - 223 000)	79.0	(76.2 - 81.5)
Not stated	5 080	(3 480 - 7 310)	1.9	(1.3 - 2.7)
Total	273 000	(273 000 - 273 000)	100.0	

Source: 1993 Western Australian Child Health Survey

TEACHER RATED OVERALL ACADEMIC PERFORMANCE AND DEMOGRAPHIC FACTORS

TABLE 5.7: ABORIGINAL STUDENTS AGED 4–17 YEARS — OVERALL ACADEMIC PERFORMANCE, BY SEX

<i>Academic performance</i>	<i>Number</i>	<i>95% CI</i>	<i>%</i>	<i>95% CI</i>
Males				
Low	6 550	(6 090 - 7 030)	65.0	(61.4 - 68.4)
Average or above average	3 530	(3 150 - 3 930)	35.0	(31.6 - 38.6)
Total	10 100	(9 600 - 10 600)	100.0	
Females				
Low	4 710	(4 280 - 5 150)	49.6	(45.8 - 53.5)
Average or above average	4 790	(4 360 - 5 250)	50.4	(46.5 - 54.2)
Total	9 500	(9 010 - 9 990)	100.0	
Total				
Low	11 300	(10 700 - 11 800)	57.5	(54.7 - 60.3)
Average or above average	8 330	(7 790 - 8 870)	42.5	(39.7 - 45.3)
Total	19 600	(19 500 - 19 600)	100.0	



TABLE 5.8: ABORIGINAL STUDENTS AGED 4–17 YEARS — OVERALL ACADEMIC PERFORMANCE, BY SEX AND AGE GROUP

Age group	Academic performance	Number	95% CI	%	95% CI
Males					
4–7 years	Low	2 080	(1 800 - 2 390)	62.9	(56.1 - 69.1)
	Average or above average	1 220	(970 - 1 520)	37.1	(30.9 - 43.9)
	Total	3 310	(2 940 - 3 710)	100.0	
8–11 years	Low	2 540	(2 210 - 2 880)	70.0	(64.5 - 75.2)
	Average or above average	1 090	(880 - 1 310)	30.0	(24.8 - 35.5)
	Total	3 620	(3 270 - 4 000)	100.0	
12–14 years	Low	1 470	(1 180 - 1 790)	65.8	(57.7 - 74.0)
	Average or above average	760	(560 - 1 000)	34.2	(26.0 - 42.3)
	Total	2 230	(1 870 - 2 600)	100.0	
15–17 years	Low	470	(340 - 640)	50.6	(38.6 - 61.4)
	Average or above average	460	(330 - 630)	49.4	(38.6 - 61.4)
	Total	930	(740 - 1 160)	100.0	
Total	Low	6 550	(6 090 - 7 030)	65.0	(61.4 - 68.4)
	Average or above average	3 530	(3 150 - 3 930)	35.0	(31.6 - 38.6)
	Total	10 100	(9 600 - 10 600)	100.0	
Females					
4–7 years	Low	1 260	(1 050 - 1 510)	46.2	(39.4 - 53.2)
	Average or above average	1 470	(1 210 - 1 770)	53.8	(46.8 - 60.6)
	Total	2 730	(2 400 - 3 090)	100.0	
8–11 years	Low	1 680	(1 440 - 1 950)	53.9	(47.4 - 60.4)
	Average or above average	1 440	(1 180 - 1 730)	46.1	(39.6 - 52.6)
	Total	3 110	(2 780 - 3 470)	100.0	
12–14 years	Low	1 410	(1 170 - 1 680)	52.6	(46.2 - 59.1)
	Average or above average	1 270	(1 060 - 1 510)	47.4	(40.9 - 53.8)
	Total	2 680	(2 360 - 3 010)	100.0	
15–17 years	Low	360	(200 - 590)	36.9	(23.4 - 51.7)
	Average or above average	620	(470 - 790)	63.1	(48.3 - 76.6)
	Total	980	(750 - 1 240)	100.0	
Total	Low	4 710	(4 280 - 5 150)	49.6	(45.8 - 53.5)
	Average or above average	4 790	(4 360 - 5 250)	50.4	(46.5 - 54.2)
	Total	9 500	(9 010 - 9 990)	100.0	
Total					
4–7 years	Low	3 340	(2 990 - 3 710)	55.4	(50.6 - 60.3)
	Average or above average	2 690	(2 330 - 3 090)	44.6	(39.7 - 49.4)
	Total	6 040	(5 580 - 6 510)	100.0	
8–11 years	Low	4 210	(3 820 - 4 630)	62.5	(58.0 - 66.8)
	Average or above average	2 520	(2 190 - 2 890)	37.5	(33.2 - 42.0)
	Total	6 740	(6 270 - 7 200)	100.0	
12–14 years	Low	2 880	(2 520 - 3 270)	58.6	(53.4 - 63.8)
	Average or above average	2 030	(1 730 - 2 360)	41.4	(36.2 - 46.6)
	Total	4 910	(4 460 - 5 370)	100.0	
15–17 years	Low	830	(620 - 1 080)	43.6	(34.9 - 52.1)
	Average or above average	1 080	(880 - 1 310)	56.4	(47.9 - 65.1)
	Total	1 910	(1 620 - 2 230)	100.0	
Total	Low	11 300	(10 700 - 11 800)	57.5	(54.7 - 60.3)
	Average or above average	8 330	(7 790 - 8 870)	42.5	(39.7 - 45.3)
	Total	19 600	(19 500 - 19 600)	100.0	



TABLE 5.9: ABORIGINAL STUDENTS AGED 4–17 YEARS — OVERALL ACADEMIC PERFORMANCE, BY YEAR AT SCHOOL

<i>Year at school</i>	<i>Academic performance</i>	<i>Number</i>	<i>95% CI</i>	<i>%</i>	<i>95% CI</i>
Pre-primary	Low	720	(560 - 910)	37.2	(29.8 - 45.4)
	Average or above average	1 210	(960 - 1 490)	62.8	(54.6 - 70.2)
	Total	1 920	(1 640 - 2 260)	100.0	
1	Low	1 020	(840 - 1 230)	61.2	(52.2 - 70.1)
	Average or above average	640	(470 - 870)	38.8	(29.9 - 47.8)
	Total	1 660	(1 400 - 1 940)	100.0	
2	Low	1 100	(890 - 1 360)	64.4	(53.8 - 73.4)
	Average or above average	610	(420 - 860)	35.6	(26.6 - 46.2)
	Total	1 710	(1 420 - 2 030)	100.0	
3	Low	1 050	(870 - 1 260)	67.4	(60.9 - 73.1)
	Average or above average	510	(410 - 620)	32.6	(26.9 - 39.1)
	Total	1 560	(1 360 - 1 790)	100.0	
4	Low	1 140	(970 - 1 320)	63.5	(55.7 - 70.4)
	Average or above average	650	(500 - 850)	36.5	(29.6 - 44.3)
	Total	1 790	(1 570 - 2 030)	100.0	
5	Low	1 020	(820 - 1 230)	62.3	(51.9 - 71.2)
	Average or above average	610	(430 - 850)	37.7	(28.8 - 48.1)
	Total	1 630	(1 370 - 1 920)	100.0	
6	Low	1 060	(800 - 1 350)	62.7	(53.3 - 70.9)
	Average or above average	630	(490 - 790)	37.3	(29.1 - 46.7)
	Total	1 690	(1 400 - 2 000)	100.0	
7	Low	1 030	(810 - 1 310)	62.1	(52.6 - 70.4)
	Average or above average	630	(470 - 810)	37.9	(29.6 - 47.4)
	Total	1 650	(1 390 - 1 970)	100.0	
8	Low	970	(760 - 1 230)	57.5	(48.4 - 66.2)
	Average or above average	720	(550 - 920)	42.5	(33.8 - 51.6)
	Total	1 690	(1 430 - 2 000)	100.0	
9	Low	920	(740 - 1 130)	55.1	(46.4 - 64.1)
	Average or above average	750	(570 - 980)	44.9	(35.9 - 53.6)
	Total	1 670	(1 410 - 1 960)	100.0	
10	Low	570	(440 - 720)	48.2	(39.5 - 57.4)
	Average or above average	610	(470 - 780)	51.8	(42.6 - 60.5)
	Total	1 180	(990 - 1 390)	100.0	
11	Low	270	(130 - 520)	40.9	(23.4 - 63.1)
	Average or above average	390	(260 - 560)	59.1	(36.9 - 76.6)
	Total	660	(450 - 920)	100.0	
12	Low	140	(70 - 250)	36.3	(20.4 - 54.9)
	Average or above average	250	(160 - 370)	63.7	(45.1 - 79.6)
	Total	400	(280 - 540)	100.0	
Ungraded class	Low	270	(140 - 470)	70.9	(43.4 - 87.4)
	Average or above average	110	(30 - 310)	29.1	(12.6 - 56.6)
	Total	380	(190 - 690)	100.0	
Total	Low	11 300	(10 700 - 11 800)	57.5	(54.7 - 60.3)
	Average or above average	8 330	(7 790 - 8 870)	42.5	(39.7 - 45.3)
	Total	19 600	(19 500 - 19 600)	100.0	



TABLE 5.10: ABORIGINAL STUDENTS AGED 4–17 YEARS — OVERALL ACADEMIC PERFORMANCE, BY YEAR AT SCHOOL

<i>Year at school</i>	<i>Academic performance</i>	<i>Number</i>	<i>95% CI</i>	<i>%</i>	<i>95% CI</i>
Years K–3	Low	3 880	(3 500 - 4 280)	56.7	(52.1 - 61.0)
	Average or above average	2 970	(2 610 - 3 370)	43.3	(39.0 - 47.9)
	Total	6 860	(6 400 - 7 330)	100.0	
Years 4–7	Low	4 240	(3 820 - 4 680)	62.7	(58.1 - 67.1)
	Average or above average	2 520	(2 190 - 2 890)	37.3	(32.9 - 41.9)
	Total	6 760	(6 290 - 7 250)	100.0	
Years 8–10	Low	2 460	(2 150 - 2 800)	54.2	(48.8 - 59.3)
	Average or above average	2 080	(1 790 - 2 400)	45.8	(40.7 - 51.2)
	Total	4 540	(4 130 - 4 960)	100.0	
Years 11–12	Low	410	(240 - 650)	39.2	(25.3 - 53.0)
	Average or above average	640	(480 - 840)	60.8	(47.0 - 74.7)
	Total	1 050	(810 - 1 340)	100.0	
Ungraded class	Low	270	(140 - 470)	70.9	(43.4 - 87.4)
	Average or above average	110	(30 - 310)	29.1	(12.6 - 56.6)
	Total	380	(190 - 690)	100.0	
Total	Low	11 300	(10 700 - 11 800)	57.5	(54.7 - 60.3)
	Average or above average	8 330	(7 790 - 8 870)	42.5	(39.7 - 45.3)
	Total	19 600	(19 500 - 19 600)	100.0	

TABLE 5.11: ABORIGINAL STUDENTS AGED 4–17 YEARS — OVERALL ACADEMIC PERFORMANCE, BY YEAR AT SCHOOL AND SEX

<i>Sex</i>	<i>Academic performance</i>	<i>Number</i>	<i>95% CI</i>	<i>%</i>	<i>95% CI</i>
Years K–3					
Males	Low	2 460	(2 160 - 2 800)	64.9	(58.9 - 70.6)
	Average or above average	1 330	(1 080 - 1 630)	35.1	(29.4 - 41.1)
	Total	3 790	(3 410 - 4 210)	100.0	
Females	Low	1 430	(1 200 - 1 680)	46.5	(40.1 - 53.0)
	Average or above average	1 640	(1 370 - 1 940)	53.5	(47.0 - 59.9)
	Total	3 060	(2 730 - 3 420)	100.0	
Total	Low	3 880	(3 500 - 4 280)	56.7	(52.1 - 61.0)
	Average or above average	2 970	(2 610 - 3 370)	43.3	(39.0 - 47.9)
	Total	6 860	(6 400 - 7 330)	100.0	
Years 4–7					
Males	Low	2 430	(2 090 - 2 800)	68.2	(62.4 - 73.6)
	Average or above average	1 130	(940 - 1 370)	31.8	(26.4 - 37.6)
	Total	3 560	(3 190 - 3 950)	100.0	
Females	Low	1 810	(1 540 - 2 100)	56.5	(49.9 - 62.8)
	Average or above average	1 390	(1 130 - 1 670)	43.5	(37.2 - 50.1)
	Total	3 200	(2 850 - 3 580)	100.0	
Total	Low	4 240	(3 820 - 4 680)	62.7	(58.1 - 67.1)
	Average or above average	2 520	(2 190 - 2 890)	37.3	(32.9 - 41.9)
	Total	6 760	(6 290 - 7 250)	100.0	

Continued . . .



TABLE 5.11 (continued): ABORIGINAL STUDENTS AGED 4–17 YEARS — OVERALL ACADEMIC PERFORMANCE, BY YEAR AT SCHOOL AND SEX

Sex	Academic performance	Number	95% CI	%	95% CI
Years 8–10					
Males	Low	1 260	(1 020 - 1 530)	62.7	(54.2 - 71.4)
	Average or above average	750	(540 - 990)	37.3	(28.6 - 45.8)
	Total	2 000	(1 690 - 2 340)	100.0	
Females	Low	1 200	(1 000 - 1 420)	47.4	(41.4 - 53.7)
	Average or above average	1 330	(1 120 - 1 570)	52.6	(46.3 - 58.6)
	Total	2 530	(2 250 - 2 840)	100.0	
Total	Low	2 460	(2 150 - 2 800)	54.2	(48.8 - 59.3)
	Average or above average	2 080	(1 790 - 2 400)	45.8	(40.7 - 51.2)
	Total	4 540	(4 130 - 4 960)	100.0	
Years 11–12					
Males	Low	230	(150 - 330)	46.0	(29.8 - 61.3)
	Average or above average	270	(160 - 420)	54.0	(38.7 - 70.2)
	Total	500	(360 - 670)	100.0	
Females	Low	180	(50 - 440)	33.0	(11.0 - 58.7)
	Average or above average	370	(260 - 520)	67.0	(41.3 - 89.0)
	Total	550	(370 - 810)	100.0	
Total	Low	410	(240 - 650)	39.2	(25.3 - 53.0)
	Average or above average	640	(480 - 840)	60.8	(47.0 - 74.7)
	Total	1 050	(810 - 1 340)	100.0	
Ungraded class					
Males	Low	180	(80 - 330)	77.4	(57.8 - 92.9)
	Average or above average	50	(10 - 140)	22.6	(7.1 - 42.2)
	Total	230	(100 - 420)	100.0	
Females	Low	90	(30 - 220)	60.8	(14.7 - 94.7)
	Average or above average	60	(10 - 220)	39.2	(5.3 - 85.3)
	Total	150	(60 - 330)	100.0	
Total	Low	270	(140 - 470)	70.9	(43.4 - 87.4)
	Average or above average	110	(30 - 310)	29.1	(12.6 - 56.6)
	Total	380	(190 - 690)	100.0	
Total					
Males	Low	6 550	(6 090 - 7 030)	65.0	(61.4 - 68.4)
	Average or above average	3 530	(3 150 - 3 930)	35.0	(31.6 - 38.6)
	Total	10 100	(9 600 - 10 600)	100.0	
Females	Low	4 710	(4 280 - 5 150)	49.6	(45.8 - 53.5)
	Average or above average	4 790	(4 360 - 5 250)	50.4	(46.5 - 54.2)
	Total	9 500	(9 010 - 9 990)	100.0	
Total	Low	11 300	(10 700 - 11 800)	57.5	(54.7 - 60.3)
	Average or above average	8 330	(7 790 - 8 870)	42.5	(39.7 - 45.3)
	Total	19 600	(19 500 - 19 600)	100.0	



TABLE 5.12: ABORIGINAL STUDENTS AGED 4–17 YEARS — OVERALL ACADEMIC PERFORMANCE, BY LEVEL OF RELATIVE ISOLATION (LORI)

<i>LORI</i>	<i>Academic performance</i>	<i>Number</i>	<i>95% CI</i>	<i>%</i>	<i>95% CI</i>
None	Low	3 620	(3 290 - 3 980)	51.4	(46.6 - 56.1)
	Average or above average	3 430	(3 090 - 3 770)	48.6	(43.9 - 53.4)
	Total	7 050	(6 900 - 7 200)	100.0	
Low	Low	2 840	(2 510 - 3 210)	54.6	(49.5 - 59.6)
	Average or above average	2 360	(2 030 - 2 700)	45.4	(40.4 - 50.5)
	Total	5 200	(4 770 - 5 660)	100.0	
Moderate	Low	2 780	(2 330 - 3 270)	60.1	(55.1 - 64.9)
	Average or above average	1 840	(1 520 - 2 190)	39.9	(35.1 - 44.9)
	Total	4 620	(3 980 - 5 300)	100.0	
High	Low	1 450	(1 050 - 1 980)	72.6	(62.5 - 81.0)
	Average or above average	550	(350 - 810)	27.4	(19.0 - 37.5)
	Total	2 000	(1 490 - 2 610)	100.0	
Extreme	Low	570	(230 - 1 330)	79.1	(56.3 - 94.3)
	Average or above average	150	(30 - 410)	20.9	(5.7 - 43.7)
	Total	720	(260 - 1 510)	100.0	
Western Australia	Low	11 300	(10 700 - 11 800)	57.5	(54.7 - 60.3)
	Average or above average	8 330	(7 790 - 8 870)	42.5	(39.7 - 45.3)
	Total	19 600	(19 500 - 19 600)	100.0	

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TABLE 5.13: ABORIGINAL STUDENTS AGED 4–17 YEARS — OVERALL ACADEMIC PERFORMANCE, BY LEVEL OF RELATIVE ISOLATION (LORI) AND SEX

Sex	Academic performance	Number	95% CI	%	95% CI
LORI — None					
Males	Low	2 170	(1 880 - 2 490)	59.3	(52.5 - 65.5)
	Average or above average	1 490	(1 230 - 1 780)	40.7	(34.5 - 47.5)
	Total	3 660	(3 330 - 4 010)	100.0	
Females	Low	1 450	(1 210 - 1 730)	42.8	(36.2 - 49.6)
	Average or above average	1 930	(1 640 - 2 260)	57.2	(50.4 - 63.8)
	Total	3 380	(3 060 - 3 730)	100.0	
Total	Low	3 620	(3 290 - 3 980)	51.4	(46.6 - 56.1)
	Average or above average	3 430	(3 090 - 3 770)	48.6	(43.9 - 53.4)
	Total	7 050	(6 900 - 7 200)	100.0	
LORI — Low					
Males	Low	1 710	(1 450 - 1 990)	62.0	(55.3 - 68.6)
	Average or above average	1 050	(820 - 1 300)	38.0	(31.4 - 44.7)
	Total	2 750	(2 420 - 3 130)	100.0	
Females	Low	1 130	(920 - 1 380)	46.3	(39.5 - 53.2)
	Average or above average	1 310	(1 090 - 1 570)	53.7	(46.8 - 60.5)
	Total	2 450	(2 140 - 2 790)	100.0	
Total	Low	2 840	(2 510 - 3 210)	54.6	(49.5 - 59.6)
	Average or above average	2 360	(2 030 - 2 700)	45.4	(40.4 - 50.5)
	Total	5 200	(4 770 - 5 660)	100.0	
LORI — Moderate					
Males	Low	1 590	(1 280 - 1 930)	70.6	(64.4 - 76.3)
	Average or above average	660	(520 - 830)	29.4	(23.7 - 35.6)
	Total	2 250	(1 880 - 2 650)	100.0	
Females	Low	1 190	(970 - 1 460)	50.2	(43.7 - 56.3)
	Average or above average	1 180	(960 - 1 440)	49.8	(43.7 - 56.3)
	Total	2 370	(2 010 - 2 770)	100.0	
Total	Low	2 780	(2 330 - 3 270)	60.1	(55.1 - 64.9)
	Average or above average	1 840	(1 520 - 2 190)	39.9	(35.1 - 44.9)
	Total	4 620	(3 980 - 5 300)	100.0	
LORI — High/Extreme					
Males	Low	1 090	(780 - 1 460)	76.5	(66.6 - 84.3)
	Average or above average	330	(200 - 500)	23.5	(15.7 - 33.4)
	Total	1 420	(1 070 - 1 870)	100.0	
Females	Low	940	(630 - 1 320)	72.0	(57.8 - 82.7)
	Average or above average	360	(220 - 580)	28.0	(17.3 - 42.2)
	Total	1 300	(950 - 1 720)	100.0	
Total	Low	2 020	(1 470 - 2 650)	74.4	(65.8 - 82.4)
	Average or above average	700	(470 - 1 010)	25.6	(17.6 - 34.2)
	Total	2 720	(2 080 - 3 470)	100.0	
Western Australia					
Males	Low	6 550	(6 090 - 7 030)	65.0	(61.4 - 68.4)
	Average or above average	3 530	(3 150 - 3 930)	35.0	(31.6 - 38.6)
	Total	10 100	(9 600 - 10 600)	100.0	
Females	Low	4 710	(4 280 - 5 150)	49.6	(45.8 - 53.5)
	Average or above average	4 790	(4 360 - 5 250)	50.4	(46.5 - 54.2)
	Total	9 500	(9 010 - 9 990)	100.0	
Total	Low	11 300	(10 700 - 11 800)	57.5	(54.7 - 60.3)
	Average or above average	8 330	(7 790 - 8 870)	42.5	(39.7 - 45.3)
	Total	19 600	(19 500 - 19 600)	100.0	



TABLE 5.14: ABORIGINAL STUDENTS AGED 4–17 YEARS — OVERALL ACADEMIC PERFORMANCE, BY LEVEL OF RELATIVE ISOLATION (LORI) AND AGE GROUP

LORI	Academic performance	Number	95% CI	%	95% CI
4–11 years					
None	Low	2 600	(2 280 - 2 950)	55.2	(49.2 - 61.3)
	Average or above average	2 110	(1 800 - 2 460)	44.8	(38.7 - 50.8)
	Total	4 710	(4 370 - 5 060)	100.0	
Low	Low	1 940	(1 640 - 2 250)	55.2	(48.5 - 61.3)
	Average or above average	1 570	(1 290 - 1 890)	44.8	(38.7 - 51.5)
	Total	3 510	(3 130 - 3 930)	100.0	
Moderate	Low	1 790	(1 470 - 2 170)	61.5	(55.4 - 67.5)
	Average or above average	1 120	(900 - 1 380)	38.5	(32.5 - 44.6)
	Total	2 910	(2 480 - 3 400)	100.0	
High/Extreme	Low	1 230	(870 - 1 670)	75.1	(65.6 - 83.8)
	Average or above average	410	(250 - 620)	24.9	(16.2 - 34.4)
	Total	1 630	(1 200 - 2 150)	100.0	
Western Australia	Low	7 560	(7 040 - 8 100)	59.2	(55.7 - 62.5)
	Average or above average	5 220	(4 750 - 5 710)	40.8	(37.5 - 44.3)
	Total	12 800	(12 200 - 13 300)	100.0	
12–17 years					
None	Low	1 020	(830 - 1 250)	43.8	(36.3 - 51.0)
	Average or above average	1 310	(1 060 - 1 610)	56.2	(49.0 - 63.7)
	Total	2 330	(2 010 - 2 690)	100.0	
Low	Low	910	(720 - 1 110)	53.6	(45.4 - 61.5)
	Average or above average	780	(600 - 990)	46.4	(38.5 - 54.6)
	Total	1 690	(1 430 - 1 980)	100.0	
Moderate	Low	990	(750 - 1 240)	57.8	(49.8 - 65.8)
	Average or above average	720	(570 - 920)	42.2	(34.2 - 50.2)
	Total	1 710	(1 410 - 2 050)	100.0	
High/Extreme	Low	790	(480 - 1 190)	73.2	(59.7 - 84.7)
	Average or above average	290	(170 - 460)	26.8	(15.3 - 40.3)
	Total	1 090	(730 - 1 510)	100.0	
Western Australia	Low	3 710	(3 300 - 4 150)	54.4	(49.9 - 58.8)
	Average or above average	3 110	(2 740 - 3 500)	45.6	(41.2 - 50.1)
	Total	6 820	(6 300 - 7 340)	100.0	
Total					
None	Low	3 620	(3 290 - 3 980)	51.4	(46.6 - 56.1)
	Average or above average	3 430	(3 090 - 3 770)	48.6	(43.9 - 53.4)
	Total	7 050	(6 900 - 7 200)	100.0	
Low	Low	2 840	(2 510 - 3 210)	54.6	(49.5 - 59.6)
	Average or above average	2 360	(2 030 - 2 700)	45.4	(40.4 - 50.5)
	Total	5 200	(4 770 - 5 660)	100.0	
Moderate	Low	2 780	(2 330 - 3 270)	60.1	(55.1 - 64.9)
	Average or above average	1 840	(1 520 - 2 190)	39.9	(35.1 - 44.9)
	Total	4 620	(3 980 - 5 300)	100.0	
High/Extreme	Low	2 020	(1 470 - 2 650)	74.4	(65.8 - 82.4)
	Average or above average	700	(470 - 1 010)	25.6	(17.6 - 34.2)
	Total	2 720	(2 080 - 3 470)	100.0	
Western Australia	Low	11 300	(10 700 - 11 800)	57.5	(54.7 - 60.3)
	Average or above average	8 330	(7 790 - 8 870)	42.5	(39.7 - 45.3)
	Total	19 600	(19 500 - 19 600)	100.0	



TABLE 5.15: ABORIGINAL STUDENTS AGED 4–17 YEARS — OVERALL ACADEMIC PERFORMANCE, BY CATEGORY OF SCHOOL

Category of school	Academic performance	Number	95% CI	%	95% CI
Government school	Low	9 350	(8 740 - 9 950)	57.2	(54.2 - 60.2)
	Average or above average	6 990	(6 480 - 7 520)	42.8	(39.8 - 45.8)
	Total	16 300	(15 700 - 16 900)	100.0	
Catholic school	Low	1 390	(1 040 - 1 810)	57.2	(47.7 - 65.8)
	Average or above average	1 040	(780 - 1 350)	42.8	(34.2 - 52.3)
	Total	2 430	(1 960 - 2 960)	100.0	
Independent school	Low	290	(140 - 510)	65.9	(35.1 - 87.2)
	Average or above average	150	(50 - 360)	34.1	(12.8 - 64.9)
	Total	440	(240 - 710)	100.0	
Aboriginal community governed school	Low	230	(90 - 460)	61.7	(43.4 - 76.0)
	Average or above average	140	(50 - 320)	38.3	(24.0 - 56.6)
	Total	370	(140 - 710)	100.0	
Total	Low	11 300	(10 700 - 11 800)	57.5	(54.7 - 60.3)
	Average or above average	8 330	(7 790 - 8 870)	42.5	(39.7 - 45.3)
	Total	19 600	(19 500 - 19 600)	100.0	

MATRICES AND WORD DEFINITIONS TESTING

TABLE 5.16: ABORIGINAL STUDENTS AGED 4–17 YEARS — MATRICES TEST CENTILE SCORE

Matrices test centile score — quartile range	Number	95% CI	%	95% CI
0–25	6 120	(5 660 - 6 590)	38.1	(35.3 - 41.0)
26–50	3 620	(3 250 - 4 020)	22.6	(20.3 - 24.9)
51–75	3 610	(3 250 - 3 970)	22.5	(20.3 - 24.7)
76–100	2 720	(2 380 - 3 080)	16.9	(14.9 - 19.1)
Total	16 100	(15 600 - 16 400)	100.0	

TABLE 5.17: ABORIGINAL STUDENTS AGED 4–17 YEARS — WORD DEFINITIONS TEST CENTILE SCORE

Word definitions test centile score — quartile range	Number	95% CI	%	95% CI
0–25	11 400	(10 900 - 12 000)	74.1	(71.3 - 76.6)
26–50	2 430	(2 090 - 2 790)	15.7	(13.6 - 18.0)
51–75	1 000	(790 - 1 250)	6.5	(5.1 - 8.0)
76–100	580	(390 - 830)	3.8	(2.5 - 5.3)
Total	15 500	(15 000 - 15 900)	100.0	

TABLE 5.18: ALL STUDENTS AGED 5–16 YEARS — MATRICES TEST CENTILE SCORE

Matrices test centile score — quartile range	Number	95% CI	%	95% CI
0–25	44 700	(39 500 - 50 300)	16.9	(15.0 - 19.0)
26–50	59 800	(53 800 - 66 100)	22.6	(20.3 - 25.0)
51–75	67 100	(61 200 - 73 200)	25.4	(23.2 - 27.7)
76–100	92 900	(85 000 - 101 000)	35.1	(32.3 - 38.0)
Total	265 000	(261 000 - 267 000)	100.0	

Source: 1993 Western Australian Child Health Survey



TABLE 5.19: ALL STUDENTS AGED 5–16 YEARS — WORD DEFINITIONS TEST CENTILE

<i>Word definitions test centile score — quartile range</i>	<i>Number</i>	<i>95% CI</i>	<i>%</i>	<i>95% CI</i>
0–25	82 400	(74 400 - 90 700)	31.2	(28.1 - 34.3)
26–50	68 200	(61 700 - 75 200)	25.8	(23.3 - 28.4)
51–75	53 000	(46 900 - 59 700)	20.1	(17.7 - 22.6)
76–100	48 300	(41 500 - 55 700)	18.3	(15.8 - 21.1)
Not stated	12 600	(9 800 - 15 900)	4.8	(3.7 - 6.0)
Total	265 000	(261 000 - 267 000)	100.0	

Source: 1993 Western Australian Child Health Survey

TABLE 5.20: ABORIGINAL STUDENTS AGED 4–17 YEARS — MEAN MATRICES AND WORD DEFINITIONS TEST CENTILE SCORES, BY AGE

<i>Student's age (years)</i>	<i>Matrices</i>		<i>Word Definitions</i>	
	<i>Mean</i>	<i>95 % CI</i>	<i>Mean</i>	<i>95 % CI</i>
4	65	(51 - 78)	44	(35 - 53)
5	65	(58 - 72)	32	(25 - 38)
6	57	(52 - 61)	26	(22 - 30)
7	52	(46 - 57)	21	(15 - 26)
8	43	(38 - 48)	20	(16 - 25)
9	40	(35 - 45)	19	(14 - 24)
10	35	(30 - 40)	16	(12 - 21)
11	33	(28 - 37)	17	(13 - 21)
12	33	(28 - 37)	13	(10 - 16)
13	33	(28 - 38)	12	(7 - 17)
14	36	(31 - 41)	11	(9 - 14)
15	38	(32 - 45)	19	(14 - 24)
16	36	(24 - 49)	12	(6 - 18)
17	34	(11 - 57)	20	(5 - 36)
Total	42	(40 - 44)	19	(17 - 20)

TABLE 5.21: ALL STUDENTS AGED 5–16 YEARS — MEAN MATRICES AND WORD DEFINITIONS TEST CENTILE SCORES, BY AGE

<i>Age (years)</i>	<i>Matrices</i>		<i>Word Definitions</i>	
	<i>Mean</i>	<i>95 % CI</i>	<i>Mean</i>	<i>95 % CI</i>
5	74	(68 - 81)	55	(48 - 62)
6	74	(70 - 77)	50	(45 - 54)
7	71	(67 - 74)	49	(44 - 54)
8	70	(65 - 74)	52	(45 - 60)
9	67	(62 - 72)	49	(44 - 53)
10	55	(51 - 60)	48	(43 - 52)
11	56	(51 - 60)	41	(36 - 45)
12	51	(46 - 55)	41	(36 - 45)
13	45	(41 - 50)	36	(31 - 42)
14	51	(44 - 57)	39	(33 - 44)
15	50	(42 - 57)	40	(33 - 48)
16	34	(27 - 41)	32	(25 - 39)
Total	59	(57 - 61)	45	(43 - 47)

Source: 1993 Western Australian Child Health Survey



TABLE 5.22: ABORIGINAL STUDENTS AGED 4–17 YEARS — WORD DEFINITIONS TEST CENTILE SCORE, BY MAIN LANGUAGE SPOKEN IN THE CLASSROOM

Main language spoken in the classroom	Word definitions test centile score — quartile range	Number	95% CI	%	95% CI
English	0–25	9 270	(8 720 - 9 820)	71.5	(68.4 - 74.5)
	26–50	2 210	(1 890 - 2 580)	17.1	(14.6 - 19.7)
	51–75	920	(710 - 1 160)	7.1	(5.6 - 9.0)
	76–100	570	(380 - 810)	4.4	(2.9 - 6.2)
	Total	13 000	(12 400 - 13 500)	100.0	
Aboriginal English	0–25	1 850	(1 510 - 2 230)	87.6	(82.4 - 91.8)
	26–50	180	(120 - 260)	8.4	(5.4 - 12.1)
	51–75	70	(30 - 120)	3.2	(1.5 - 5.7)
	76–100	20	(0 - 70)	0.8	(0.0 - 3.4)
	Total	2 110	(1 760 - 2 500)	100.0	
Kriol/Creole	0–25	190	(90 - 390)	91.8	(81.5 - 97.9)
	26–50	20	(10 - 30)	8.2	(2.1 - 18.5)
	51–75	0	(0 - 60)	0.0	(0.0 - 24.7)
	76–100	0	(0 - 60)	0.0	(0.0 - 24.7)
	Total	200	(90 - 390)	100.0	
Aboriginal language	0–25	110	(20 - 290)	85.0	(61.7 - 98.4)
	26–50	10	(0 - 30)	11.3	(2.8 - 33.6)
	51–75	0	(0 - 90)	3.7	(0.0 - 52.2)
	76–100	0	(0 - 60)	0.0	(0.0 - 33.6)
	Total	130	(40 - 360)	100.0	
Other	0–25	30	(0 - 330)	78.7	(0.0 - 100.0)
	26–50	10	(0 - 20)	21.3	(0.0 - 100.0)
	51–75	0	(0 - 60)	0.0	(0.0 - 70.8)
	76–100	0	(0 - 60)	0.0	(0.0 - 70.8)
	Total	40	(0 - 270)	100.0	
Total	0–25	11 400	(10 900 - 12 000)	74.1	(71.3 - 76.6)
	26–50	2 430	(2 090 - 2 790)	15.7	(13.6 - 18.0)
	51–75	1 000	(790 - 1 250)	6.5	(5.1 - 8.0)
	76–100	580	(390 - 830)	3.8	(2.5 - 5.3)
	Total	15 500	(15 000 - 15 900)	100.0	



TABLE 5.23: ABORIGINAL STUDENTS AGED 4–17 YEARS — MEAN MATRICES TEST CENTILE SCORE, BY AGE AND LANGUAGE SPOKEN IN THE CLASSROOM

Student's age (years)	English		Language other than English	
	Mean	95% CI	Mean	95% CI
4	68	(53 - 82)	41	(28 - 53)
5	67	(58 - 75)	61	(51 - 71)
6	57	(53 - 62)	53	(43 - 62)
7	55	(48 - 62)	39	(32 - 45)
8	46	(41 - 52)	28	(23 - 34)
9	45	(39 - 45)	21	(15 - 26)
10	39	(33 - 46)	16	(12 - 19)
11	37	(31 - 41)	13	(8 - 18)
12	36	(31 - 41)	20	(15 - 25)
13	36	(30 - 41)	17	(0 - 38)
14	37	(32 - 42)	32	(14 - 49)
15	39	(33 - 46)	16	(0 - 36)
16	39	(27 - 51)	2	(0 - 10)
17	36	(13 - 59)	2	(0 - 13)
Total	44	(42 - 46)	29	(26 - 31)

TABLE 5.24: ABORIGINAL STUDENTS AGED 4–17 YEARS — MEAN WORD DEFINITIONS TEST CENTILE SCORE, BY AGE AND LANGUAGE SPOKEN IN THE CLASSROOM

Student's age (years)	English		Language other than English	
	Mean	95% CI	Mean	95% CI
4	44	(35 - 54)	43	(3 - 83)
5	34	(26 - 42)	26	(17 - 35)
6	27	(22 - 31)	25	(16 - 33)
7	22	(16 - 29)	13	(10 - 16)
8	22	(17 - 27)	10	(8 - 12)
9	22	(16 - 28)	7	(5 - 9)
10	19	(13 - 24)	5	(1 - 8)
11	20	(16 - 25)	3	(1 - 4)
12	15	(11 - 19)	5	(4 - 6)
13	13	(7 - 19)	6	(2 - 10)
14	12	(9 - 15)	1	(0 - 2)
15	20	(15 - 25)	2	(0 - 4)
16	13	(6 - 19)	1	(0 - 2)
17	22	(5 - 38)	0	(0 - 0)
Total	20	(19 - 22)	11	(8 - 13)

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TABLE 5.25: WESTERN AUSTRALIAN STUDENTS — MEAN DIFFERENCE IN THE PROPORTION OF STUDENTS FROM A LANGUAGE BACKGROUND OTHER THAN ENGLISH AND ALL STUDENTS ACHIEVING THE NATIONAL BENCHMARKS, 1999–2004 (a)

Test year	WALNA test	Average difference (b)	Minimum difference (b)	Maximum difference (b)
Year 3 benchmark test	Reading	6.4	0.2	14.5
	Writing	1.2	0.3	2.4
	Spelling	1.2	-0.2 (c)	3.7
	Numeracy	3.2	1.7	4.9
Year 5 benchmark test	Reading	4.6	3.2	8.0
	Writing	3.6	2.7	5.1
	Spelling	2.5	1.5	3.4
	Numeracy	5.2	3.7	6.7
Year 7 benchmark test	Reading	8.6	7.8	9.4
	Writing	3.4	2.1	5.3
	Spelling	2.2	1.3	2.9
	Numeracy	6.7	5.9	7.5

- (a) Year 7 testing only covers the period 2001–2003.
 (b) Differences are expressed in terms of percentage points
 (c) A higher proportion of students from a language background other than English achieved the spelling benchmark in 2001, compared with all students.

Source: Western Australian Department of Education and Training, Annual Report 2003–04

WESTERN AUSTRALIAN LITERACY AND NUMERACY ASSESSMENT

TABLE 5.26: ABORIGINAL STUDENTS AGED 4–17 YEARS ELIGIBLE TO UNDERTAKE WALNA TESTING — NUMBER OF WALNA TESTS COMPLETED

Number of WALNA tests completed	Number	95% CI	%	95% CI
0	4 570	(4 110 - 5 040)	30.9	(28.0 - 34.0)
1	4 050	(3 650 - 4 470)	27.4	(24.8 - 30.1)
2	4 660	(4 240 - 5 120)	31.5	(28.8 - 34.4)
3	1 500	(1 310 - 1 700)	10.1	(8.9 - 11.6)
Total	14 800	(14 300 - 15 200)	100.0	

TABLE 5.27: ABORIGINAL STUDENTS AGED 4–17 YEARS — PROPORTION ACHIEVING THE NATIONAL BENCHMARK, BY WALNA TEST YEAR

WALNA test	Number	95% CI	%	95% CI
Year 3 benchmark test				
Numeracy	3 780	(3 370 - 4 210)	62.4	(57.7 - 66.7)
Reading	4 270	(3 860 - 4 710)	76.7	(72.7 - 80.5)
Spelling	3 240	(2 840 - 3 670)	51.9	(47.4 - 56.5)
Writing	2 990	(2 600 - 3 400)	52.2	(47.4 - 57.1)
Year 5 benchmark test				
Numeracy	3 330	(2 960 - 3 740)	52.3	(47.9 - 56.6)
Reading	3 890	(3 480 - 4 320)	63.5	(59.3 - 67.4)
Spelling	3 390	(3 000 - 3 800)	52.6	(48.2 - 56.9)
Writing	3 330	(2 930 - 3 750)	55.4	(50.6 - 60.0)
Year 7 benchmark test				
Numeracy	1 540	(1 280 - 1 840)	35.8	(30.8 - 41.0)
Reading	1 830	(1 580 - 2 120)	43.3	(38.5 - 48.1)
Spelling	1 880	(1 580 - 2 200)	42.6	(37.4 - 47.8)
Writing	1 590	(1 340 - 1 880)	39.4	(34.4 - 44.7)



TABLE 5.28: ABORIGINAL STUDENTS AGED 4–17 YEARS — PROPORTION WHO WERE LINKED TO ALL THREE WALNA TESTS

WALNA test	Number	95% CI	%	95% CI
Numeracy	1 200	(1 050 - 1 370)	6.1	(5.3 - 7.0)
Reading	1 110	(940 - 1 290)	5.6	(4.8 - 6.6)
Spelling	1 290	(1 120 - 1 480)	6.6	(5.7 - 7.6)
Writing	1 090	(930 - 1 280)	5.6	(4.7 - 6.5)

MEASURES OF STUDENTS' PERFORMANCE — RELIABILITY OF TEACHER RATED PERFORMANCE
TABLE 5.29: ABORIGINAL STUDENTS AGED 4–17 YEARS — TEACHER RATED OVERALL ACADEMIC PERFORMANCE, BY MATRICES TEST CENTILE SCORE

Matrices test centile score — quartile range	Academic performance	Number	95% CI	%	95% CI
0–25	Low	4 520	(4 090 - 4 980)	73.9	(69.6 - 77.8)
	Average or above average	1 600	(1 340 - 1 880)	26.1	(22.2 - 30.4)
	Total	6 120	(5 660 - 6 590)	100.0	
26–50	Low	2 030	(1 750 - 2 320)	55.9	(49.8 - 61.9)
	Average or above average	1 600	(1 320 - 1 920)	44.1	(38.1 - 50.2)
	Total	3 620	(3 250 - 4 020)	100.0	
51–75	Low	1 770	(1 510 - 2 060)	49.1	(43.4 - 55.0)
	Average or above average	1 840	(1 580 - 2 130)	50.9	(45.0 - 56.6)
	Total	3 610	(3 250 - 3 970)	100.0	
76–100	Low	1 000	(820 - 1 200)	36.6	(30.4 - 43.5)
	Average or above average	1 720	(1 430 - 2 060)	63.4	(56.5 - 69.6)
	Total	2 720	(2 380 - 3 080)	100.0	
Total	Low	9 310	(8 800 - 9 830)	58.0	(54.9 - 60.9)
	Average or above average	6 750	(6 230 - 7 280)	42.0	(39.1 - 45.1)
	Total	16 100	(15 600 - 16 400)	100.0	

TABLE 5.30: ABORIGINAL STUDENTS AGED 4–17 YEARS — TEACHER RATED OVERALL ACADEMIC PERFORMANCE, BY WORD DEFINITIONS TEST CENTILE SCORE

Word definitions test centile score — quartile range	Academic performance	Number	95% CI	%	95% CI
0–25	Low	7 420	(6 920 - 7 940)	64.8	(61.5 - 68.0)
	Average or above average	4 030	(3 630 - 4 450)	35.2	(32.0 - 38.5)
	Total	11 400	(10 900 - 12 000)	100.0	
26–50	Low	970	(770 - 1 190)	40.0	(32.7 - 47.9)
	Average or above average	1 460	(1 170 - 1 770)	60.0	(52.1 - 67.3)
	Total	2 430	(2 090 - 2 790)	100.0	
51–75	Low	320	(220 - 440)	31.9	(22.2 - 42.0)
	Average or above average	680	(500 - 910)	68.1	(58.0 - 77.8)
	Total	1 000	(790 - 1 250)	100.0	
76–100	Low	170	(80 - 320)	29.1	(14.7 - 49.4)
	Average or above average	410	(260 - 650)	70.9	(50.6 - 85.3)
	Total	580	(390 - 830)	100.0	
Total	Low	8 880	(8 360 - 9 390)	57.4	(54.3 - 60.4)
	Average or above average	6 580	(6 060 - 7 110)	42.6	(39.6 - 45.7)
	Total	15 500	(15 000 - 15 900)	100.0	



TABLE 5.31: ABORIGINAL STUDENTS AGED 4–17 YEARS — PROPORTION NOT ACHIEVING THE NATIONAL BENCHMARK, BY TEACHER RATED OVERALL ACADEMIC PERFORMANCE

WALNA test	Academic performance	Number	95% CI	%	95% CI
Year 3 benchmark test					
Numeracy	Low	1 630	(1 380 - 1 900)	52.8	(46.8 - 59.0)
	Average or above average	650	(500 - 820)	21.8	(17.1 - 27.3)
Reading	Low	900	(730 - 1 120)	33.5	(27.5 - 39.6)
	Average or above average	390	(290 - 530)	13.7	(9.8 - 18.1)
Spelling	Low	2 260	(1 990 - 2 560)	70.7	(64.8 - 76.0)
	Average or above average	740	(590 - 930)	24.2	(19.1 - 29.7)
Writing	Low	1 890	(1 640 - 2 170)	67.1	(60.7 - 72.8)
	Average or above average	840	(670 - 1 040)	29.1	(23.2 - 35.2)
Year 5 benchmark test					
Numeracy	Low	2 320	(2 050 - 2 360)	63.7	(58.4 - 68.5)
	Average or above average	710	(550 - 890)	26.1	(20.8 - 32.4)
Reading	Low	1 790	(1 540 - 2 060)	50.8	(45.5 - 56.2)
	Average or above average	450	(340 - 590)	17.3	(12.9 - 22.5)
Spelling	Low	2 500	(2 200 - 2 810)	68.7	(63.6 - 73.4)
	Average or above average	550	(440 - 680)	19.7	(15.6 - 24.6)
Writing	Low	2 080	(1 810 - 2 380)	61.7	(55.8 - 67.4)
	Average or above average	600	(450 - 780)	22.7	(17.4 - 28.8)
Year 7 benchmark test					
Numeracy	Low	1 980	(1 720 - 2 250)	78.1	(73.2 - 82.7)
	Average or above average	780	(620 - 980)	44.2	(35.6 - 52.9)
Reading	Low	1 780	(1 540 - 2 040)	72.1	(66.6 - 77.2)
	Average or above average	610	(460 - 810)	34.9	(27.4 - 43.5)
Spelling	Low	1 990	(1 750 - 2 260)	77.1	(71.5 - 82.0)
	Average or above average	540	(430 - 670)	29.6	(23.3 - 36.3)
Writing	Low	1 780	(1 540 - 2 050)	76.2	(71.0 - 80.8)
	Average or above average	670	(540 - 810)	39.2	(31.8 - 47.4)



