

THE LITERACY AND NUMERACY MONITORING PROGRAM 2005

YEARS 3, 5, 7 AND 9

SUMMARY REPORT

This is a summary report of some of the results of the 2005 Literacy and Numeracy Monitoring Program. The associated technical report contains a more comprehensive analysis of results.

Introduction

In July and August 2005, the Department of Education conducted its annual Literacy and Numeracy Monitoring Program, in which all government-school students in Years 3, 5, 7 and 9 were assessed in reading, writing, spelling and numeracy.

Results for reading, writing and numeracy were reported, for the first time, on common scales, extending from Year 3 to Year 9. These scales enabled results from one year level to be compared directly with results from another year level. For example, a Year 3 student who scored 370 for reading and a Year 5 student who scored 370 for reading would have demonstrated very similar reading abilities.

Because the common scales for literacy and numeracy were linked to the *Essential Learnings* framework's *Being literate* and *Being numerate* calibration scales, the Department was able to estimate students' performances against the *Essential Learnings* standards. Evidence suggested that the monitoring tests were excellent predictors of *Being literate* and *Being numerate*, even though the literacy component of them did not assess viewing and listening. The Department used the monitoring results in its quality moderation of assessments process (Qmap) to moderate results for *Being literate* and *Being numerate* in 2005.

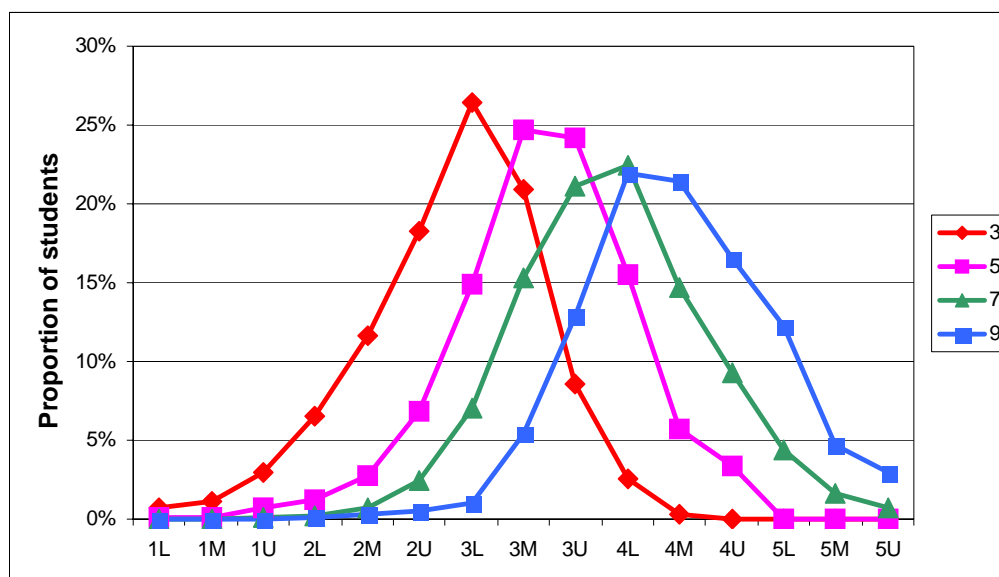
Individual student reports from the 2005 Literacy and Numeracy Monitoring Program were distributed to schools via a secure intranet site in October 2005. Under the Department's Assessment, Monitoring and Reporting Policy, schools were required to show these to parents. School and class reports were also distributed via the intranet site. Schools also received hardcopy diagnostic student and class reports.

State Results

Statewide results of the 2005 Literacy and Numeracy Monitoring Program showed that there was considerable overlap in performance in reading, writing and numeracy between year groups (Figure 1 shows this overlap for literacy). The growth in reading, writing and numeracy was greater in the primary-school years and less in the

secondary-school years. This finding is consistent with results reported from other studies.

Figure 1: Estimated Literacy Performance of Students in Years 3, 5, 7 and 9: 2005



Note: The number refers to the estimated *Being literate* standard and the letter to the estimated progression level (L = lower, M = middle, U = Upper). Thus '4M' means to 'standard 4 middle'.

Multivariate statistical analyses showed that student's parents' or guardians' occupation and education explained about 16% of the variation in students' results. (Students whose parents were of higher socioeconomic status generally achieved greater average scores than those whose parents were of low socioeconomic status, but there was considerable overlap of abilities between students with different socioeconomic backgrounds.) This estimate should be considered as tentative, however, as further analysis needs to be carried out. A very small percentage of the variation in students' performances over and above that of student-level socioeconomic status was explained by the school Educational Needs Index (a Departmental measure of school need). When modelled separately, parental education explained about 14% of the variation in students' performances. (Because parental education largely influences parental occupation, the two factors were not included together in the same statistical models.)

A caveat with some multivariate analyses carried out on the 2005 results is the relatively large amount of missing data: at the time of analysis, the Department did not have parental education and parental occupation information for parents and guardians of all students.

In reading, writing and overall literacy, students' sex (gender) explained about 5% of the variation in scores. Girls, on average, achieved higher scores than boys in reading and writing—the difference in average performance was equivalent to approximately 5 months for reading and about 12 months in writing—but there was considerable overlap of abilities between the sexes. Evidence suggested that the difference between boys' and girls' average scores was not affected much by the socioeconomic backgrounds of students. Results also suggested that, on average, boys and girls made similar rates of progress between years 3 and 9. In numeracy, the average performances of boys and girls were very similar for all year groups tested. There was

some evidence that boys made slightly greater average gains in numeracy than girls in high school, but this finding is tentative.

Other factors such as Indigenous status, language background other than English, and distance from nearest urban centre had small or negligible effects on student performance once other factors had been accounted for. Indigenous students, on average, performed at slightly lower levels than non-Indigenous students, though there was considerable overlap in performance between the two groups.

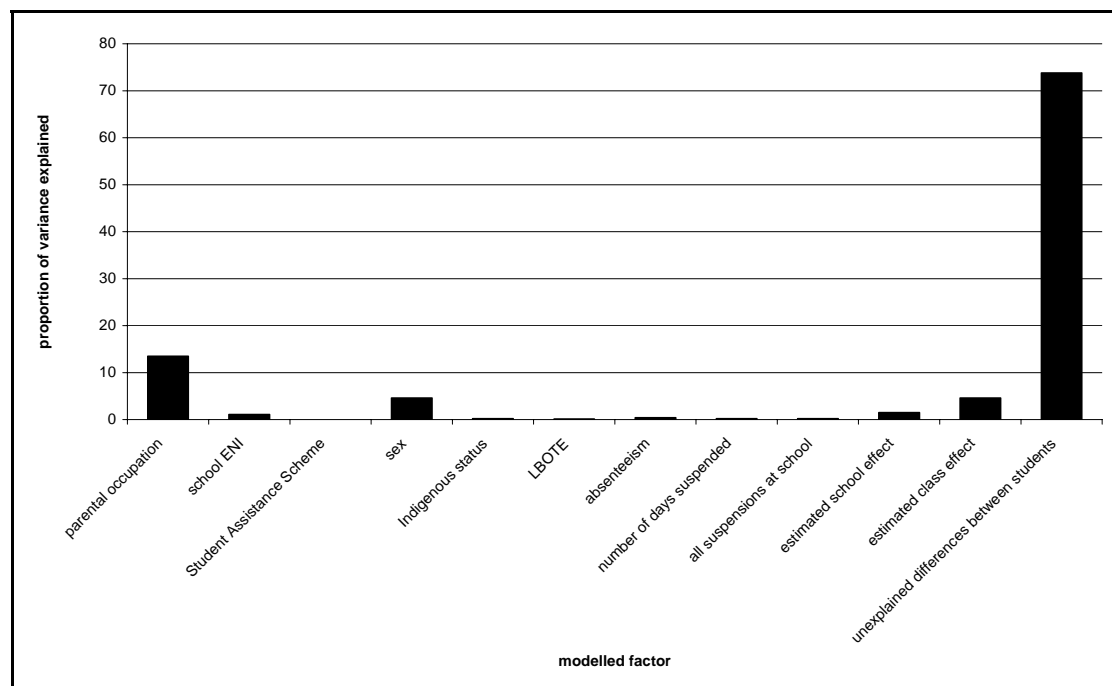
Differences between schools and teachers had important effects on student performance and explained about 5% to 7% of the variation in student performance.

Although the multilevel, multivariate modelling used to analyse the 2005 monitoring results is preferable to simple bivariate analyses (for example, comparing the reading performances of different groups of students), a series of such bivariate analyses was performed. These can be found in the full technical report. Apparent differences in such analyses should be treated with caution, however, because:

- the overlap of performance between groups needs to be considered as well as the difference in average performances
- other factors may interact with, or influence, the factors being analysed.

The relative effects of some factors influencing students' performances in Year 3 literacy are shown in Figure 2. (The effect of parental education on student performance is similar to that of parental occupation, but the two are closely related, so Figure 2 shows parental occupation and not parental education.)

Figure 2: Estimated Effect of Modelled Variables on Students' Literacy Performances: Year 3 2005

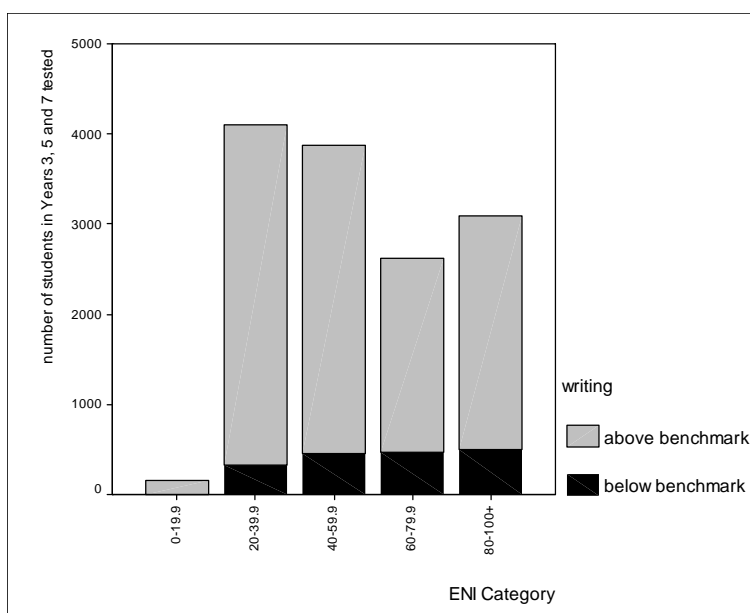


Despite the extensive statistical modelling, approximately 75% of the variation in students' performances could **not** be explained by factors such as socioeconomic status, sex, Indigenous status etc. This major source of unexplained variation was at the student level. It may be that other, un-modelled factors might explain some of this variation.

When schools' average performances were statistically adjusted for the effects of background factors such as socioeconomic status, the majority of schools performed similarly. A small number of schools performed above average in comparison with others, and a similar number were below average.

At-risk students were enrolled in schools of all Educational Needs Indexes (ENIs). For example, there were similar numbers of below-benchmark students in schools with ENIs from 40 to 60 as there were in schools with ENIs greater than 80 (see Figure 3, for example). Both multilevel modelling and simple statistics showed the limitations of attempting to identify at-risk students by using student-level socioeconomic status measures or school ENI as predictors of performance.

Figure 3: Numbers of Below-Benchmark Students in Writing by School ENI: Years 3, 5 and 7, 2005



Results suggested non-random patterns of absenteeism during the test period.

Performance Over Time

Results showed that between 2001 and 2005 there was relatively constant average performance for all year groups tested, with minor fluctuations from year to year (see Figure 4). Although there are limitations in using national benchmark figures as measures of achievement they, too, showed relatively constant performance over time, with some minor fluctuations from year to year. Both average performance and

benchmark performance measures are inevitably subject to equating errors from year to year.

Figure 4: Estimated Average Performance in Reading: 2001-2005

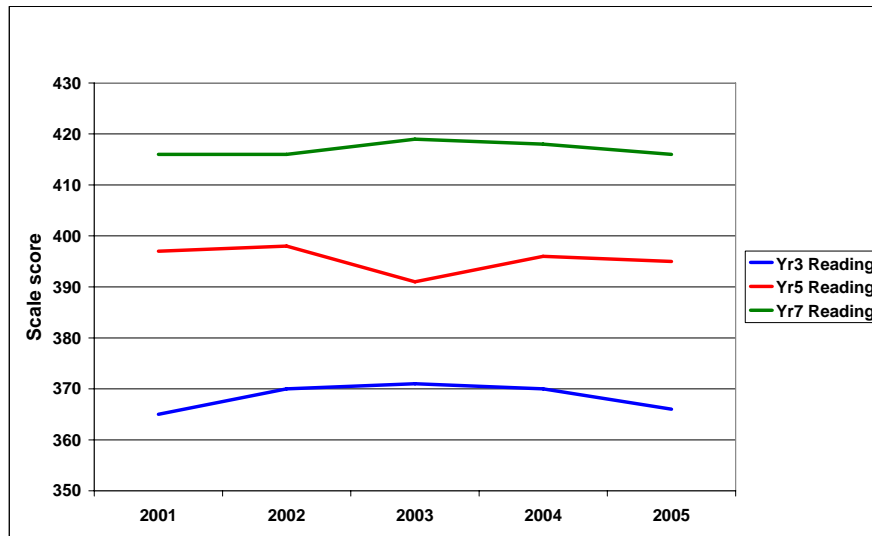
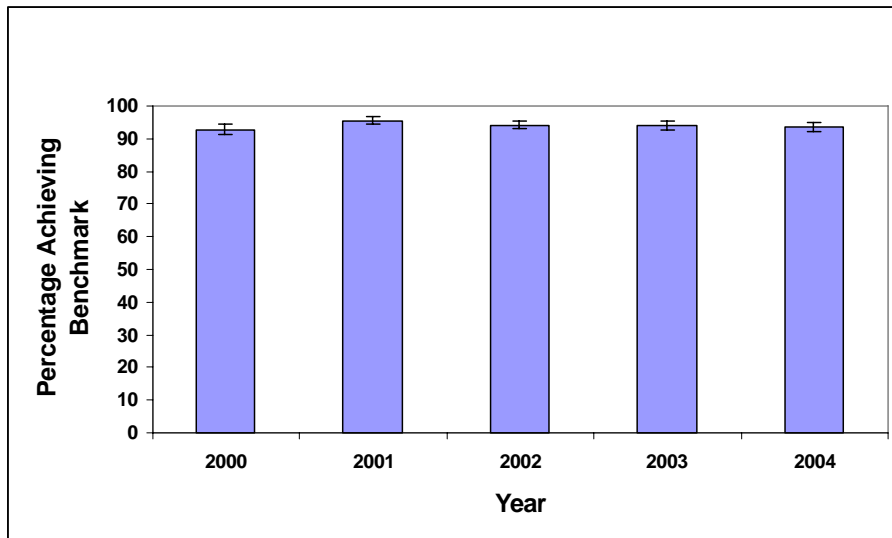


Figure 5: Estimated Percentage of Students Achieving Numeracy Benchmark: Year 3 Numeracy



Note: the error margins at the top of the bars show the uncertainty associated with the percentage of students achieving the Year 3 numeracy benchmark.

Much more comprehensive information than that summarised here can be found in the Technical Report.