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Executive summary

1.1 Introduction

Competence in literacy and numeracy is essential for the pursuit of lifelong learning and career opportunities. Studies have shown that individuals without adequate skills in these areas are at a significant disadvantage in education, employment opportunities, earnings potential, social status and self-esteem.

The Department of Education and Early Childhood Development (DEECD) has overall responsibility for improving the literacy and numeracy achievements of government school students in Victoria. DEECD supports schools and teachers to improve student literacy and numeracy through a range of programs.

DEECD and the Victorian Curriculum and Assessment Authority (VCAA) assess and monitor student achievement at selected year levels through statewide testing across all government schools. Teachers also assess and monitor the progress of individual students, including making judgments of student progress against the state education curriculum (known as the Victorian Essential Learning Standards) at the end of each semester.

Over the last six years there has been a major focus on further developing the curriculum, school leadership and teaching and learning in government schools. There has also been \$42.1 million invested in new initiatives specifically for schools with poor literacy and numeracy achievement. This funding was in addition to the \$120 million spent annually to improve literacy and numeracy across all government schools.

The objective of the audit was to determine whether student literacy and numeracy are improving in Victoria's government schools.

Primarily this involved a detailed analysis of DEECD's and VCAA's statewide student achievement data covering the period 1998 to 2007. While the principal focus was on trends in state average achievement, we also examined achievement for different socio-economic status (SES) groups, the nine DEECD education regions and for the lowest- and highest-achieving students.

These results were then considered against DEECD's initiatives since 1998 to support improved student literacy and numeracy achievement, including DEECD's response to the recommendations of our 2003 literacy audit.

This audit assessed trends in student achievement against the expected performance level set for students in Victorian government schools.

The results from the new national testing program, the National Assessment Program – Literacy and Numeracy (NAPLAN), introduced in 2008, are encouraging. However, the data have not been used because the minimum standards for student achievement set under NAPLAN are not comparable to those set for the government school sector in Victoria, and the published data do not specifically identify and separate the performance of the government school sector from the non-government school sector.

The national and international benchmark results are also acknowledged but were not used for this audit for the same reasons the NAPLAN data were not used. These benchmarks are also lower than Victoria's achievement standards.

1.2 Overall conclusion

National and international experience indicates that improving literacy and numeracy is a complex and challenging task. The government has made a significant commitment, investing \$1.19 billion in initiatives over the past six years.

Nevertheless, over the 10-year period to 2007, DEECD's efforts have not resulted in a marked improvement in average literacy and numeracy achievement across age groups.

The most substantial improvement was in the ability of Prep to Year 2 students to recognise written words although there is not data to confirm whether word comprehension also improved. Moderate improvements in other areas of literacy were also evident for this age group. This demonstrates that the improvement program introduced for this age group worked and that big gains can be generated at a system-wide level. The improvements for Number by students in their early years were also encouraging. Some small to moderate impacts for the particular sub-groups examined for this audit were also evident.

However, the improvements in literacy and numeracy made by students in the early years were not sustained as they progressed through schooling. Students generally performed less well in numeracy than in literacy, with average student performance often further below the expected level, and with fewer improving trends apparent.

DEECD expected improvements in literacy and numeracy achievements resulting from its actions since 2003 would start to emerge by 2008. DEECD considers the NAPLAN results bear out its expectations. However DEECD also acknowledges the results are indicative and not conclusive because NAPLAN is a new test with no comparable data. Given the limited improvement in student achievements shown by the statewide data from 1998 to 2007 and the national benchmark results from 2001 to 2007, it seems unlikely literacy and numeracy achievements could markedly change over the course of one year.

Nevertheless, these results need to be monitored in coming years across the full range of achievement, to see whether they can be sustained and further improved upon. This should include the use of disaggregated analysis of Victoria's performance to enable an understanding of levels of, and changes in, performance of government schools.

It is clear that in order to make a difference, both the nature and the scale of the literacy and numeracy strategies currently being applied need to be thoroughly re-assessed. There is a need to focus effort early, on the students that need support, and for that support to be closely monitored and sustained as students progress through school. This focus is needed for both low-SES schools and for low-achieving students in higher-SES schools.

The overwhelming evidence indicates that the greatest improvements will come from systematic and sustained intervention in the early years. Effectiveness of strategies for students who have fallen behind in later years also needs to be re-assessed.

Improving the literacy and numeracy skills of students remains a significant challenge. Failure to succeed can have serious consequences as it puts at risk the opportunities for students to achieve their full potential. It is therefore recommended that DEECD revisits its strategies to improve student achievement and to rigorously oversight the purposeful use of the resources allocated for this critical area of education.

Importantly, DEECD needs to improve the usefulness of student literacy and numeracy assessment data for monitoring long-term trends and the progress of individual students. Promptly introducing the system of unique student numbers would dramatically improve the capacity to identify and monitor students needing support.

1.3 Key findings

1.3.1 Literacy and numeracy assessments

DEECD and VCAA collect data each year through four statewide assessments: Assessment of Reading (AoR), teacher judgments of student progress, Achievement Improvement Monitor (AIM) and the Victorian Certificate of Education (VCE). These assessments span the school years from Prep to Year 12 and different elements of student literacy and numeracy skills.

The four assessments had a range of limitations when used to analyse long-term trends. Not all students were assessed in the same way, the extent to which the full range of student abilities was measured varied, some data sets were not consistent over time, and the capacity to track the progress of individual students was restricted.

As a result, our analysis focused on the AIM and VCE data sets, the assessments that were collected in a standardised way and consistent over time.

1.3.2 Literacy and numeracy achievements since 1998

The audit analysed the trends in average achievement over time and how average achievement compared with the expected level of performance identified by the curriculum standard for each year level, as set by the VCAA. It is recognised that changing demographics and student movement in the latter years of schooling from the government to the non-government sector may have affected the results.

Trends in average literacy achievement

Our analysis found that between 1998 and 2007:

- The most substantial improvements were made by students in Prep to Year 2 for recognising written words, although there is not data to confirm whether word comprehension also improved, e.g., 20 per cent more Prep students reached a state reading benchmark. Moderate improvements also occurred for other areas of literacy at these year levels.
- Some slight improvements were made between Years 3 and 7, e.g., equivalent to half a term of learning at Year 7, but average literacy achievement declined over time at higher year levels. Average student performance dropped further below the expected level each year as students progressed from Year 3 to Year 9 to be more than 1 term below the expected level by Year 9.
- No improvement was recorded by VCE students in Years 11 and 12. Average VCE achievement was slightly below the standardised mean.

Trends in average numeracy achievement

Our analysis found that between 1998 and 2007:

- Achievement in the set of maths skills called 'Number' for Years 3 and 5 students showed some moderate improvements between 1999 and 2007, e.g., increasing by over half a term of learning at Year 3. Improvements in other areas of numeracy were slight.
- Numeracy achievement declined in recent years in some other areas of maths for students in Years 3 to 9 e.g., by four weeks of learning in Year 7, prior to 2007. In Years 11 and 12, although achievement in the more difficult maths studies improved, overall, achievement declined and was below the state average.
- Numeracy achievement declined more in Years 7 to 12 than in Prep to Year 6. Average student performance also dropped further below expected levels each year from Year 3 to Year 9.

Trends in achievement for students from key sub-groups

Our analysis found that between 1998 and 2007:

- The achievement gap between students from high- and low-SES schools was considerable at all year levels, e.g., representing 15 months of learning at Year 9 for both literacy and numeracy. These gaps had not narrowed over time for either literacy or numeracy.

- The Eastern Metropolitan region consistently outperformed all other regions. There were some improvements for students in the low-SES metropolitan regions, suggesting that initiatives targeted at low-SES schools may have had an impact, however student achievement declined in several non-metropolitan regions.
- The lowest-achieving students were well behind their higher-achieving counterparts. There were, however, some encouraging signs of improvement among the lowest-achieving students in literacy though not in numeracy. There was also improvement amongst the highest-achieving students in numeracy but not literacy.

1.4 Ways to improve literacy and numeracy

1.4.1 Support for literacy

Efforts to improve literacy achievement over the last 10 years have done little to improve the average achievement of students across the state. Although the considerable focus on early years literacy in the late 1990s led to some good initial gains, there has been no system-wide assessment of the ongoing effectiveness of key elements of the approach, such as the Reading Recovery intervention. DEECD needs to routinely evaluate, at a system-wide level, the ongoing effectiveness of its support to schools, teachers and students and sustain targeted support and interventions beyond the early years for students who need it.

1.4.2 Support for numeracy

Low student achievement results for numeracy indicate that effective programs are needed to better support all teachers in further developing their numeracy teaching strategies. The existing focus on Number should be maintained, although programs should also focus on improving teachers' knowledge of the maths discipline, particularly in areas other than Number. The programs need to be appropriate to the different stages in the development of students' mathematical understanding as they progress through school. DEECD has increased its support for numeracy teaching in recent years however it also needs to monitor the effective use of this support. There is also an urgent need for early intervention and for sustained support for students who need it.

1.4.3 Support to address social disadvantage

The literacy and numeracy achievements of students from low-SES schools need to improve significantly to meet expected levels. Funding to address social inequity in literacy and numeracy achievement equates to around 3 per cent of the total schools' budget. This is very low in light of the large achievement deficit of students from low-SES schools. Some of DEECD's low-SES regions have demonstrated that the achievement of students from low-SES schools can be improved. The challenge now is

to expand this work effectively across all low-SES schools, and to set targets for reducing the achievement gap between students from low- and high-SES schools.

1.4.4 Support for low-achieving students

The audit results highlight the need to target the large numbers of students who are achieving well below the expected level, especially for numeracy. Focusing on schools with low achievement rather than individual students with low achievement—the common practice—may miss the large number of students in higher-SES schools who are also achieving well below the expected level.

1.4.5 Continuous improvement

DEECD needs to use a consistent and evidence-based continuous improvement approach for improving student literacy and numeracy achievement. For example, it has not evaluated the success of the Early Years programs for literacy and numeracy, in place for over seven years, its system-wide programs for teacher professional development or set challenging targets to help drive improvement.

DEECD needs to improve the usefulness of its statewide student assessment data. For example, no information is collected on the literacy and numeracy skills of students commencing their Prep year, against which their progress can be measured. There is also no standardised assessment of numeracy for Prep to Year 2 students.

The teacher judgments of student progress provide a holistic assessment of student progress over each year from Prep to Year 10 but the limited number of curriculum progression points used for the assessments does not accurately differentiate the great range in student achievement that exists. This is an important issue to address because until a national curriculum is implemented, teacher judgments provide the only statewide assessment of student achievement against the challenging standards of learning set for Victorian students.

A system of unique student numbers for all students is still being developed. The lack of a student identifier is a fundamental deficiency because it limits student tracking, system-wide monitoring of student achievement, evaluations of support initiatives and targeting of support to individual students.

1.5 Recommendations

DEECD should:

- Adopt a stronger focus on numeracy, by:
 - developing and implementing an early intervention strategy for students struggling with numeracy
 - strengthening support provided to teachers to further develop their knowledge of, and teaching strategies for, maths, and to select and implement the appropriate strategies (**Recommendation 6.1**).

- Address the performance gap between high- and low-SES schools, including setting targets for reducing the influence that school socio-economic disadvantage has on student literacy and numeracy achievement (**Recommendation 6.2**).
 - Identify and address the issues contributing to the declining literacy and numeracy achievement in some non-metropolitan regions, and identify and share across regions the successful approaches underlying the good results achieved by the low-SES metropolitan regions (**Recommendation 6.3**).
 - Improve identification and targeting of students achieving well below the expected level in literacy and numeracy in the early years of schooling in all schools, and sustain support for those who need it as they progress through school (**Recommendation 6.4**).
 - Implement a consistent and evidence-based continuous improvement approach to improving student literacy and numeracy achievement through:
 - setting challenging long-term achievement targets
 - identifying and addressing any issues that may limit the effectiveness of the Early Years programs and one-on-one literacy interventions in schools
 - continuing successful initiatives for as long as feedback and evaluations indicate they are needed (**Recommendation 7.1**).
 - Improve the value of the student literacy and numeracy achievement data for monitoring student progress, by:
 - promptly introducing the Victorian Student Number and using it to monitor the progress of individual students and student cohorts, and to evaluate the impact of improvement initiatives
 - assessing the literacy and numeracy skills of all students starting Prep
 - improving the usefulness of the teacher judgment assessments, in conjunction with VCAA, by more accurately differentiating the range in student progress that is assessed through these judgments
 - working with VCAA to review and upgrade the AIM On Demand student assessment system (**Recommendation 7.2**).
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