

Chapter 4

Meeting the national goals for schooling: Other areas

This chapter provides information relating to areas relevant to the achievement of the national goals which have not been addressed within the focus areas. The information has been provided by individual systems and is often described in more detail in the relevant State/Territory chapter. Areas covered are grouped according to the category of goals to which they relate – ‘skills goals’, ‘excellence goals’ or ‘equity goal.’

Skills goals

Numeracy

Numeracy has been of special interest to Ministers since 1997, when they agreed to amend the new national goal, which became:

...that every child leaving primary school should be numerate and be able to read, write and spell at an appropriate level.

At the same time, all States and Territories committed themselves to the achievement of this goal by endorsing a national plan which involved:

- assessment and diagnosis of the numeracy needs of students as early as possible in the first years of schooling
- a program of intervention to address the diagnosed needs
- assessment of all students against national numeracy benchmarks
- annual reporting of the results of these assessments.

Work began on the development of the benchmarks in 1997 and considerable progress was made during 1998. Draft numeracy benchmarks for years 3 and 5 were presented to the April meeting of the Ministerial Council, where it was agreed that they should be trialled in relation to State and Territory assessment programs. The results of these trials were collated in November with a view to revised drafts of the benchmarks

being ready for distribution for national consultation early in 1999.

The process of developing numeracy benchmarks for year 7 began in July 1998 and a draft was disseminated for national consultation in October. Responses resulting from that consultation were received by the end of the year, in accordance with a plan to revise them in January 1999, so they can proceed to further consultation in February of that year.

System-level implementation of the National Numeracy Plan

During 1998, all States and Territories made significant progress in the implementation of the national plan for numeracy.

New South Wales

New South Wales implemented a state numeracy strategy, Establishing the Foundations of a Numerate Society, which aims to improve the numeracy skills of primary and secondary school students. To date, teachers have introduced an early numeracy program, Count Me in Too. Teachers use the Basic Skills Test results in numeracy to gauge students’ progress and to identify students’ numeracy needs.

Table 4.1 Participation in the State Numeracy Strategy, government schools, NSW, 1998

Funded schools (Commonwealth Early Literacy Initiative funds)	72
Number of teachers involved (Early Literacy Initiative funds)	292
Schools in areas with low socioeconomic status	45
Schools identified as disadvantaged	14
Schools with significant Aboriginal and Torres Strait Islander student population	14
Schools with high population of students from a language background other than English	36
Schools funded from other sources (with an average of four teachers per school), for example the Country Areas Program	214

Source: Dept of Education and Training, NSW

Victoria

Following the model of the successful Early Years Literacy program, the Victorian Early Years Numeracy program began in 1998. This three-year project is due to be completed in 2000. It will provide schools with a model of a comprehensive approach to teaching numeracy in the early years of schooling.

The program will be based on good practice and research both nationally and internationally. The Early Numeracy Research Project – a collaboration between the Department of Education and the Australian Catholic University and Monash University – will investigate the application of the model used in the Early Literacy Research Project to early numeracy teaching and learning.

The major elements of the Early Years Numeracy program are:

- a structured classroom program
- additional assistance – intervention strategies for teachers to assist students having difficulty achieving minimum standards
- parent participation
- professional development for teachers. The initial stage of this strategy established a statewide Early Numeracy Network.

The Early Numeracy Research Project will collect data from students in their first three years of school, beginning in 1999. This information will be used to establish statewide minimum standards in numeracy.

The School Entry Assessment Kit, which provides specific assessment information for teachers on student understanding in literacy and numeracy on entry to school, was tested during 1998 and has been incorporated into the Victorian Early Years Prep Entry Assessment Procedure. Further testing and development will be conducted during 1999.

A major element of the Early Years Numeracy program is additional assistance – strategies for intervention where a child is at risk of not achieving minimum standards. The Early Years Numeracy program also includes a statewide training strategy for teachers. A statewide Early Numeracy Network was established in 1998 to identify key people to form a core for further training later in the program and provide feedback on the development of the program.

The Learning Assessment Program continues to provide valuable information about students' learning outcomes in years 3 and 5 against the Curriculum Standards Framework levels across the strands of mathematics. From August 1999,

students' achievement can be compared with national benchmarks.

Reporting of students' achievement against statewide minimum standards for numeracy in the first three years of schooling will be possible from 2000. The Early Years Numeracy program contains recommendations about school and classroom organisation and planning, including a daily one-hour block for numeracy in the first four years of school.

From information supplied by schools in their annual reports in 1997, over all primary year levels, the average time spent on mathematics is 5 hours per week, with over 75 per cent of schools averaging over 4.5 hours. For junior secondary year levels, the average time per week, spent on mathematics is 3 hours 40 minutes, with over 75 per cent of schools spending 3 hours 20 minutes or more on mathematics.

Queensland

In Queensland's government sector, numeracy information was collected in all Education Queensland schools through the year 2 Diagnostic Net and the year 5 Test. Some schools were also involved in a sample year 3 Test.

Approximately \$1.8 million was allocated direct to schools to support students identified through the year 2 Diagnostic Net as having numeracy difficulties. This funding was used to develop school-based intervention programs for these students.

Commonwealth grant funding was utilised to publish the intervention program Support a Maths Learner: Number. This program, which was a joint initiative of Education Queensland, the Queensland Catholic Education Commission and the Association of Independent Schools of Queensland, was developed to provide additional support for young children having difficulties in the area of number.

Approximately \$1 million in additional funding was again provided to schools to assist with the professional development needs of key teachers and teachers new to the year 2 Diagnostic Net process. Commonwealth grant funding was utilised to provide professional development training to teachers and paraprofessionals in the implementation of the Support a Maths Learner: Number initiative.

South Australia

In 1998, the South Australian Department of Education, Training and Employment distributed over \$4 million to schools to help children at risk in their literacy and numeracy learning. Of this sum, \$2 million supported students with low Basic Skills Test scores. Funding of \$687,000 was provided

for administering the tests and 96 per cent of year 3 and 5 students sat the tests, an increase of 3 per cent from 1997.

Baseline assessment by teachers of all children in their first year of school was introduced, and assessment tools in literacy and numeracy were trialled. By the end of 1998, 45 per cent of schools had registered to commence training in the program in 1999.

Support for teachers was provided in understanding numeracy through *Making the Links – Numeracy* professional development training, delivered to approximately 160 school and preschool teachers. The pack was distributed to all preschools in Term 4 and another, *Making the Links – Numeracy R–3* identifying numeracy across the curriculum was distributed to all R–7 schools in 1998.

Catholic Education in South Australia initiated a program to explore assessment of students in their early years of schooling. The action-research program involved ten teachers. It was intended to inform Catholic Education on the nature and extent of students' numerical thinking in the early years, and how teachers can practically assess this thinking, apart from using a multiple-choice approach.

Western Australia

In Western Australia, the continuing development of the First Steps in Mathematics program (FSIM) in 1998 constituted an important element in the implementation of the national plan for numeracy. FSIM seeks to improve learning outcomes for early childhood and primary students, particularly those at risk of not achieving their educational potential. It aims to enhance teachers' abilities to make professional judgements about their students' learning by improving their understanding of mathematics teaching and learning within a developmental framework. Throughout 1997–98, the project continued to develop curriculum support materials to complement the Student Outcome Statements. The materials are designed to assist teachers to make connections between the Curriculum Framework, the Outcome Statements and classroom practice. They identified and explained the key mathematical understandings underpinning the outcomes. Exemplars of classroom activities that would assist the development of the key understandings were included, together with explanations of common misconceptions held by students. Descriptions of learning phases were also included. These helped teachers make better judgements about student learning by assisting them to identify key indicators of student understanding and growth.

During 1997–98, four project officers continued the development and refinement of the curriculum support materials. These materials will be distributed to early childhood and primary teachers in 1999 and will form the major support for the implementation of the Outcome Statements. The research and development phase of the project concluded at the end of 1998.

During 1997–98, the FSIM project team completed the development of a research base for Number, Measurement, Space and aspects of Chance and data and Working mathematically. The research base informed the development of diagnostic maps for Number, Measurement and Space. These diagnostic maps described the major preoccupations of children's thinking as they moved through phases of learning about mathematical ideas and were intended to assist teachers to interpret students' work.

A further important development was the commencement of work on the development of assessment materials to support teachers' adoption of an outcomes-focussed approach, including sample tasks and advice on making judgements about student learning. Preparation of materials focussing on children's early mathematical learning also began. These materials included background information for teachers and examples of observational tasks. They will be trialled with teachers in 1999.

Tasmania

In Tasmania, the State Numeracy Policy was launched in August and circulated to schools. The policy outlined dedicated time requirements for mathematics and numeracy at each year level. Schools (K–8) are required to follow a documented and sequenced mathematics program and develop courses in years 9–12 from the syllabuses developed and published by the Tasmanian Secondary Assessment Board. In addition, the policy requires that schools identify and support a numeracy leader and that teachers provide an annual numeracy report for all children K–8.

All schools monitor and report individual student performance and achievement to parents using the outcomes of the mathematics profile and the Key Intended Numeracy Outcomes, which are a subset of the profile outcomes. All schools participating in the Assisted School Self Review Process established targets for numeracy as part of their partnership agreements.

The Secondary School Literacy and Numeracy Initiatives funded the Planning and Teaching for Numeracy Project to

assist government and non-government education authorities improve the numeracy outcomes of students identified as low-achieving in years 7–9. Focus schools were identified in regional clusters on the basis of data gathered from the 1998 year 9 monitoring program. Given the short timeline of the 1998 phase of the project, the monitoring process focussed on teacher outcomes, rather than student outcomes. Student outcomes will be monitored in 1999.

Optional workshops on numeracy were offered to all early childhood class teachers, as part of the Flying Start program and initial preparation for the Count Me In Too project was undertaken. This project provided professional development for early childhood teachers in the teaching and learning of number, complementing and enhancing the numeracy component of the Flying Start program. Twenty-seven schools were selected following expressions of interest in the program, which will commence in 1999.

Mechanisms used for measuring numeracy, achievement at primary level included:

- a statewide assessment and monitoring program in numeracy, conducted with all year 3 students
- testing of a random sample of 1,000 year 1 and 2 students, using a locally developed numeracy test as part of the Flying Start program
- student performance reported against the Key Intended Numeracy Outcomes.

Tasmanian Catholic schools participated in trialling numeracy benchmarks, a monitoring project and standardisation against the benchmarks. The sector also participated in the Planning and Teaching for Numeracy project, with five schools as focus schools and all other schools participating by subscription or because they had a high Indigenous student population.

The majority of schools in the independent sector initiated actions to implement the numeracy and literacy national goals and sub-goals as agreed by Education Ministers in March 1997. Schools spent an average of 4 hours of curriculum time on numeracy education per week, ranging from 3.5 hours for pre-year 1 to year 3 students to 4.6 hours for years 4 to 6/7 students.

Most independent schools assessed the numeracy achievement of students in years 3 and 5. Tools used included diagnostic testing, the CATIM4/5 Test (ACER), the Australian Maths Primary Test, Progressive Achievement Tests (grade three to grade eight), *Signpost Maths* assessments, weekly reviews and testing based

on a new core text, and participation in the University of NSW National Mathematics Competition.

Of the very few schools in which the numeracy achievement of specific sub-groups of students was an issue, it was found that students requiring ESL assistance were less disadvantaged in numeracy than they were in language-based skills. Most of the intervention programs were in the early years of schooling and half the schools took initiatives to implement the numeracy and literacy sub-goals.

Northern Territory

During the preparation of the Northern Territory Numeracy Plan in 1998, an extensive review of the provision of numeracy education was undertaken and a Territory-wide strategy was developed to improve student outcomes throughout schooling. This strategy focussed on quality support materials, teacher professional development programs, programs for parents, and school and system level assessment.

A major initiative was the Territory-wide implementation of the Numeracy in Schools project, which was supplemented with funding through the Commonwealth Literacy Programme. This project, a joint effort of the Department of Education and the Mathematics Teachers Association (NT), aimed to develop numeracy education strategies and measurement of outcomes for classroom teachers, and to raise awareness by enhancing teacher and community understanding of numeracy.

In remote Catholic schools with a significant Indigenous population, students were provided with courses that taught numeracy within a language cultural context.

Australian Capital Territory

The Australian Capital Territory Literacy Strategy, released in 1998, included the goal of improving student learning outcomes in numeracy in ACT government schools. In 1998 the numeracy program included assessment in year 5. The strands assessed were Number sense, Data sense and Spatial sense. Results were reported against the national curriculum profile levels.

Initiatives for teachers and students included:

- numeracy workshops run by the Canberra Institute of Technology
- workshops on good practice co-delivered by the Australian Mathematics Trust
- workshops by the Canberra Mathematical Association on problem solving, the Proliner, Geometers Sketch Pad and Accessing Mathematics through Asia; production of

articles and worksheets for the Newspaper-in-Education program

- numeracy workshops for the ACT Access Asia program
- professional development on early number skills, percentages and fractions, decimals, chance and data, and problem solving
- sessions on cross-cultural awareness and numeracy across the curriculum for teachers of students from the ESL target group
- the Australian Mathematics Trust talented primary students program
- scope and sequence charts from the ACT Mathematics Curriculum Framework to assist primary schools reviewing their mathematics curriculum.

ACT Catholic schools undertook initiatives as part of the Archdiocesan Numeracy Plan towards the International Year of Mathematics in 2000, including the following:

- School staff and parents were introduced to 'best practice' pedagogy.
- Information emanating from national and State conferences on mathematics was delivered to schools through regular staff in-service sessions.
- Staff in schools were introduced to documents relating to the Working mathematically strand.

ACT independent schools implemented the numeracy national goal through curriculum evaluation, entry into all major competitions, implementation of new programs to extend able students and continued development of literacy and numeracy programs in line with national profiles.

Monitoring student achievement in numeracy

The national plan, when fully implemented, will include the annual assessment of some year groups against national benchmarks. In the meantime, States and Territories are continuing their monitoring programs and building up a large body of information about the numeracy achievement of their students.

New South Wales

In New South Wales government and Catholic schools, numeracy performance of students in years 3 and 5 is assessed by the Basic Skills testing program. The School Certificate assesses academic achievement of year 10 students in the key learning area of mathematics. The Higher School Certificate assesses and accredits the performance of students in their final year of secondary schooling in mathematics.

The Basic Skills Test results are reported in five skill bands for year 3 and six skill bands for year 5. Band 1 is the lowest level of achievement. A year 3 child is considered to have demonstrated an acceptable standard if at Band 2 or above for literacy and numeracy. For year 5, students are considered to have demonstrated an acceptable standard if they are at Band 3 or above.

The results of the 1998 Basic Skills Test show that 87 per cent of students in year 3 (Band 2 and above) and 95 per cent of students in year 5 (Band 3 and above) demonstrated competent or higher level skills in the numeracy test in 1998.

Table 4.2 Performance in Basic Skills Numeracy Test, government and Catholic schools, NSW, 1998 (per cent)

	<i>Year 3</i>	<i>Year 5</i>
Band 6	n.a.	23
Band 5	21	28
Band 4	22	28
Band 3	25	15
Band 2	19	4
Band 1	13	1

n.a. = not available

Note: Percentages may not add to 100 due to rounding. Numbers participating were as for literacy (Table 3.1).

Source: Dept of Education and Training, NSW

Table 4.3 Performance in School Certificate mathematics, government schools, NSW, 1998 (per cent)

	<i>Mathematics</i>
Band 6 (high)	4
Band 5	14
Band 4	24
Band 3	28
Band 2	24
Band 1 (low)	6

Source: Dept of Education and Training, NSW

Table 4.4 Students at each CSF mathematics (Measurement) level, year 3, all schools, Victoria, 1998 (per cent)

<i>Sub-group</i>	<i>CSF Level 1</i>	<i>CSF Level 2</i>	<i>CSF Level 3</i>	<i>CSF Level 4</i>
All	6.2	45.1	40.3	8.4
Boys	6.3	44.1	40.2	9.4
Girls	6.1	46.2	40.4	7.4
LBOTE	9.6	47.4	35.2	7.7
ATSI	17.7	59.3	19.8	3.2
Rural	4.7	44.2	40.7	10.4
Disadvantaged	10.4	50.1	34.1	5.5

LBOTE – Students from a language background other than English

ATSI – Aboriginal and Torres Strait Islander students

Rural – Students attending rural schools

Disadvantaged – Students attending schools receiving special learning needs funding or disadvantaged schools

Source: Board of Studies, Victoria

Table 4.5 Students at each CSF mathematics (Number) level, year 3, Victoria, all schools, 1998 (per cent)

<i>Sub-group</i>	<i>CSF Level 1</i>	<i>CSF Level 2</i>	<i>CSF Level 3</i>	<i>CSF Level 4</i>
All	6.7	38.3	47.2	7.9
Boys	6.6	37.3	46.9	9.2
Girls	6.8	39.3	47.5	6.4
LBOTE	9.5	37.6	43.0	9.8
ATSI	17.3	53.1	26.4	3.2
Rural	6.3	38.1	46.6	9.0
Disadvantaged	10.3	41.8	41.3	6.6

Note: Sub-group definitions are as for Table 4.4

Source: Board of Studies, Victoria

In the 1998 School Certificate mathematics examination, 42 per cent of students were graded at Band 4 and above. These students could successfully undertake a range of tasks, including:

- communicating substantial mathematical knowledge and skills such as recalling and using geometrical facts and properties
- displaying competency in number skills by calculating with integers, decimals, fractions and percentages
- choosing appropriate strategies in solving familiar problems such as those involving area, volume and statistics

In 1998, 70 per cent of students were graded at Band 3 and above. This means that most government school students could successfully undertake a range of tasks, including:

- recalling and communicating mathematical knowledge such as geometrical facts and properties
- displaying competency in number skills by calculating with whole numbers, decimals and percentages
- solving problems in familiar contexts, such as those involving chance and data, and measurement.

Victoria

In Victoria, students were assessed against the Curriculum Standards Framework (CSF). The following data for the Measurement and Number strands apply to all sectors for 1998. Year 3 students who were achieving at Level 1 were performing below expectations, as were year 5 students who were achieving at Level 2. It is expected that Victorian children will be performing at CSF Level 4 by the end of year 6, but it is not assumed that progress towards these standards will proceed uniformly over time.

At year 3 in mathematics (Measurement), Indigenous students performed at a much lower level than non-Indigenous students, students from disadvantaged schools scored lower than other students, boys marginally out-performed girls, rural students performed better than students attending metropolitan and provincial schools, and English speakers out-performed students from language backgrounds other than English.

At year 3 in the Number strand, non-Indigenous students significantly out-performed Indigenous students. Students from disadvantaged schools scored lower than other students, boys slightly out-performed girls, and rural

Table 4.6 Students at each CSF mathematics (Measurement) level, year 5, all schools, Victoria, 1998 (per cent)

<i>Sub-group</i>	<i>CSF Level 2</i>	<i>CSF Level 3</i>	<i>CSF Level 4</i>	<i>CSF Level 5</i>
All	7.2	42.6	41.6	8.6
Boys	7.7	42.1	40.9	9.2
Girls	6.7	43.1	42.3	8.0
LBOTE	9.5	45.9	37.0	7.5
ATSI	24.4	54.5	19.8	1.3
Rural	7.7	42.0	40.8	9.6
Disadvantaged	12.2	48.9	33.8	5.1

Note: Subgroup definitions are as for Table 4.4

Source: Board of Studies, Victoria

Table 4.7 Students at each CSF mathematics (Number) level, year 5, all schools, Victoria, 1998 (per cent)

<i>Sub-group</i>	<i>CSF Level 2</i>	<i>CSF Level 3</i>	<i>CSF Level 4</i>	<i>CSF Level 5</i>
All	9.0	42.7	38.8	9.5
Boys	9.8	41.9	37.8	10.5
Girls	8.1	43.5	39.8	8.6
LBOTE	9.8	41.9	37.6	10.7
ATSI	30.0	48.5	19.9	1.7
Rural	10.8	44.6	36.0	8.6
Disadvantaged	13.5	46.7	33.3	6.6

Note: Sub-group definitions are as for Table 4.4

Source: Board of Studies, Victoria

students performed slightly better than students attending metropolitan and provincial schools. Performance is more polarised for students from language backgrounds other than English than for English speakers, with more students achieving at the lowest and highest levels.

At year 5, the gap between Indigenous and non-Indigenous students' performance in Number widened. Students from disadvantaged schools scored even lower than other students, boys slightly out-performed girls in number, and rural students performed less well than students attending metropolitan and provincial schools. For students from language backgrounds other than English, performance was very similar to English-speaking students.

Queensland

In 1998, the Queensland School Curriculum Council conducted two testing programs in all Queensland government schools (and in the majority of non-government schools). The year 3 Testing Program was administered to a sample of year 3 students, to provide stable statewide estimates of student performance in aspects of literacy and numeracy. The year 5 Testing Program in aspects of literacy and numeracy was administered to year 5 students in all government schools and in those non-government schools that chose to participate.

New scales for literacy and for numeracy were developed, ranging from 300 to 1200, to accommodate the reporting of results across a number of year levels. For the year 3 and year 5 tests, the scores for literacy are comparable, given the common literacy scale, as are the aspects of literacy (reading and viewing, writing and spelling). Numeracy scores are comparable across year 3 and year 5, and also for the aspects of numeracy (Number, Data and Space). However, literacy scores are not comparable to the numeracy scores as the data are scaled separately.

Table 4.8 Numeracy scores, by strand and sub-group, year 3, all schools, Queensland, 1998

	<i>All students</i>	<i>Male</i>	<i>Female</i>	<i>LBOTE</i>	<i>Indigenous</i>
Number	506.7	507.1	506.3	502.9	424.4
Data (including measurement)	508.0	505.3	510.8	495.4	425.0
Space	509.8	507.1	512.7	498.8	427.3

Source: Education Queensland

Table 4.9 Numeracy scores, by strand and sub-group, year 5, all schools, Queensland, 1998

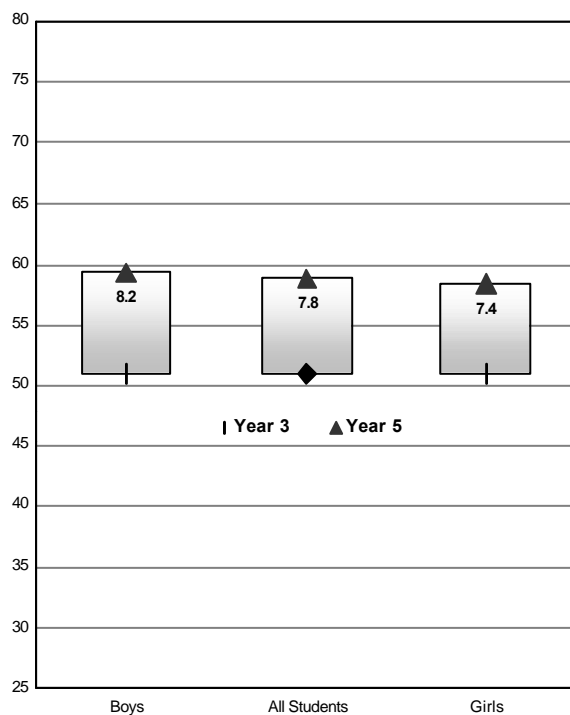
	<i>All students</i>	<i>Male</i>	<i>Female</i>	<i>LBOTE</i>	<i>Indigenous</i>
Number	604.7	604.8	604.4	600.0	539.4
Data (including measurement)	608.8	613.7	603.3	595.0	541.9
Space	603.6	602.3	604.3	592.8	546.2

Source: Education Queensland

The following general trends were evident:

- Year 3 girls out-performed boys in Data and Space, but boys did as well as girls in Number.
- At year 5, boys did better than girls in Data, and performed as well as girls in Number and Space.
- For both year levels and for each numeracy strand, the performance of LBOTE students was slightly below that for other students, while the performance of Indigenous students was well below the State mean.
- Performance in the three strands was fairly similar within each year for the State as a whole, with just a little more variability for LBOTE and Indigenous students.

Figure 4.1 BST: Aspects of Numeracy, average growth in test scores for cohort year 3 (1996) to year 5 (1998), government schools, SA



Source: Dept of Education, Training and Employment, SA

Table 4.10 Students in numeracy skill bands, year 3, government schools, SA, 1998 (per cent)

<i>Band</i>	<i>1998</i>
Band 5	14
Band 4	19
Band 3	24
Band 2	22
Band 1	21

* Percentages may not total 100 due to rounding.

Source: Dept of Education, Training and Employment, SA

Table 4.11 Students in numeracy skill bands, year 5, government schools, SA, 1998 (per cent)

<i>Band</i>	<i>1998</i>
Band 6	15
Band 5	27
Band 4	31
Band 3	19
Band 2	6
Band 1	2

* Percentages may not total 100 due to rounding.

Source: Dept of Education, Training and Employment, SA

South Australia

The South Australian Department of Education, Training and Employment's annual Basic Skills Test, which measures students' numeracy achievements in year 3 and year 5, included over 90 per cent of all relevant students. Parents received a report on the position of their child in one of six achievement bands and schools compared the results of their student cohort with the state averages.

In 1998, 7,782 year 5 students sat for the Aspects of Numeracy component of the Basic Skills Tests in the same school at which they had sat the test in year 3. These students showed an average increase of 7.8 points in numeracy. The average increase for boys was higher than the average increase for girls.

Western Australia

Every year, random samples of government school students in years 3, 7 and 10 are tested in one or two of the eight learning areas. In August 1998, mathematics testing was undertaken for the fourth time, information on students' knowledge and skills having previously been collected in 1990, 1992 and 1996.

The 1998 testing program was integrated closely with the 1996 program. Test materials developed by the Educational Testing Centre at the University of New South Wales for the

1996 testing program were augmented by new material developed by the Education Department in conjunction with the Australian Council for Educational Research. This material was designed to assess student understanding of important concepts and content described in the Space, Measurement, Chance and data, Number and Algebra strands of the 1998 WA Student Outcome Statements.

As in 1996, student performance in the Working mathematically strand was not assessed in this testing program. This strand deals with generic processes used in all studies within the mathematics area. It was not possible to validly assess these processes using the relatively closed style of assessment tasks that were needed to gather reliable information about performance in the other strands.

A random sample of students from years 3, 7 and 10, and for the first time, year 5, was tested from a range of government schools. The addition of year 5 students in the testing process was in anticipation of their inclusion in the population testing of all years 3 and 5 students in numeracy in 1999. The sample consisted of approximately 1,500 students in each of years 3, 5, 7 and 10. This represents somewhat less than 10 per cent of the student cohort. Because of their relatively small numbers, Indigenous students were over-sampled, to ensure that valid judgements about their performance could be made.

Students were tested using a range of selected response and open response tasks designed to assess knowledge and skills from Level 2 to Level 6. Assessment of Level 1 outcomes was not attempted because this required a greater degree of interaction with the assessor than was possible in a standardised testing program such as this. Conversely, assessment of Level 7 and 8 outcomes were not attempted because this required more independence of the students than was possible.

Table 4.12 Students in year 3, 7 and 10 samples achieving at or above specified levels in MSE mathematics (Number), government schools, WA, 1992, 1996 and 1998 (per cent)

<i>Year level</i>	3	7	10
<i>Outcome level</i>	³ 2	³ 3	³ 4
All students 1992	89	89	82
All students 1996	90	93	91
All students 1998	89	92	87
<i>Female 1998</i>	89	91	88
<i>Male 1998</i>	88	93	86
<i>Indigenous 1998</i>	66	77	75
<i>LBOTE 1998</i>	77	85	82

Source: Education Department of Western Australia

Table 4.13 Students in year 3, 7 and 10 samples achieving at or above specified levels in MSE mathematics (Space), government schools, WA, 1992, 1996 and 1998 (per cent)

<i>Year level</i>	3	7	10
<i>Outcome level</i>	³ 2	³ 3	³ 4
All students 1992	74	77	52
All students 1996	76	78	62
All students 1998	79	74	59
<i>Female 1998</i>	80	72	58
<i>Male 1998</i>	77	75	60
<i>Indigenous 1998</i>	49	48	41
<i>LBOTE 1998</i>	69	62	54

Source: Education Department of Western Australia

Table 4.14 Students in year 3, 7 and 10 samples achieving at or above specified levels in MSE mathematics (Chance and data), government schools, WA, 1992, 1996 and 1998 (per cent)

<i>Year level</i>	3	7	10
<i>Outcome level</i>	³ 2	³ 3	³ 4
All students 1992	98	96	73
All students 1996	96	97	81
All students 1998	89	94	83
<i>Female 1998</i>	90	95	87
<i>Male 1998</i>	88	93	79
<i>Indigenous 1998</i>	67	82	69
<i>LBOTE 1998</i>	77	87	72

Source: Education Department of Western Australia

Table 4.15 Students in year 3, 7 and 10 samples achieving at or above specified levels in MSE mathematics (Measurement), government schools, WA, 1992, 1996 and 1998 (per cent)

<i>Year level</i>	3	7	10
<i>Outcome level</i>	³ 2	³ 3	³ 4
All students 1992	84	88	75
All students 1996	84	95	75
All students 1998	77	93	82
<i>Female 1998</i>	79	92	80
<i>Male 1998</i>	75	94	86
<i>Indigenous 1998</i>	55	77	64
<i>LBOTE 1998</i>	68	86	79

Source: Education Department of Western Australia

Table 4.16 Students in year 3, 7 and 10 samples achieving at or above specified levels in MSE mathematics, by strand, WA, 1998 (per cent)

<i>Strand</i>	<i>Number</i>	<i>Space</i>	<i>Chance and data</i>	<i>Measurement</i>
Female	77	45	82	69
Male	75	49	81	70
Indigenous	51	22	66	44
LBOTE	71	37	78	68
All students	76	47	81	70

Source: Education Department of Western Australia

Tasmania

Numeracy data was reported from Tasmania, where performance is shown against the department's Key Intended Numeracy Outcomes (KINOs). The KINOs are a subset of the outcomes in *Mathematics – A Curriculum Profile for Australian Schools* (Curriculum Corporation, 1994). KINOs have been developed for years 2, 5 and 8. They correspond to what might reasonably be expected to be the level of achievement of students at the end of those years of schooling.

Table 4.17 Students by KINO levels, year 3, government schools, Tasmania, 1998 (per cent)

	<i>Girls</i>	<i>Boys</i>	<i>All</i>
Insufficient information	3	4	4
Working towards yr 2 KINOs	1	1	1
Achieved yr 2 KINOs	6	5	6
Working towards yr 5 KINOs	43	42	42
Achieved yr 5 KINOs	40	39	39
Working towards yr 8 KINOs	7	9	8

Source: Dept of Education, Tasmania

Table 4.18 Students by KINO levels, year 7, government schools, Tasmania, 1998 (per cent)

	<i>Girls</i>	<i>Boys</i>	<i>All</i>
Insufficient information	3	4	4
Working towards yr 5 KINOs	4	5	4
Achieved yr 5 KINOs	36	38	37
Working towards yr 8 KINOs	52	48	50
Achieved yr 8 KINOs	5	6	5

Source: Dept of Education Tasmania

Table 4.19 Students at each grade and level, mathematics, year 10, all schools, NT, 1997, 1998 (per cent)

<i>Year</i>	<i>Level</i>	<i>Grade</i>				
		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
1997	1	10.4	27.0	33.5	21.3	7.8
1998	1	9.9	26.6	31.5	23.4	8.6
1997	2	2.1	19.9	38.0	26.2	13.8
1998	2	0.5	19.1	33.5	29.6	17.3
1997	3	1.3	16.7	40.7	27.0	14.3
1998	3	0.4	14.5	41.7	29.3	14.1

Source: Dept of Education, NT

Northern Territory

In the Northern Territory, mathematics achievement is recorded at year 10 in accordance with the results obtained in the Junior Secondary Studies Certificate. Table 4.19 shows the percentage of students achieving each of five grades at the three levels of study in 1997 and 1998. Level 1 is the highest of the three levels and Grade A is the highest grade at each level.

Australian Capital Territory

In the Australian Capital Territory, year 5 numeracy assessment was introduced into government schools for the first time in 1998. National Mathematics Profile Level 3 or above was achieved by 95 per cent of students in Space, 91 per cent in Number and 89 per cent in Data sense.

An analysis of 1998 numeracy outcomes was done for language background other than English (LBOTE) and for gender. The number of students achieving scores within one standard deviation of the mean was analysed. Variations in performance by student sub-groups were compared to mean performance by all students. The results of that analysis follow in Tables 4.21 and 4.22.

Table 4.20 Students at each mathematics National Profile level, year 5, government schools, ACT, 1998 (per cent)

	<i>Level 2</i>	<i>Level 3</i>	<i>Level 4</i>	<i>Level 5</i>
Data sense	11.0	34.1	42.2	12.7
Number	8.7	40.5	39.1	11.7
Space	5.0	37.9	49.8	7.3

Source: Dept of Education and Community Services, ACT

Table 4.21 Mean performance in numeracy, by language background, year 5, government schools, ACT, 1998

	<i>Data sense</i>	<i>Number</i>	<i>Space</i>
All students	11.6	12.2	10.9
English background	11.7	12.3	11.0
LBOTE	10.4	11.1	9.9

Source: Dept of Education and Community Services, ACT

Table 4.22 Mean performance in numeracy, by gender, year 5, government schools, ACT, 1998

	<i>Data sense</i>	<i>Number</i>	<i>Space</i>
All students	11.6	12.2	10.9
Girls	11.9	12.1	10.8
Boys	11.3	12.3	11.1

Source: Dept of Education and Community Services, ACT

In year 5, LBOTE students performed just below other students. As in 1997, LBOTE students found listening and viewing the most difficult literacy skills to master.

In year 5, 50 per cent or more of girls performed above the mean in each numeracy strand. More than 50 per cent of boys performed above the mean in Data sense and Number, but not in Space. In Data sense, exceptionally strong performances came from a small group of boys though overall there were more girls performing above the mean than boys. In Space, girls displayed very strong performance levels above the mean.

Other indicators of numeracy achievement

The Third International Mathematics and Science Study

Apart from the information from individual State and Territory monitoring programs, some evidence concerning the national numeracy picture is available as a result of Australia's participation in international studies.

In early 1998, the results of the testing of 'Population 3', under the Third International Mathematics and Science Study (TIMSS) were released. TIMSS, the largest and most thorough international comparative study of student achievement ever undertaken, aimed to identify curriculum, instructional and other variables related to differences in student achievement in school-level mathematics and science. Since the early 1990s this study has been investigating mathematics and science achievement among three groups of students in over 40 countries: 9-year-olds (Population 1), 13-year-olds

(Population 2) and students in their final year of secondary schooling (Population 3). Results for the younger cohorts have been outlined in previous editions of this report.

Testing of Population 3 students took place in 1995.

Population 3 differed from the younger cohorts on several counts:

- *Sample size:* In Australia, Population 3 comprised approximately 3,200 students, around a quarter the size of the Populations 1 and 2 samples.
- *Scope:* Reflecting the more specialised senior secondary curriculum, final-year students were tested in advanced mathematics, physics, and 'mathematics and science literacy', pitched at about year 10 level.
- *Participating countries:* Less than half the TIMSS countries took part in Population 3 testing – 16 in each of advanced mathematics and physics, and 22 in mathematics and science literacy. The East Asian nations, which led the field in primary and middle secondary science and mathematics, did not participate in Population 3.

Advanced mathematics

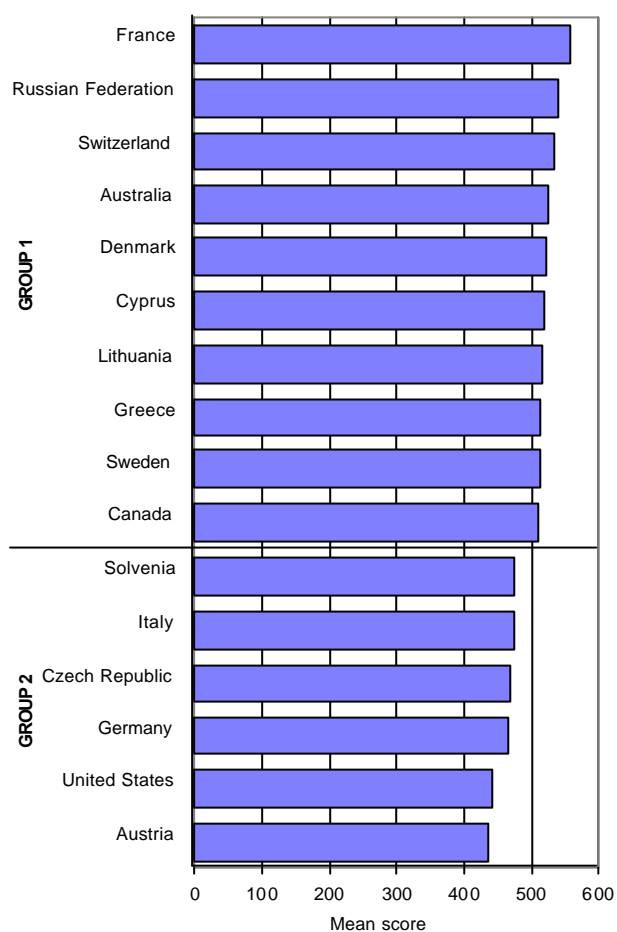
Countries fell into two performance groups in advanced mathematics (see Figure 4.2). Australia was placed in the first of these, which was headed by France and also included the Russian Federation, Switzerland, Sweden and Canada. Australia scored significantly better than Italy, the Czech Republic, Germany and the United States. Australian students' best results were in calculus, followed by numbers and then geometry.

Mathematics and science literacy

The mathematics and science literacy test was administered to a sample of all year 12 students, not just those who were studying these subjects. Students from the Netherlands were clear leaders, with Australian students being placed in the second of the four performance groups alongside the Scandinavians, Canada, New Zealand, France and Germany and clearly ahead of the Czech Republic, the Russian Federation and the United States.

Australian students showed equally strong performance in both mathematics literacy and science literacy, which was not the case in many other countries. In around half the countries, including Australia, there was a positive relationship between student computer use at school and home and their achievement level in the mathematics and

Figure 4.2 TIMSS Population 3, achievement in advanced mathematics, by country, 1995



Source: DETYA from data in TIMSS Report

science literacy test. As with the younger cohorts, Australian year 12 students did well on questions involving preparing and reading graphs and on environmental issues but were among the most confused about the sources of greenhouse gases.

High-performing students

Countries differ widely in the proportion of a cohort remaining in school to grade 12, the way schooling is organised at that level and the age at which schooling ends. For example, Australian students finish their secondary schooling in comprehensive schools rather than vocational or technical schools, and they tend to leave at age 18, two years younger than students in, for instance, Italy and Iceland.

Some countries' performance in the TIMSS Population 3 tests may have been affected by the larger percentage of the school-leaving-age population studying a particular subject, and it is therefore useful to compare the mean scores for the highest scoring groups of students studying each subject. Whether the proportion was the top 10 per cent or the top 5 per cent, the

Australian students achieved good to excellent results internationally.

When the top 5 per cent of advanced mathematics students in each country were compared, Australians performed in the highest group, with students from Slovenia, France and Switzerland, and better than Canadian, Swedish, Czech and US students.

In mathematics and science literacy, the top quarter of students, in Sweden the Netherlands and Norway, all scored significantly higher than those in other countries. Australia was placed in a second group, alongside countries such as Switzerland, New Zealand and Canada.

Gender comparisons

Males performed better than females in mathematics and science in most countries participating in TIMSS Population 3. In advanced mathematics Australia showed the second lowest gender difference, and it was one of only five countries in which the difference was not statistically significant.

Males significantly out-performed females in the Population 3 mathematics and science literacy test in nearly all countries, including Australia (though the difference in Australia was below the international average). This contrasts with the lack of significant gender differences in both mathematics and science at the 13-year-old Population 2 level in this country, and raises the possibility that participation and equity initiatives conducted in the earlier years may not have a lasting effect. However, it could also mean that the year 12 population tested may not have experienced these programs as intensively as younger students in the mid-1990s.

Survey of Aspects of Literacy

The Survey of Aspects of Literacy was a national survey by the Australian Bureau of Statistics designed to measure elements of the literacy and numeracy skills of Australians aged 15–74. The skills covered by the survey were those needed to use printed material found at work, at home and in the community. The survey was conducted between May and July 1996.

As well as measuring the literacy levels of Australian adults, the Survey of Aspects of Literacy also assessed the skill levels of 15–74-year-old Australians in quantitative dimensions (ability to perform arithmetic operations using numbers contained in printed texts or documents). The results were reported through five levels, with 1 the lowest and 5 the highest. The survey showed that 46 per cent of Australians

had skills at Levels 1 and 2. Gender, language backgrounds and age were significant factors related to these skills.

Young people aged 15–24 had reasonable levels of quantitative literacy skills; however, some 15 per cent of those still at school were at the lowest level. Young people were found to not always have the highest skill levels although, in general, the young were more quantitatively literate than older Australians.

International Mathematics Olympiad

In 1998, the Commonwealth Government provided funding to support school-based extension programs and advanced training to enhance students' ability to solve mathematical problems as well as their potential to undertake tertiary study. Talented mathematics students were selected from these programs to train for, and compete in, the International Mathematics Olympiad, where Australia's team won four silver and two bronze medals.

National developments in numeracy

During 1998, the Commonwealth Government agreed to new national initiatives in the area of school numeracy. These initiatives are designed to help Australia's young people achieve the level of numeracy they need to participate fully in education, in employment and in our technological society. During 1998 and 1999, \$3 million was allocated from the Literacy Programme for strategic national projects to provide foundation work to support school numeracy.

The Australian Association of Mathematics Teachers hosted a School Numeracy Assistance and Assessment Forum in early November. The forum brought together key stakeholders in school numeracy education to collaboratively identify national numeracy priority areas and to advise the Commonwealth on a possible suite of project work addressing these priority areas within the context of the MCEETYA-agreed national goals and the National Literacy and Numeracy Plan. All States and Territories and sectors were represented at the forum.

The suite of strategic work identified through the forum will assist the implementation of the numeracy component of the National Plan by investigating various aspects of numeracy education and providing foundation work and research to support numeracy in schools.

Languages other than English

Enrolment trends

In 1998, there was a significant increase in enrolments in languages other than English (LOTE) right across the country. Details provided by individual States and Territories are as follows.

New South Wales

In 1998, 17,050 students studied a language for the School Certificate, representing 21.3 per cent of year 10 students. This is a slightly higher proportion of students than in 1997. The most frequently studied languages were Japanese (4,525) and French (4,343). These numbers for Japanese are slightly lower than those for 1997, while the numbers for French represent an increase since 1997.

At the 1998, NSW Higher School Certificate, 8,056 students undertook a language subject, representing 13.3 per cent of year 12 students. This is a slightly lower proportion of students than in 1997 (13.9 per cent). Japanese was the language with the greatest number of HSC students (1,726), followed by French (1,520) and German (757). In terms of trends, however, Japanese had 2 per cent fewer students in 1998 while French and German grew by 8 per cent and 12 per cent respectively. Participation rates in other languages, including community languages, were consistent with those of 1997.

In 1998, there were 901 government primary schools with language programs and 39 per cent of primary students (174,000) in government schools studied at least one language. One hundred and thirty-seven government primary schools provided programs in more than one language.

There was an increase in the number of primary students studying a community language, from 11 per cent of students in 1997 to 12 per cent in 1998. Fifty-one per cent of primary students learning a language were studying one of the four National Asian Languages and Studies in Australian Schools (NALSAS) languages, while 17 per cent were learning either French or German.

Victoria

In 1998, 1,249 (97 per cent) of Victorian government primary schools and 306 (almost 100 per cent) of government secondary colleges offered LOTE programs. The number of primary students learning languages increased to 264,732 or from 84 per cent in 1997 to 87 per cent in 1998. Almost 93

per cent of primary schools provided LOTE at years 3 to 6, the year levels targeted for 1998 in the LOTE Strategy Plan, with over 98 per cent of students at those levels participating.

The number of secondary students learning languages increased to 115,501 or from 53 per cent in 1997 to 55 per cent in 1998, including 99 per cent of year 7 students, 95 per cent of year 8 students, 63 per cent of year 9 students and 35 per cent of year 10 students. For the Victorian Certificate of Education years, 14 per cent of year 11 students and 12 per cent of year 12 students studied LOTE in government schools, including the Victorian School of Languages. A total of 4,047 students in government schools successfully completed a year 12 LOTE in one of 35 languages.

In 1998, 709 government primary schools (57 per cent) and 239 secondary colleges (78 per cent) offering LOTE taught one of the four Asian languages targeted under the NALSAS strategy. The number of primary students learning the four targeted Asian languages increased to 142,561 students (up from 135,988 in 1997) or 54 per cent of all primary students learning languages in 1998, while the number of secondary students learning these languages increased to 54,981 (48 per cent) of students learning languages from 50,852 (40.9 per cent) in 1997.

In 1996, the percentage of Catholic school students in years 3–10 studying a LOTE (96.3 per cent) already exceeded the national target of 60 per cent for 2006. In 1998, this had increased to 98.8 per cent of students in years 3–10 studying a LOTE. There was a 2 per cent increase (2,228 student enrolments) in a priority Asian language in years 3–10.

For year 12, the national target is for 25 per cent of students to be studying a LOTE by the year 2006. In 1998, 12.1 per cent of year 12 Catholic school students were studying a LOTE. This represented an increase of 2.6 per cent over 1997. For the four priority Asian languages – Chinese, Indonesian, Japanese, or Korean – the target is for 15 per cent of year 12 students to be studying one of these languages by 2006. In 1998, 3.5 per cent of year 12 students, out of a total of 10,478 year 12 students, were studying a priority Asian language in Catholic schools, a 1.4 per cent increase from 1997.

Queensland

There has been a fairly stable rate of participation in LOTE subjects over the past five years. Participation rates in LOTE subjects in state, Catholic and independent schools have also remained quite stable, at under 10 per cent for state schools, usually over 10 per cent for Catholic schools, and around 20 per cent for independent schools. There have consistently

been over twice as many females as males studying LOTE subjects throughout this period.

The only individual LOTE subjects in which participation has significantly increased over the past five years are Chinese, in which enrolments have increased by over 50 per cent (mainly due to increases in 1996 and 1997), and Indonesian, in which enrolments have trebled (also mainly due to increases in 1996 and 1997). The most commonly studied languages have remained Japanese (5 per cent enrolment in 1998), German (2.3 per cent) and French (1.8 per cent).

South Australia

In 1998, 121,108 students studied a LOTE in government schools, which represented 66.5 per cent of students (84 per cent of primary students and 33.6 per cent of secondary students). There were 532 primary and secondary schools offering a LOTE program, representing 84 per cent of all schools in 1998.

There was an increase in the number of students studying one or more of the targeted Asian languages in government schools: 45,370 primary students and 8,538 secondary students (a total of 53,908 students) studied Chinese, Indonesian and Japanese in 1998. This represented 45.6 per cent of primary students and 39 per cent of secondary students studying a LOTE. In 1998, there were 288 teachers of Chinese, Indonesian and Japanese, a 7 per cent increase over 1997.

Western Australia

Driven by both the Education Department's LOTE 2000 initiative and NALSAS, student participation in government schools in LOTE continued to increase at a very significant rate. Implementation of LOTE 2000 began in 1995 and, by 1998, LOTE studies were offered by some 660 government schools. Compared with 1994 participation rates, the total number of LOTE students increased by 18 per cent, with substantial growth at specific year levels: 42 per cent at year 3, 45 per cent at year 4, 44 per cent at year 5, 32 per cent at year 6, 27 per cent at year 7 and 40 per cent at year 8.

In 1998, 52,080 students participated in non-NALSAS languages (52.5 per cent of all LOTE students) compared with 45,593 (58.6 per cent) in 1997. The most popular language was Italian, followed by Indonesian, Japanese and French, even though it was not a deliberate policy to encourage the study of Italian. School communities were able to select the language to be taught in a particular school. The large number of students studying Italian stems from the 1980s, when

Italian, being the strongest community language, was taught widely as part of the Contributory Languages Program to students in years 6 and 7. When schools were asked to select a language to be taught under LOTE 2000, many opted to continue with Italian.

The NALSAS languages are regarded as priority languages by the Education Department and form an important part of the LOTE 2000 strategy. There has been very significant growth in enrolments: in 1994, 9 per cent of students studied Indonesian, compared with 24 per cent in 1998; and 20 per cent of students studied Japanese, compared with 22 per cent in 1998. Programs in Indonesian and Japanese, involving a combination of computer, telephone and satellite links, were delivered to 36 small rural and isolated primary schools. At the secondary level, Japanese was provided through telematics to 14 schools.

In the Catholic sector, the number of schools implementing studies of Asia as part of the Access Asia Schools program increased from 112 in 1997 to 129 in 1998. The number of students participating in Chinese (Mandarin) studies continued to fall and it is likely that these programs will be terminated. This is not a unique situation and the Catholic Education Office will liaise with other systems in exploring solutions to this problem. Smaller country centres continued to experience some staffing difficulties but in the metropolitan area some primary schools were able to create sufficient demand for LOTE to be able to offer 0.5 time positions to LOTE teachers.

Tasmania

LOTE enrolments in primary schools in 1998 were almost identical to those of 1997. There was a slight drop in Italian and a notable rise in German numbers. Of the children studying a LOTE in Tasmanian government primary schools, 65 per cent of them were involved in either an Indonesian or a Japanese program. Eighty-five of the 143 government primary schools (59 per cent) ran a LOTE program of some description in 1998, an increase of 15 schools on last year's figures. Of the 26 district high schools, 20 (77 per cent) conducted LOTE programs in their primary sections.

The number of primary school LOTE learners continued to rise in the wake of Commonwealth and State government support for the implementation of the State's LOTE policy. On top of 1997's 4 per cent increase in primary LOTE numbers, figures went up by another 7.5 per cent in 1998. As might be expected, given the level of support which is being offered, 71 per cent of the LOTE students in 1998 were in

Grades 3, 4 and 5. There was only a slight change in the Asian / European ratio, with 65 per cent (66 per cent last year) of LOTE students studying either Indonesian or Japanese.

In the secondary sector, most languages showed no more than minor variations on the previous year's enrolment figures. The two LOTE which have shown a marked difference are Indonesian (down 6 per cent) and Japanese (up 10 per cent) and it is almost a case of what one LOTE lost, the other gained. There was, nonetheless, something of a resurgence in the study of Japanese in 1998. As was observed last year, Indonesian continued to attract very good numbers in lower secondary classes but this does not seem to be the case beyond year 8 when students are given the option to study a LOTE. As far as the LOTE 'balance' is concerned, there seems to have been a slight levelling off, with the ratio being much the same as in 1997 (63 per cent Asian : 37 per cent European).

While the total secondary enrolment figures (years 7–12) were almost identical to those of 1997, there was a 1.5 per cent fall in the number of students who included a LOTE in their study program. As well, a continuing decline was noted in the number of secondary/senior secondary students who included a LOTE in their study program. The figure of 34.56 per cent represented the lowest on record. Of all year 7–12 LOTE enrolments, statewide, 55 per cent were female, the same as in 1997. Of all year 9–12 LOTE enrolments (when LOTE is optional), 72 per cent were female (68 per cent in 1997) and of all year 11/12 LOTE enrolments, 74 per cent were female.

Northern Territory

The Northern Territory continued to demonstrate growth in participation rates in this learning area. This is a direct result of the availability of after-hours classes offered by the Northern Territory School of Languages in Darwin and Alice Springs. The opportunity to study a range of languages in these classes provided additional options for primary-aged students, as most primary schools taught Indonesian only.

Australian Capital Territory

In 1998, there were 23,322 LOTE enrolments in government schools. There was a 6 per cent decrease in LOTE enrolments between 1997 and 1998. The greatest decrease in LOTE enrolments was in the junior secondary sector, at 8 per cent, while enrolments in senior secondary schools actually increased by 9 per cent. The decrease in LOTE enrolments was higher than the decrease in the student population overall.

Between 1993 and 1998 there was a 22 per cent increase in the number of LOTE enrolments in government schools. Most of the increase occurred in primary schools, at

37 per cent. During that period there was a 13 per cent increase in LOTE enrolments as a proportion of the student population.

NALSAS Strategy

The Commonwealth continued its support for the NALSAS Strategy by providing additional funding in its Budget to the end of 1999. As well as supporting the enhanced and expanded provision of the four designated languages and Studies of Asia, Commonwealth funding supported the Secretariat for the NALSAS Taskforce established by the Ministerial Council on Education, Employment, Training and Youth Affairs. Commonwealth funds also facilitated the development of a number of projects in collaboration with the States and Territories. These included developing curriculum material for languages and studies of Asia, work on teacher training courses and research on factors influencing the uptake of languages and pathways to proficiency.

Projects completed during 1998 included a series of texts to support the teaching and learning of studies of Asia, while a

professional development package, including web pages, to support the uptake of the material was commenced. Work also began on a curriculum support document to assist Australian educators involved in developing curriculum at the classroom, school and policy levels to achieve breadth, depth and sequence in studies of Asia across the curriculum.

Two CD-ROMs, one each for Indonesian and Chinese, were produced to complement existing national curriculum material. In the area of teacher proficiency, an environmental scan began on what is being done to assess teacher language proficiency among Australian education systems. Further work also commenced on teacher professional development modules in studies of Asia and a graduate certificate in Chinese.

The NALSAS Taskforce drafted a comprehensive report to Ministers on progress with the strategy during its first quadrennium (1995–98). Research for the report supported the findings of the Commonwealth languages evaluation, and showed an increase in student participation in Asian languages, an increase in the number of schools offering the target Asian languages and an increase in Studies of Asia.