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PARLIAMENT OF TASMANIA

AUDITOR-GENERAL SPECIAL REPORT NO. 31

LITERACY AND NUMERACY IN TASMANIAN GOVERNMENT SCHOOLS

March 2000

Presented to both Houses of Parliament in accordance with the provisions of Section 57 of the Financial Management and Audit Act 1990

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30 March 2000

President
Legislative Council
HOBART

Speaker
House of Assembly
HOBART

Dear Mr President
Dear Mr Speaker

PERFORMANCE AUDIT NO. 31
LITERACY AND NUMERACY IN TASMANIAN GOVERNMENT SCHOOLS

This report has been prepared consequent to examinations conducted under section 44 of the Financial Management and Audit Act 1990, for submission to Parliament under the provisions of section 57 of the Act.

Performance audits seek to provide Parliament with assessments of the effectiveness and efficiency of public sector programs and activities, thereby identifying opportunities for improved performance.

The information provided through this approach will, I am sure, assist Parliament in better evaluating agency performance and enhance Parliamentary decision making to the benefit of all Tasmanians.

Yours sincerely

A J McHugh
AUDITOR-GENERAL

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LIST OF ACRONYMS AND ABBREVIATIONS

ACER	Australian Council of Educational Research
AEW	Aboriginal Education Worker
ASSR	Assisted School Self Review
AST	Advanced Skills Teacher - Level 1 to 3
CTQSC	Commonwealth Targeted and Quality Schools Committee
DART	Developmental Assessment Resource for Teachers
DETYA	Department of Employment Education Training and Youth Affairs
DoE	Department of Education
ENI	Educational Needs Index
INISSS	Improving Numeracy for Indigenous Students in Secondary Schools Program
IESIP	Indigenous Education Strategic Initiative Program
KILOs	Key Intended Literacy Outcomes
KINOs	Key Intended Numeracy Outcomes
LNCG	The Literacy and Numeracy Co-ordinating Group
MARSS	Maintaining and Retaining Secondary Students at Schools
NSELS	National School English Literacy Survey 1996
OER	Office for Educational Review
OVET	Office of Vocational Education and Training
PASS	Program of Additional Support and Structure
PEO	Principal Education Officer
RBRI	Rowe Behaviour Rating Inventories
SES	Socioeconomic Status
TAFE	Technical And Further Education
TASSAB	Tasmanian Secondary Assessment Board
TCE	Tasmanian Certificate of Education
URL	Universal Resource Locator
VET	Vocational Education and Training

INTRODUCTION

Under the provisions of section 44(b) of the *Financial Management and Audit Act 1990* the Auditor-General may

> 'carry out examinations of the economy, efficiency and effectiveness of Government departments, public bodies or parts of Government departments or public bodies'.

The conduct of such audits is often referred to as performance auditing.

This report relates to a performance audit carried out by the Tasmanian Audit Office during the period September to December 1999 of achievement in literacy and numeracy in Tasmanian Government schools. It provides the findings from the performance audit as well as noting recommendations for further action.

This audit was selected because of the significance of effective literacy and numeracy skills in equipping children for the future. Performance in these learning areas has current widespread interest because it is recognised that literacy and numeracy achievement is not only important for individual advancement, but it is also crucial for the cultural and economic development of the Tasmanian community.

The Tasmanian Department of Education (DoE) has regarded the development of strong literacy and numeracy skills as a high priority since the endorsement by State, Territory and Commonwealth Education Ministers in 1997 of the national goal:

> That every child leaving primary school should be numerate and able to read, write and spell at an appropriate level.
>
> *Source:* http://www.detya.gov.au/schools/Literacy/Literacy&Numeracy/Benchmarks.htm *(19 October 1999)*

Reliable nationwide data on literacy attainment was not available until 1996 when the rigorous monitoring of entire student populations or cohorts at particular year levels, was implemented. In Tasmania however Statewide monitoring has occurred in both literacy and numeracy since the mid 1970s. Accessibility to information on Tasmanian literacy and numeracy achievement as well as action to address below targeted performance have been selected as the primary foci of the audit since these are considered to address the accountability requirements of State and national goals.

The steering committee consisted of representatives from DoE and the Tasmanian Audit Office as well as the Chair of the National Benchmarking Equating Steering Committee. Input was provided from the committee at the planning and reporting phases and comments on the final version of the draft report were received from the Australian Education Union (AEU), the Tasmanian Council of State School Parents Friends Associations and the Tasmanian Primary and Secondary Principals' Associations. The Audit Office takes this opportunity to thank all contributing parties, and in particular to highly commend DoE officers for their continued support and cooperation throughout the course of the audit.

Structure of the Department of Education

DoE was restructured in September 1998 following the change of Government and an organisational chart displaying the relationship between output groups is provided in Appendix A. The audit focussed primarily on offices within the Strategic Development and Evaluation Group including the Office of Education, the Office of Tasmanian Secondary

Schools Assessment, the Office of Vocational Education and Training and the Office for Educational Review.

Definitions of Literacy and Numeracy

In order to establish a common basis from which to examine achievement the definitions of literacy and numeracy adopted for the purpose of the audit were identical to those used by DoE. The following definition of literacy was agreed upon by State and Federal Ministers for Education in 1997:

> 'Literacy is the ability to read and use written information and to write appropriately in a range of contexts. It also involves the integration of speaking, listening, viewing and critical thinking with reading and writing, and includes the cultural knowledge which enables the speaker, writer, or reader to recognise and use language appropriate to different social situations.'
>
> *Source: Tasmanian State Literacy and Numeracy Plan 2000-2002*

Tasmania has adopted the following definition of numeracy which is similar to the national definition to be used for benchmarking:

> To be numerate is to have and to be able to use appropriate mathematical knowledge, understanding, skills, intuition and experience whenever they are needed in everyday life. Numeracy is more than just being able to manipulate numbers. The content of numeracy is derived from just five strands of the mathematics curriculum – space, number, measurement, chance and data, and (pattern and) algebra – as described in the National Statement and Profiles.
>
> *Source: Tasmanian State Literacy and Numeracy Plan 2000-2002*

The Tasmanian measures for performance in literacy and numeracy are derived from the English and Mathematics outcomes defined by the National Statements and Profiles. Statements provide an account of the strands and bands of each learning area. Strands are groupings of understandings of a learning area's content, processes and concepts. Bands are the broad stages in a sequence for developing knowledge, understandings and skills in a learning area. There are four bands and generally, Bands A and B will be covered in primary schooling, while bands C and D will be covered in secondary school to Year 10, and in the post-compulsory years respectively.

English profile outcomes are structured into three 'strands': 'Speaking and Listening', 'Reading and Viewing' and 'Writing'. Within each profile strand, outcomes are also organised into eight 'levels' of broadly defined ranges of achievement for Years 1 to 10. Mathematics profile outcomes are structured into six strands: 'Space', 'Number', 'Measurement', 'Chance and Data', 'Algebra' and 'Working Mathematically'. Developmental attainment has also been broadly described for eight levels of achievement across the compulsory years of schooling (Years 1-10).

At the primary and lower-secondary levels (Years K-8) DoE has defined measures of performance in literacy and numeracy, however this has not been undertaken at the upper and senior secondary levels (Years 9-12). For the purpose of examining achievement in literacy and numeracy at this level it has therefore been necessary to focus on performance data for the secondary subjects, English and Mathematics. While not identical in terms of scope and outcomes, these subjects are nevertheless important in fostering literacy and numeracy and the intersection between these learning areas is considered sufficient for inferences to be made about associated competencies.

AUDIT OPINION

Report Title	Literacy and Numeracy
Nature of the Audit	The objectives of this performance audit were to identify: • Test outcomes and the extent to which the general State or localised outcomes are made known to the public; and • Linkages between results from literacy and numeracy tests and Departmental action to address below targeted performance.
Responsible Party	The Head of Agency
Mandate	This audit has been carried out under the provisions of Section 44(b) of the *Financial Management and Audit Act 1990* which provides that: *"The Auditor-General may carry out examinations of the economy, efficiency and effectiveness of Government departments, public bodies or parts of Government department or public bodies."*
Applicable Standards	This audit has been performed in accordance with Australian Auditing Standard AUS 806 "Performance Auditing" which states that: *"The objective of a performance audit is to enable the auditor to express an opinion whether, in all material respects, all or part of an entity's activities have been carried out economically, and/or efficiently and/or effectively."*
Limitation on Audit Assurance	Audit procedures were restricted to a review of documentary evidence collated and provided by DoE in relation to a selected set of tests and programs for literacy and numeracy. This provides less evidence than would be available by applying more extensive and comprehensive procedures. The evidence provided by these procedures restricts the audit assurance to a moderate level, as the evidence is persuasive rather than conclusive in nature.
Audit Criteria	The assessment of DoE's management of literacy and numeracy was determined under the following categories for a range of monitoring programs: ▪ *Test Regime and Outcomes* ▪ *Extent of Publicity* ▪ *Below Targeted Performance and Identified Cause* ▪ *Departmental Action*

Conclusions

- I conclude that ongoing refinement of quantitative testing of literacy and numeracy at both primary and secondary government schools is in place. There is a need to improve the systemic collection of enrolment and assessment data at the subject level for Years 9 to 12.
- DoE expects individual schools to publish aggregated test outcomes in Partnership Agreements and Annual Reports as well as to make summarised outcomes for 'like-schools', district and sex-based freely available. It also endorses the provision of individual student reports from the *Statewide Monitoring Program* to students and parents and the procedures in place to mandate the implementation of this process appear to be adequate.
- The acknowledged difficulties associated with the current measure of the ENI and the consequential effects on funding for schools warrant the investigation of the viability of other models. DoE has commenced a review of the relevant resource allocation.
- Based on the standards of literacy and numeracy test results at the Year 3 level in 1998 and some preliminary results from national benchmarking of Year 3 reading in 1998, it would appear that standards in these learning areas for this year level are adequate.
- DoE is addressing the need to emphasise the acquisition of literacy and numeracy skills for younger children and targeted groups. Most intervention programs directly related to literacy and numeracy are being quantitatively evaluated. The statistical evidence available in relation to two years of a three year Flying Start Program does not show significant improvements in test results and requires consideration in future planning.
- Based on the test results for literacy and numeracy at the Year 7 level in 1998 and the Year 9 numeracy test results in 1997, I conclude that there appears to be significant under achievement in the learning areas reviewed for these year groups. Further, there is only a small proportion of funding for intervention programs in literacy and numeracy at the secondary sector.

AUDIT OBJECTIVES, SCOPE AND COST

Audit Objectives

The objectives of the performance audit were to identify:

- Test outcomes and the extent to which the general State or localised outcomes are made known to the public; and
- Linkages between results from literacy and numeracy tests and Departmental action to address below-targeted performance.

Scope of the Audit

Localised and State outcomes, below targeted performance and departmental action were examined for a range of monitoring programs and sources of information including:

- The Statewide Monitoring Program;
- The National Benchmarking Program;
- The Year 5 Reading Monitoring Program 1976 to 1996.
- The Year 9 Numeracy Monitoring Program 1977 to 1997;
- Tasmanian Secondary Assessment Board (TASSAB) Results 1990 to 1998; and
- The Report on Post Compulsory-Education and Training of Tasmania's Youth.

Literacy and numeracy have been the subject of considerable literature and professional discussion over many years. They are complex topics on which there is a great range of views and a large body of research. The performance audit was confined to an examination of the quantifiable outputs of the testing programs and sources described above, and did not encompass a broader review of qualitative findings. Further, not all factors which may have impacted upon performance in literacy and numeracy were reviewed. Absenteeism, the school environment and classroom management practices were not examined, and nor was value-adding of performance above minimally accepted standards. Interpretations of results should therefore be made in accordance with the limitations of this approach.

Audit Resources and Timing

Planning for the performance audit commenced in September 1999. Testing at the Department of Education (DoE) occurred in November and December 1999. The report was finalised in January 1999.

The total cost of the audit, including the cost of Tasmanian Audit Office staff is estimated as $37 000.

BACKGROUND

In April 1996 the Federal Minister for Schools, Vocational Education and Training, Dr David Kemp announced that the National School English Literacy Survey (NSELS) would be conducted for Years 3 and 5. This decision followed a recommendation made by the Australian Council of Educational Research (ACER) after a trial of procedures for the collection of valid and reliable data on literacy achievements had been completed.

One of the aims of the NSELS Survey was:

> 'To obtain base-line data so that it is possible to establish national benchmarks against which teachers, schools and systems can assess the effectiveness of current programs and can adjust their goals and programs to improve literacy levels (p iv).'

Since April 1997 DoE has stipulated that all schools monitor, and report their progress in achieving, improvements in students' literacy and numeracy outcomes, in addition to placing an emphasis on the attainment of improvement in these learning areas. In addition, the 1993 Literacy Policy was updated to reflect changes that had occurred since that time and a new Numeracy Policy was developed as well. These policies describe the conditions in which improved learning outcomes in literacy and numeracy could be expected and achieved.

At this time, Tasmania also agreed to participate in a national plan designed to improve student literacy. This plan included: assessment of the literacy needs of all students in the first years of schooling; early intervention to address the needs of students at risk; assessment against benchmarks at years 3, 5, 7 and 9; and reporting on student achievement against these benchmarks from 1998. There had also been agreement to report on the attainment of numeracy benchmarks for all students at Years 3, 5, 7 and 9 beginning with Years 3 and 5 in 1998. The Commonwealth Literacy Program and accompanying guidelines were devised in 1997 to facilitate the implementation of this plan.

A *Literacy and Numeracy Plan* for Tasmania was produced in 1998 in order to meet the guidelines for the administration of the Commonwealth Literacy Program. While there was to be a general emphasis on all schools, there was also to be a particular emphasis on students who were educationally disadvantaged in terms of their literacy and numeracy outcomes. In addition, DoE intended to target students in the first three years of full-time schooling, as there was clear evidence that these were the crucial years for developing competence in literacy. There was also to be a specific focus on parents and their contribution to literacy development.

All schools that were in receipt of Commonwealth Literacy Program funding were required to establish targets for literacy and numeracy as part of the development of their Partnership Agreement. Where school data showed expected improvement in the attainment of literacy and numeracy outcomes, funding was to be maintained. Where no improvement was shown further information was to be requested and if there were no reasonable extenuating circumstances to explain the results, schools were to be required to modify the literacy or numeracy program. In addition principal contracts contained a direct reference to the target outcomes detailed in the school's Partnership Agreement. If the outcomes were not reached there was an option not to renew a principal's contract.

The change in the State Government in September 1998 resulted in some modifications to this approach, including the replacement of Principal contracts with the Principal's Incentive Program, but the emphasis on improved performance in literacy and numeracy through the *Literacy and Numeracy Plans for 1999 and 2000-2002* has been maintained.

Comprehensive system level assessment has been undertaken by the Office for Educational Review (OER) to facilitate the monitoring of performance. Assessment programs include the *Statewide Monitoring Program*, the *National Benchmarking* process and the longitudinal assessment programs: the *Year 5 Reading Monitoring Program 1976 to 1996* (previously known as the *Survey of Basic Reading Skills of 10-Year-Old Tasmanian Students* prior to 1993)*, the Year 9 Numeracy Assessment and Monitoring Program 1978 to 1997 ,* (previously known as the *Survey of Basic Numeracy Skills of 10-Year-Old Tasmanian Students* prior to 1994), the *Survey of Basic Reading Skills of 14-Year-Old Tasmanian Students* (prior to 1991) and the *Survey of Basic Numeracy Skills of 10-Year-Old Tasmanian Students* (prior to 1992). DoE has also implemented strategic intervention programs and evaluations for all sectors and specific target groups, and these are also assessed by OER.

Prior to 1998, longitudinal monitoring of statewide performance was undertaken for Government schools through the assessment of reading and numeracy for 10 year old and 14 year old students through the Year 5 DART literacy test in 1996 and *the Year 9 Numeracy Assessment and Monitoring Program* in 1997. DoE implemented the *Statewide Monitoring Program* for Government schools in 1998 to expand its system level monitoring program by comprehensively assessing all students in Years 3 and 7 in literacy and numeracy. These same cohorts are to be assessed in the Year 2000 when they are in Years 5 and 9 respectively. From the Year 2000, all students in Years 3, 5, 7, and 9 will be assessed in literacy and numeracy every second year.

Previous Reviews and Audits

In 1999 the Audit Office of NSW produced the report *The School Accountability and Framework Model*. The primary objective of the audit was to determine the extent to which the current model offered an effective, efficient and economic approach to achieve accountability at the school level. To develop an opinion on the overall audit objective, the audit set out to test four specific hypotheses, that is whether:

- There is clear and realistic definition of who is accountable, and for what;
- Performance measurement and performance reporting mechanisms support accountability requirements; and
- Meaningful and reliable information is provided to parents and the community to enable properly informed judgements about school performance.

The following recommendations of relevance to the performance management component of the audit were made:

- Schools should report more extensively and consistently on a common set of indicators covering:
    - Comprehensive measures of students achievement; and
    - Value added measures.
- The NSW Department of Education should afford schools greater freedom to report in a manner which reflects school context and culture. Given such freedom, however there will also be a need to implement minimum standards for report content and quality, including a requirement for reports to incorporate:
    - Clear and unequivocal statements which fully and accurately reflect performance against objectives; and
    - Targets which clearly explain what the school intends to achieve in the coming twelve months and how this will be measured.

- To support the continued implementation of the model, review the extent, application and distribution of resources for:
  - Training, direct guidance and advice provided to schools and school evaluation committees in self-evaluation, reporting and school improvement; and
  - Training to selected principals and other senior school staff in basic planning, data analysis and evaluation techniques.

TEST OUTCOMES PRIMARY SECTOR

Statewide Monitoring Program 1998

Results of the *Statewide Monitoring Program* inform schools and DoE about current student achievement and performance as well as providing the basis for reporting against National Literacy and Numeracy Benchmarks. In July 1998 all Year 3 and 7 students were tested in literacy and numeracy with individual and school results being distributed to schools in September 1998. Statewide outcomes for the monitoring program were measured against Key Intended Literacy Outcomes (KILOs) and Key Intended Numeracy Outcomes (KINOs).

The KILOs, were drawn from curriculum materials, including the draft *National English Profile* (Curriculum Corporation, 1994) and are stated in two year levels (Kindergarten-Prep, Years 1-2, Years 3-4, Years 5-6, Years 7-8). According to the publication *Key Intended Literacy Outcomes Kindergarten to Year Eight* (DoE, 1994) the KILOs are regarded as the minimum standard that Tasmanian students need to achieve in order to become independent learners. Students that cannot attain minimum requirements are considered to need immediate, specially-focussed intervention.The KINOs are a subset of the outcomes defined in the publication *Mathematics–A Curriculum Profile for Australian Schools* (Curriculum Corporation, 1994). They are presented at three year levels (Kindergarten-Year 2, Years 3-5 and Years 6-8) and are also considered to correspond to reasonable expectations for achievement by students.

The KILOs and KINOs were developed by teachers and curriculum officers and are based on practical and theoretical knowledge of students' learning development. They are therefore considered to map the expected developmental progression of students' skills from K-8. This progression is made specific in the KILO Support Materials and the year-by-year model mathematics programs produced by DoE for teachers in 1995 and 1996 respectively. On this basis DoE considers the KILOs and KINOs to be sequentially calibrated measures of students' performance as they progress through school.

There are however no absolute standards in education measurement that remain unchanged over time and developmental frameworks are reviewed periodically on the basis of educational research. It is therefore to be expected that the KILO and KINO frameworks will be reviewed at regular intervals, and re-calibrated according to current professional knowledge. DoE has acknowledged that it is in the exploratory stage of establishing the effectiveness of the KILOs and KINOs for monitoring purposes and observations will inform any review of their sequence. In particular DoE has stated that in the secondary sector it is in the preliminary stages of matching KILOs and KINOs to performance, as measured by external tests.

Recommendation

Calibration of the Year 3 and 7 KILOs and KINOs should continue as an ongoing priority to further refine their suitability as a measure of performance at these year levels. This process should involve identification and subsequent adjustment of variance between the current standards and those appropriate for student performance in these year levels of schooling.

Further DoE has acknowledged that interpretations of the standards for the KILOs do vary across teachers, curriculum officers and officers responsible for educational measurement owing to the absence of a moderation process that ensures a common understanding of expected standards of achievement. Improved commonality of understanding of KILO and KINO outcomes is therefore not only concerned with testing but is equally important in

teaching practice. Such a process involving comparisons of assessed student work samples between teachers, subject coordinators and examiners is undertaken twice per year at the upper secondary and senior secondary levels (Years 9 to 12) for Tasmanian Certificate of Education (TCE) syllabuses. Any moderation process involves expense in terms of the time involved and the cost of production of relevant materials. Some materials may however be produced as a by-product of the development of teaching content and could be made available through the Internet.

Recommendation

DoE should continue to improve the commonality of understanding of assessments based on KILOs and KINOs through the provision of appropriate student work samples to teachers, curriculum officers and officers responsible for educational measurement.

In 1999, DoE also recognised a need to refine and simplify the current KILO definitions. After a five year period of use it was found there were too many and they were too broad, complex and jargonistic to be implemented effectively. A group was therefore convened to develop a continuum that identified 'key' KILOs and it is understood that the national literacy benchmarks will be incorporated into this modified set. The group is also currently focussing on the means by which the revised KILOs might be used in reporting to the system and to parents. It should be noted that the KINOs were not revised as part of this review.

Another relevant issue is whether the current presentation of KINOs in three year levels (eg Year 3-5), rather than two year KILO bands is optimal. DoE has stated that these bands were introduced on the basis of advice from the profession: clearly at the individual student level, developmental learning does not progress in a linear fashion and broader bands allow for differences in rates of learning. Broader bands also however recognise the inherent inaccuracy of measurement and narrow bands allied with appropriate cautions concerning the interpretation of the results could be an option worth consideration.

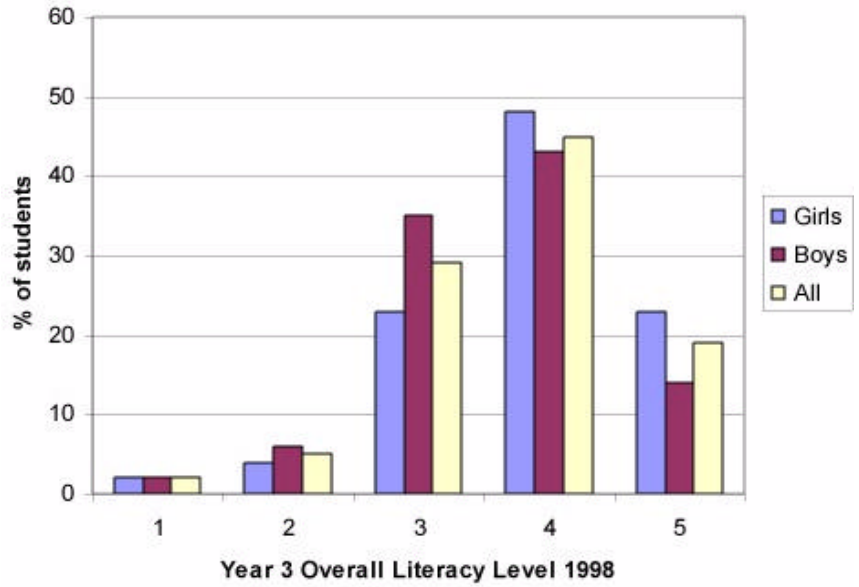
In addition the current KILOs and KINOs are not synchronised to the measurement of performance of the Year 3 and Year 7 cohorts and DoE has acknowledged that there is uncertainty about their correlation to grade levels. This is regarded as a problem for some teachers and parents who are of the view that year-specific KILOs and KINOs should be made available. The review of the KILOs has lead to the incorporation of benchmarks at years 3, 5 and 7 but a review of the KINOs and the subsequent introduction of KINOs for these year levels has not occurred. It would be desirable if this issue could be studied in the context of the national numeracy benchmarks which are themselves yet to be finalised

Recommendation

A review of the KINOs should be conducted at an appropriate point in the future when national numeracy benchmarks have been finalised in order to align prescribed outcomes more closely with the year levels tested by the monitoring programs.

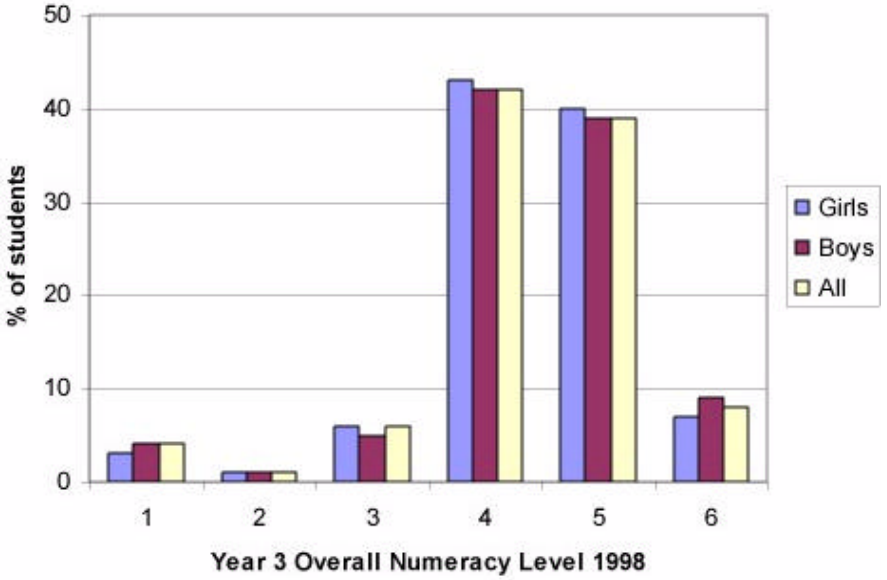
Multi-level analysis was used by OER in conjunction with the University of Melbourne to obtain accurate estimates of the importance of various factors that impinge on student achievement, by considering any hierarchical structure inherent in the data collected. This form of analysis which uses information from all available levels (including the student, class and school levels) has recently been adopted by DoE as the preferred method of analysis of factors (including behaviour) that effect educational systems.

State outcomes for the Year 3 cohort as measured in July 1998 were represented on the Internet in 1999 as a distribution of clustered column charts for each of the KILO and KINO outcome levels as shown in Figures 1a and 1b.



1. Insufficient information available to determine KILO level.
2. Is working towards 1-2 KILOs.
3. Has achieved 1-2 KILOs.
4. Has achieved 3-4 KILOs.
5. Has achieved 5-6 KILOs.

Figure 1a: Year 3 Overall Literacy Level Statewide Monitoring Program 1998



1. Not enough information to form description of this student's work
2. This student is working towards Year K-2 KINOs
3. This student has achieved Year K-2 KINOs
4. This student is working towards Year3-5 KINOs
5. This student has achieved Year 3-5 KINOs
6. This student is working towards Year 6-8 KINOs

Figure 1b: Year 3 Overall Numeracy Level Statewide Monitoring Program 1998

Outcomes representing performance below an appropriate level for the Year 3 cohort as tested in July 1998 are provided in Table 1.

Table 1: Percentage of Year 3 Cohort Performing at or Below Appropriate Grade Level in Numeracy and Literacy.

Statewide Monitoring Program	Year 3 Girls	Year 3 Boys
Literacy	4%<Years 1-2 KILOs	6%<Years 1-2 KILOs
Numeracy	7%<=Years K-2 KINOs	6%<=Years K-2 KINOs

Owing to the presentation of the KILOs and KINOs in two and three year levels, under-performance of Year 3 and Year 7 students has been ascertained by determining the percentages of students operating at or more than one to three grade levels below the appropriate level. For the Year 3 cohort, below targeted performance was measured by determining the percentages of students operating at one or two grades below Year 3.

In literacy, 4% of girls and 6% of boys were working towards but had not achieved Year 1-2 KILOs. These students could not be considered to be working towards Year 3-4 KILOs. In numeracy, 7% of girls and 6% of boys within the Year 3 cohort had achieved Year 2 KINOs but these students could not be considered to be working towards Year 5 KINOs.

As well as gathering information on performance in literacy and numeracy the program was designed to measure student behaviour. This was done through the completion by teachers of a 16 item Teacher Observation form from the Rowe Behaviour Rating Inventories (RBRI) Profile. A form was completed for each student in Year 3 but for Year 7 the completion of the RBRI was a matter for each school and consequently some aspects of the data analysis for Year 7 were considered questionable by the evaluators.

The multi-level analyses were performed by the Principal Research Fellow, Associate Professor, Centre for Applied Educational Research, The University of Melbourne and are described in detail in Appendix B. The findings suggest that inattentiveness has a more significant effect on the variance of reading, writing and number scores than does the combined effect of the 'intake' variables sex, socioeconomic status or Indigenous status.

When a reciprocal relationship between reading scores and inattentiveness was modelled using the Grade 3 data, the model did not fit the data as well as it did when just the effect of inattentiveness on reading scores was modelled. Other studies with children of Grade 3 age, however, suggest that there is indeed a bi-directional relationship between reading performance and inattentiveness (i.e. reading performance affects inattentiveness, which in turn affects reading performance). As noted in the report:

> ... we know from large-scale, longitudinal research that students' early growth in reading skills have a strong and enduring effect on reducing their current and subsequent inattentive behaviours, and have positive impacts on their achievements in all cognitive areas of the curriculum (p21).

Recommendation

The effect of inattentiveness on literacy and numeracy achievement should continue to be investigated to determine the nature of the bi-directional relationship between these variables.

When literacy and numeracy were computed as composite variables they were found to be highly correlated with a correlation coefficient of 0.808 which corresponds to a 65% 'overlap' between literacy and numeracy. In addition the significance of reading as an underpinning factor in the development of literacy skills was emphasised. This has been reiterated in terms of the suggestion that recognition of this truism should be transformed into committed practice.

Localised outcomes for literacy and numeracy have been published on the Internet during 1999 for the Year 3 cohorts according to 'like school' and district results. In the 1980s DoE considered there was a strong correlation between the level of literacy and numeracy achievement of a school and the socioeconomic background of school populations. An Educational Needs Index (ENI) based on socioeconomic data was therefore derived to as a general means of classification for allocative and analytical purposes. Appendix C provides an explanation of the formula by which the ENI is calculated. Appendix D provides a map of the Tasmanian districts and 'like school' and district results are provided in Appendix E. 'Like school' results have been published according to educational needs classifications at the school level.

Recently, however, DoE has expressed concern about the reliability of the ENI as a measure of disadvantage since it is based on 1986 Census data and also it cannot be used to target funding towards under performing students in schools with a low ENI . These issues and proposed action are discussed in greater detail in the section *Departmental Action*. While the proportion of students performing at the lower to higher levels in both literacy and numeracy was greater for schools with higher ENIs there were nonetheless a significant number of students in schools with lower ENIs that were performing below an appropriate level. Further, in all cases the Hartz and the Derwent Districts had the greater percentage of students performing at the higher and lower levels respectively.

The distribution of boys' and girls' estimated literacy abilities by category of ENI for the Year 3 cohort is displayed in graphical form in Appendix F. The results suggest that the median literacy for boys and girls decreased with increasing ENI category and the median literacy ability of girls exceeded that for boys for every category of ENI.

Year 5 Reading Monitoring Program 1976 to 1996

Trends in reading performance of primary school students have been monitored from 1976 to 1996. Performance from 1976 to 1993 was monitored for 10-year-olds as measured by the 10R tests. Performance in 1996 was measured for Year 5 students using the Developmental Assessment Resource for Teachers (DART). The results are shown in Figure 2.

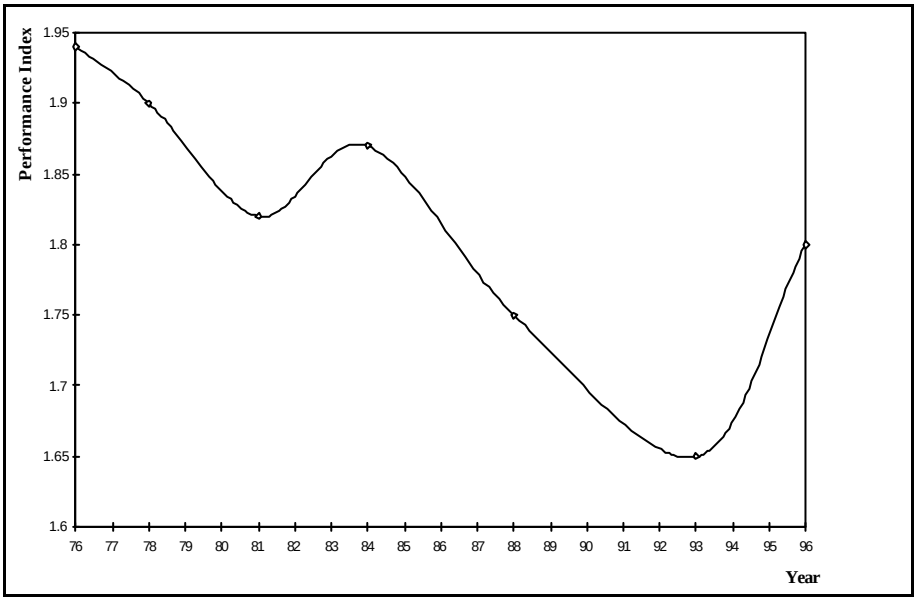


Figure 2: Performance in reading 1976 to 1996. Performance from 1976 to 1993 is for 10 year-olds as measured by the 10R tests. Performance in 1996 is for Year 5 students as measured by the DART Reading Test.

An analysis of outcomes (OER, February 1998) indicates that a statistically significant downward trend occurred in reading scores from 1975 to 1993. This is confirmed by an analysis of trends in reading performance for 10 year old students from another survey: the *1993 Survey of Basic Reading Skills of 10-Year-Old Tasmanian Students*. Reading for this program was measured as a continuous variable and without further detailed analysis involving linkage of KILOs to item difficulties, it is not possible to give a concise qualitative description of the extent of the decline from 1976 to 1996. (One valid interpretation is that the performance of the average student in 1993 was approximately 4% lower than that of the average student in 1975). DoE did however consider this decline to be sufficiently significant to warrant intervention.

The apparent upward trend in reading performance from 1993 to 1996 should however be treated with extreme caution according to DoE because the groups compared were different. The 10R tests were administered to 10 year olds and the 1996 DART (English) test was administered to Year 5 students. In 1993 approximately 34% of all students tested were either in Year 4 or Year 3 therefore causing the 1996 performance to be improperly inflated in comparison with previous performance.

National Benchmarking 1998

In July 1996, Ministers for Education in States, Territories and the Commonwealth agreed that 'every child leaving primary school should be numerate and be able to read, write and spell at an appropriate level' and the sub-goal that 'every child commencing school from 1998 will achieve a minimum acceptable literacy and numeracy standard within four years'.

Benchmarks are defined as:

> a set of indicators or descriptors which represent nationally agreed minimum acceptable standards for literacy and numeracy at a particular year level. In this context 'minimum acceptable standard' means a critical level of literacy and numeracy without which a student will have difficulty making sufficient progress at school.
>
> *Source:* http://www.detya.gov.au/schools/Literacy/Literacy&Numeracy/Benchmarks.htm *(19 October 1999)*

The 1998 benchmarking process tested the performance of Year 3 students in reading only. Typically, texts able to read by students attaining the Year 3 benchmark have predictable text and sentence structures and use straightforward every day language. Words that may be unfamiliar are explained in the writing or through the text.

Based on the initial methodology established to report against benchmarks, 84% of Year 3 students in Tasmanian Government schools had reached the benchmark standard in reading by July 1998. Results of subgroups showed that 19% of boys, 12% of girls and 28% of Indigenous students performed below the benchmark. It should be noted that these preliminary results are subject to verification within the context of the revised equating process although DoE does not expect this to affect the results significantly. A comparison of State benchmarking results for Year 3 students is not to be published by the Benchmarking Taskforce due to a disagreement between some State Ministers about the suitability of tests. Instead States will decide to act on an individual basis with regard to the publishing of their own results.

Third International Mathematics and Science Study 1996

An inter-state comparison of the mean mathematics scores, together with standard errors on the Third International Mathematics and Science Study (TIMSS) by the Australian Council for Educational Research (ACER) is shown in Table 2. Average ages ranged from 9.5 to 10.4 years.

Table 2: TIMMS Study 1996 – Mathematics Achievement by State for Students within an Average Age of 9.5 to 10.4 years.

Table 2 Mathematics Achievement by State, Population 1

State	Best estimate of mean score	Best estimate of average age	Avge years of full-time school	QLD	WA	NT	SA	ACT	NSW	VIC	TAS
QLD	546 ± 6	10.0 ± .04	4.28 ± .02		•	•	•	•	**D**	**D**	**D**
WA	545 ± 6	10.0 ± .01	4.25 ± .01	•		•	•	•	**D**	**D**	**D**
NT	543 ± 10	10.2 ± .09	5.14 ± .14	•	•		•	•	**D**	**D**	**D**
SA	540 ± 8	10.4 ± .02	5.20 ± .03	•	•	•		•	**D**	**D**	**D**
ACT	523 ± 11	9.7 ± .08	4.35 ± .07	•	•	•	•		**D**	•	**D**
NSW	498 ± 7	9.5 ± .02	4.25 ± .01	**Ñ**	**Ñ**	**Ñ**	**Ñ**	**Ñ**		•	•
VIC	498 ± 8	9.6 ± .04	4.22 ± .02	**Ñ**	**Ñ**	**Ñ**	**Ñ**	•	•		•
TAS	490 ± 8	9.6 ± .03	4.03 ± .03	**Ñ**	**Ñ**	**Ñ**	**Ñ**	**Ñ**	•	•	

Instructions: Read across the row to compare a State's or Territory's performance with the performance of each State/Territory listed in the column headings.

• No statistically significant difference from comparison State
D Mean achievement significantly higher than comparison State
Ñ Mean achievement significantly lower than comparison State

Comparisons of the results by taking into account the 'design effect' due to sampling students by classes within schools showed that the five highest scoring States and Territories (QLD, WA, SA, ACT and NT) all performed significantly better than the other three states (NSW, VIC and TAS). It should be noted that the results displayed above represent the collective performance of both government and non-government schools in each state.

DoE has expressed concerns about sampling procedures for TIMSS. According to ACER the selected schools for some countries all participated as is expected by their central Departments. In many countries though, including Australia, schools have autonomy in deciding whether to take part in surveys such as TIMSS. For Australia a response rate of 75% of the originally selected schools was considered to be very good in a 'democratic' context, and comparisons of responding schools with national data on several variables gave no suggestion that the responding schools were a biased sample.

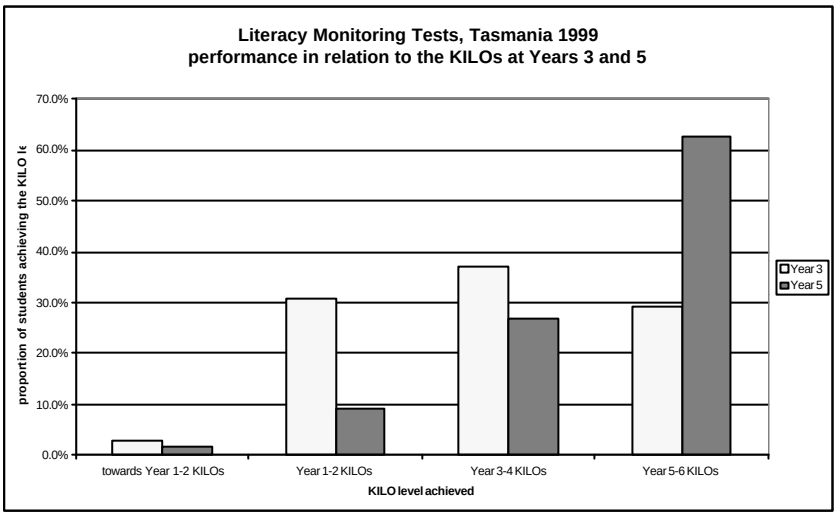
According to ACER it is likely that differences in number of years of formal schooling (rather than age itself) would have contributed to differing achievement results. Thus it is not necessarily valid to expect the Tasmanian result to be as high as that in say Queensland where students had on average an extra 0.25 years of full-time schooling. In addition the staging of academic content probably contributed to differing achievement results. At the time of TIMSS in 1994, students in Western Australia and Queensland did not have a preparatory year but went straight into Year 1 with a more structured academic emphasis on their curriculum.

Summary

The steady decline in reading performance from 1976 to 1993 signalled the need for immediate intervention in the early 1990s and the most recent literacy results from the *Statewide Monitoring Program* may indicate that strategies implemented since 1993 have been effective.

Update by DoE of the Statewide Monitoring Results for 1999

The Assessment Research Centre (The University of Melbourne) forwarded the complete databases of the results for the 1999 grades 3 and 5 literacy monitoring program in the third week of December 1999. Although these results have not as yet been analysed in detail, the following statements can be made about aspects of student performance. The attached graph presents information about students' overall literacy performance on the 1999 tests.



Source DoE: Literacy Monitoring Results Years 3 and 5 for 1999

Grade 3

Overall literacy results, as assessed against the KILOs and based on students' performance in the 1999 test, indicate that 66% of year 3 students has achieved the Year 3-4 KILOs or above, 31% had achieved Year 1-2 KILOs and 3% of the cohort had not reached that level of performance. It is interesting to consider this outcome in relation to the performance of Year 3 students in the 1998 statewide testing program. In that year, 64% of Year 3 students had achieved Year 3-4 KILOs or above , 29% had achieved Year 1-2 KILOs and 7% of the cohort had not achieved level of performance.

Based on the scores on common items (questions that were asked in both 1998 and 1999), reading performance (as distinct from overall literacy performance) appears to have remained relatively stable, with no marked improvement or decline from 1998 to 1999. This result is further confirmed by preliminary analyses of the performances of students with resect to the nationally comparable reading benchmark. The proportion of students achieving above the national benchmark in 1999 was almost identical to that for 1998.

Grade 5

Overall literacy results as assessed against the KILOs and based on students' performance in the 1999 test, indicate that almost 90% of the students has achieved the Year 3-4 KILOs or above.

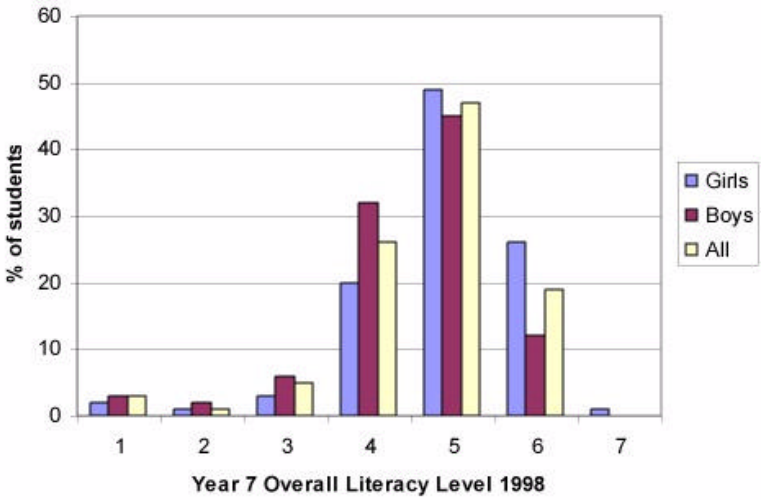
The Year 5 national benchmark cut score for reading has been determined, but the necessary statistical procedures have not yet been carried out by a consultant. When this procedure has been completed, it will be possible for the cut score to be located on Tasmania's reading scale, and the proportion of students achieving the benchmark will be calculated.

End of DoE Update

TEST OUTCOMES SECONDARY SECTOR

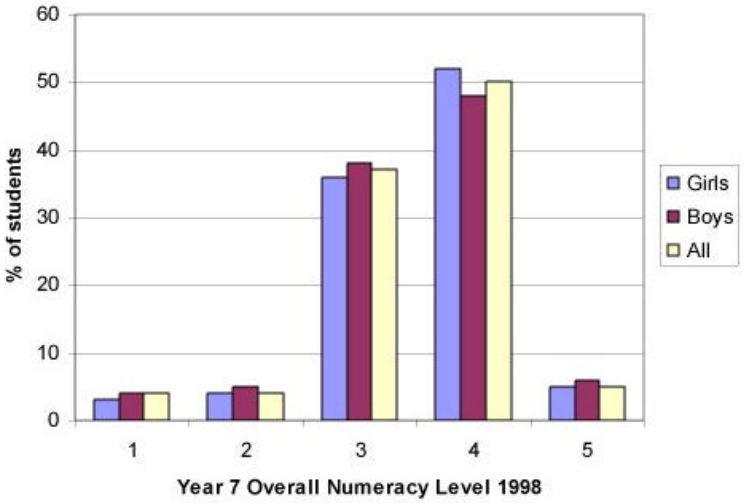
Statewide Monitoring Program 1998

State outcomes for the Year 7 cohort as measured in July 1998, were represented on the Internet as a distribution of clustered column charts for each of the KILOs and KINOs outcome levels as shown in Figures 3a and 3b.



1. Insufficient information available to determine KILO level.
2. Has achieved the Kinder Prep KILOs.
3. Has achieved Years 1-2 KILOs.
4. Has achieved Years 3-4 KILOs.
5. Has achieved Years 5-6 KILOs.
6. Has achieved Years 7-8 KILOs.
7. Is working well beyond the Years 7-8 KILOs level.

Figure 3a:Year 3 Overall Literacy Level Statewide Monitoring Program 1998



1. Not enough information to form a description of this student's work.
2. This student is working towards Year 3-5 KINOs.
3. This student has achieved Year 3-5 KINOs.
4. This student is working towards Year 6-8 KINOs.
5. This student has achieved Year 6-8 KINOs.

Figure 3b: Year 7 Overall Numeracy Statewide Monitoring Program 1998

Caveats of interpretation discussed previously for the Year 3 cohort also apply to this section. Outcomes representing performance below an appropriate level for the Year 7 cohort are displayed in Table 3.

Table 3: Percentage of Year 7 Cohort Performing at or Below Appropriate Grade Level in Numeracy and Literacy.

Statewide Monitoring Program	**Year 7 Girls**	**Year 7 Boys**
Literacy	24%<=Year 3-4 KILOs (portion could be working towards Year 5-6 KILOs)	40%<=Year 3-4 KILOs (portion could be working towards Year 5-6 KILOs)
Numeracy	40%<=Year 3-5 KINOs	43%<=Year 3-5 KINOs

In literacy 24% of girls and 40% of boys in the Year 7 cohort, were operating at or below Year 3-4 KILOs. A portion could have been working towards Year 5-6 KILOs but this is not quantified. Expressed in other terms these students had not achieved Year 5-6 KILOs and could not be considered to be working towards Year 7-8 KILOs. Further in numeracy, 40% of girls and 43% of boys in the Year 7 cohort were operating at or below Year 5 KINOs and these students could also not be considered to be working towards Year 8 KINOs.

Similar effects for the Year 7 cohort as for the Year 3 cohort were found from the multi-level modelling analysis conducted at the University of Melbourne. These included the greater significance on the variance of inattentiveness in reading, writing and number scores over the 'intake' variables, the strong correlation between literacy and numeracy when computed as composite variables and the underpinning of literacy achievement by the development of competence in reading.

As for the Year 3 cohort, localised outcomes for the Year 7 cohort in literacy and numeracy have also been published according to 'like school' and district results. These are provided in Appendix G.

While the proportion of students performing at the higher and lower levels in both literacy and numeracy was greater for schools with lower ENIs there were nevertheless a significant number of students within the Year 7 cohort that were performing below an appropriate level. Further in each case the Hartz and the Derwent Districts had the greater percentage of students performing at the higher and lower levels respectively.

Year 9 Numeracy Assessment and Monitoring Program 1978 to 1997

The State results for performance of the Year 9 cohort in numeracy overall are displayed in Figure 4.

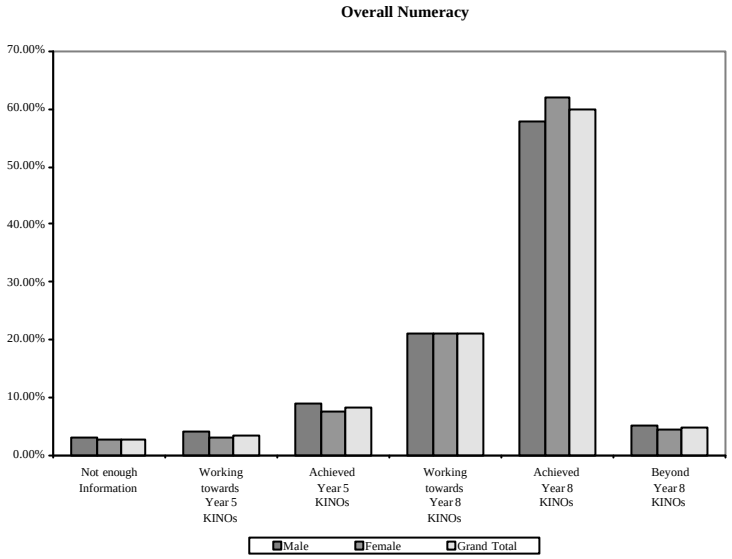


Figure 4: Year 9 Overall Numeracy Statewide Monitoring Program 1997

It was found that 32% of Year 9 students had not achieved Year 6-8 KINOs and 12% had not achieved beyond Year 3-5 KINOs. There appeared to be little difference across the strands and the patterns of achievements were very similar with small differences in outcomes for males and females in most instances. Indigenous students were, however, greatly over-represented in the lower levels of achievement with 50% not having achieved Year 8 KINOs and approximately 17% operating at or below the Year 5 KINOs.

A chart of performance over the years 1978 to 1997 is displayed in Figure 5. Results from the 1997 test were linked to the previous 14N tests (conducted since 1978) by a separate process involving about 400 14-year old students in late September 1997 (the time of year when the 14N test was administered). These students each completed a 14N test and one component of the year 9 program. This allowed the previous 14N tests to be linked through 'common item linking', and then linked to the 1997 test through 'common person linking' eliminating discrepancies due to the different age composition of the Year 9 cohort.

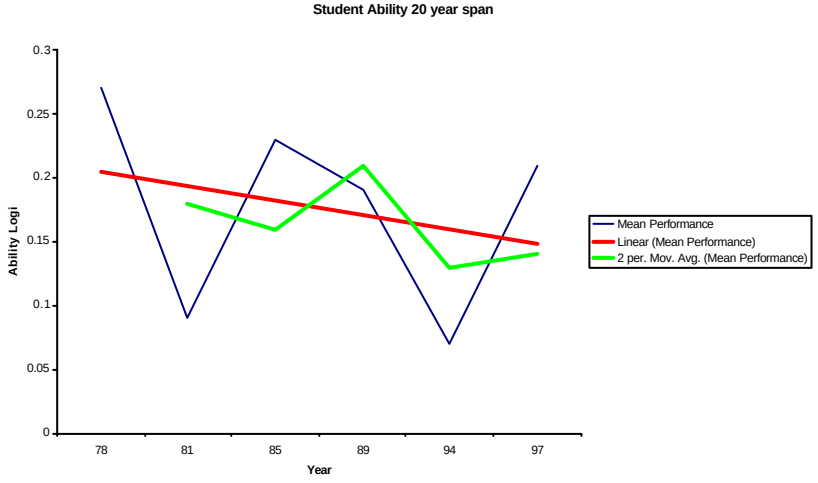


Figure 5: Change in Student Performance Over a 20-Year Span

While the trend line gives the impression of a slightly falling level particularly from 1978 to 1997, according to the report the size of the fall is not significant and the turn around in 1997 shows that performance levels are now rising. The report also states that this improved performance in 1997 over 1994 of around 3% is statistically significant and this suggests that efforts to address the drop have been successful.

The report presented results for districts in chart form according to the percentage above or below Year 8 KINOs. The Hartz district had the least percentage of students operating below this benchmark (24.66%) and the Derwent district had the greatest (49.12%). The differences may be said to largely reflect the socioeconomic backgrounds of the different districts. Additional analyses carried out have indicated, however, that districts accounted for less than 1% of the variance and therefore students are not considered likely to be advantaged or disadvantaged by being in one district rather than another.

School results were also analysed in terms of their ENIs. Schools within the lowest ENI range had 22% of students operating below Year 8 KINOs while those within the highest ENI range had 66% of students operating below this level. These results agree with those of the *Statewide Monitoring Program* in which schools with higher educational needs indices were found to have a greater proportion of students performing at the lower levels.

Third International Mathematics and Science Study 1996

An inter-state comparison of the mean mathematics scores, together with standard errors on the Third International Mathematics and Science Study (TIMSS) is shown in Table 4. Average ages ranged from 13.5 to 14.3 years.

Table 4: TIMMS Study 1996 – Mathematics Achievement by State for Students within Average Age Range of 13.5 to 14.3 Years

Table 4 Mathematics Achievement by State, Population 2

State	Best estimate of mean score	Best estimate of average age	WA	ACT	SA	QLD	NT	NSW	VIC	TAS
WA	546 ± 8	14.0 ± .01		•	•	•	•	**D**	**D**	**D**
ACT	546 ± 10	13.6 ± .02	•		•	•	•	**D**	**D**	**D**
SA	536 ± 6	14.3 ± .02	•	•		•	•	**D**	**D**	**D**
QLD	529 ± 8	14.0 ± .02	•	•	•		•	•	**D**	**D**
NT	510 ± 18	14.0 ± .20	•	•	•	•		•	•	•
NSW	509 ± 8	13.5 ± .02	**Ñ**	**Ñ**	**Ñ**	•	•		•	**D**
VIC	492 ± 6	13.5 ± .02	**Ñ**	**Ñ**	**Ñ**	**Ñ**	•	•		•
TAS	484 ± 11	13.5 ± .04	**Ñ**	**Ñ**	**Ñ**	**Ñ**	•	**Ñ**	•	

Instructions: Read across the row to compare a State's or Territory's performance with the performance of each State/Territory listed in the column headings.

- • No statistically significant difference from comparison State
- **D** Mean achievement significantly higher than comparison State
- **Ñ** Mean achievement significantly lower than comparison State

Comparisons of the results by taking into account the 'design effect' due to sampling students by classes within schools showed that the five highest scoring States and Territories (WA, ACT, SA, QLD and NT) all performed significantly better than the other three states (NSW, VIC, and TAS). Similar caveats to those set out for the TIMSS study results of the primary sector apply. In particular, Tasmanian students generally had less full-time schooling than most of the higher performing States and Territiories.

TASSAB Results 1990 to 1998

At the upper (Years 9-10) and senior secondary levels (Years 11-12), students are assessed by the Tasmanian Secondary Assessment Board (TASSAB) under the Tasmanian Certificate of Education (TCE) from 1990 to 1998. Accredited courses in literacy and numeracy per se have not been devised for the TCE.

The relationship between literacy and English however is explored on the DoE website: http://www.ec.tased.edu.au/las/english/liteng.htm (22 November 1999). There it is stated that:

> The explicit focus of the English curriculum on text and language contributes importantly to all aspects of students' literacy education.
>
> English teachers have special responsibility for teaching students to use and understand a defined range of texts and for teaching the skills of speaking, listening, reading, viewing, writing and spelling in a range of contexts. In other learning areas, students learn literacy skills associated with different contexts.

The relationship between numeracy and Mathematics is explored in the DoE publication *Numerate Students – Numerate Adults*. This document states that:

> ...it is in the mathematics classes of both primary and secondary schools that students get their grounding in what it takes to become numerate. There it is generally understood, they will acquire the necessary knowledge, understanding and skills.
>
> Teachers of mathematics, however, do not have sole responsibility for their students' developing numeracy: teachers in other learning areas share this responsibility with them.

It is on this basis that English and Mathematics can be considered to play an important role in fostering literacy and numeracy skills at the secondary level, and therefore an examination of performance in these subjects is considered relevant. In particular Audit considered that there was value in identifying the proportion of students that enrolled in the subjects of English and Mathematics but which did not gain an award at the end of Year 12. While the data would need to be analysed to exclude students that left the courses part way through the year for reasons other than inability to cope with the syllabuses (eg to enter the workforce or divert to TAFE), it would prima facie be reasonable to view failure to attain any award by a substantial proportion of the remaining group with concern. It is however understood that such students could at the same time be capable of functioning adequately in literacy and numeracy.

While the Tasmanian Secondary Assessment Board (TASSAB) collects enrolment data in English and Mathematics syllabuses for Year 11 and 12 at the end of term 2, it has stressed that this data should be regarded as indicative rather than definitive. This is so because TASSAB is not mandated to keep enrolment information and does so only for the purpose of certification rather than for the purpose of research. The initial enrolment information is also only available in paper form since the initial electronic data is progressively overwritten as new enrolment information is collected. TASSAB enrolment data is therefore not suited for the determination of baseline figures from which a decline in enrolments throughout the school year can be accurately identified.

Further the use of the School Administrative Computing System (SACS) and the School Achievement Module (SAM) is not mandated by DoE for the purpose of collecting initial enrolment data at the subject level. It is understood that out of a total of 32 high schools, 27 district high schools and 8 colleges only 11 high schools, 2 district high schools and 2 colleges were planning to provide student results through SAM to TASSAB during 1999. Also owing to the lack of standardisation of the nomenclature of subjects and subjects classes, the ability of the current system to produce accurate and reliable enrolment data at the subject level is considered to be inadequate. Although the facility exists for initial enrolment data to be collected it was not able to be provided in a reliable form at the time of the audit and therefore the proposed line of inquiry was unable to be followed for conclusive findings to be drawn.

While DoE maintains that accurate enrolment data by subjects has not been able to be provided, it has nonetheless included the percentages of Year 12 students attaining awards in English and Mathematic in a comparative summary of targets for Indigenous students. The percentages of non-Indigenous students not attaining an award for 1997 and 1998 provided in his study are displayed in Table 5.

Table 5: Percentages of non-Indigenous Year 12 Students Who Took a Course in Mathematics or English But Who Did Not Gain an Award

	1997	1998
Percentage of non - Indigenous Students Who Took a Year 12 English Course But Who Did Not Gain an Award	83.4%	58.4%
Percentage of non - Indigenous Students Who Took a Year 12 Mathematics Course But Who Did Not Gain an Award	65.4%	71%

In each case it would appear that more than half of the Year 12 cohort enrolled in English and Mathematics did not gain an award. These figures require urgent verification by DoE through systematic collection of enrolment information because when adjusted for valid reasons of non-completion, immediate intensive intervention may be required.

Recommendation

The systematic collection of initial accurate enrolment data at the subject level is necessary if the number of students not completing English and Mathematics syllabuses is to be monitored. In order to facilitate this process, DoE should ensure that initial enrolment data and information on reasons for withdrawal are methodically collected through an appropriate central avenue.

Fail results are also not systematically collected by TASSAB due to the mandated requirement for TASSAB to only report on endpoint achievement. It was therefore not possible to accurately identify the proportion of enrolled students that did not meet the requirements of the English and Mathematics syllabuses at the upper and senior secondary levels. The 'NN' result used by teachers to indicate that a student was either not assessed or that they showed no evidence of attainment is not classified as an assessment but rather is considered to represent the lack of ability to make an assessment.

Recommendation

Collation of statistics on failure to make an assessment is necessary for the identification of the number of students not meeting the requirements of English and Mathematics syllabuses. DoE should systematically collect fail data through an appropriate central avenue in order to facilitate the monitoring of syllabus failure.

TASSAB has reported in draft form on variations in award patterns under the TCE (an award being either an Outstanding Achievement - OA, High Achievement - HA or Satisfactory Achievement - SA but not an NN). It appeared that there was no evidence of a systematic variation in the level of awards in the 'core' subjects Mathematics and English for Year 10 students. For Year 11 and 12 students however it was noted that subjects which were deemed harder, including the pre-tertiary English and Mathematics subjects, had suffered a relative decline in patronage when compared to most other subjects. TASSAB therefore determined that students were considered to be choosing subjects which were more able to provide a better award and hence score for tertiary entrance purposes and to this end large groups of students had been avoiding, these subjects whenever possible.

Report on the Post Compulsory Education and Training of Tasmania's Youth

The report by the Office of Vocational Education and Training (OVET) in October 1998 provides a comprehensive set of data on Tasmania's performance with respect to participation and outcomes in secondary and senior-secondary education, vocational education (VET) and higher education. Retention, participation and characteristics related to school completion are described in quantitative terms for each of these forms of post-compulsory sectors.

The report also discussed results of the *Pathways from Year 10* project which involved examination of the pathways of the 1995 Year 10 cohort to further education based upon Year 10 average Maths/English scores out of 24. In 1996 the group with the highest score (68%) transferred to Year 11 (18.7 average score); the group with the second highest score (23%) went to Technical and Further Education (TAFE); and the group which had the lowest score did not proceed to education (12.2 average). Gender was also found to be a differentiating feature with the retention of females to Year 11 being 72.4% while that for males was 63.1%. Retention from Year 10 directly to TAFE was higher for males though with 12.3% of males and 5.7% of females proceeding to this form of further education.

The report also found that there was a decline in the student hours spent in English and Mathematics from 1992 to 1998 for all but one senior secondary college. Further a most recent comparison of subject enrolments across Australia in the *Report on Government Service* showed that Tasmania had relatively fewer students studying English and Mathematics at Year 12.

Summary

Literacy and numeracy results of the *1998 Statewide Monitoring Program* for the Year 7 cohort and the *1997 Year 9 Numeracy Assessment and Monitoring Program* for the Year 9 cohort are especially disappointing and suggest the need for urgent action to remediate this situation.

EXTENT OF PUBLICITY

Statewide Monitoring Program 1998, Year 5 Reading Monitoring Program 1976 to 1996 and Year 9 Numeracy Assessment and Monitoring Program 1978 to 1997

The Office for Educational Review (OER) prepares reports on the aggregate outcomes of each monitoring program at the 'like-school', district, sector and state levels. Hard copies of these reports are made available to members of the profession and the public on request. Aggregate outcomes are also made available to members of the school community including students, parents, and teachers.

Senior Executive personnel determine other media by which outcomes may be published. For example for *Output Group1: Delivery of Education Services* the *1999-2000 Budget Paper No 2* includes the clustered column charts of overall student literacy and numeracy achievement for 1998. In addition the *Report on Government Services for 1999* displayed the results of the *Year 5 Reading Monitoring Program 1976 to 1996* in column chart form. Statewide, 'like-school', district and sex based results for 1998 are also available on DoE's Intranet which is accessible from the Internet. An analysis was initially provided for the sex-based results and more recently the findings of the multi-level analysis have been made available through the DoE website.

The Universal Resource Locators (URLs) for the overall statewide results are as follows:

Year 3 Literacy Results: http://info.tased.edu.au/oer/Monitoring/Mon1998/Year3Lresults.htm (29 September 1999).

Year 7 Literacy Results: http://info.tased.edu.au/oer/Monitoring/Mon1998/Year7Lresults.htm (29 September 1999).

Year 3 Numeracy Results: http://info.tased.edu.au/oer/Monitoring/Mon1998/Year3Nresults.htm (29 September 1999).

Year 7 Numeracy Results: http://info.tased.edu.au/oer/Monitoring/Mon1998/Year7Nresults.htm (29 September 1999).

School outcomes are provided through a package of school result sheets that are prepared by the Assessment Research Centre at the University of Melbourne. The package contains tabulated data summarising results for the school at strand and overall levels, summaries of state data, two sets of class lists and a key providing the maximum score for each of the literacy strands.

Aggregate school outcomes are provided to schools for comparison with 'like school', district and state results on a confidential basis. A comparative listing of school outcomes, however, is not published due to concerns within the teaching profession that 'league tables' may lead to invalid comparisons being made between schools. Nonetheless DoE does expect individual schools to publish their aggregated test outcomes in Partnership Agreements and Annual Reports.

Individual student outcomes are provided to schools through a 'report card' which includes the score obtained by the student, the maximum possible score that could have been obtained and the percentile (percentage of students in Tasmanian Government schools who obtained scores the same as that obtained by the student or below). A thick black bar on a continuum is also used to show the relative position of a score obtained by a student for a given strand with respect to the middle 50% of scores for students in Tasmanian Government Schools. Parents and students therefore have access to both individual results

and the context in which to consider how the individual has performed against the performance of his/her peers.

Currently, DoE expects that schools will distribute these reports to parents, but does not prescribe the process by which this is done. Some schools choose to undertake this at parent-teacher meetings, some include the results in the normal school reports and others forward the reports directly to the parents with an explanatory note. However according to DoE anecdotal evidence suggests that there have been instances where these reports have not been distributed to parents. DoE's Reporting to Parent Policy is currently being reviewed and a recommendation in the draft revision of the policy is that such reports must always be made available to parents.

Recommendation

The Audit Office endorses the recommendation in the draft revision of the Reporting to Parent Policy requiring all student reports from Statewide Monitoring tests to always be made available to parents.

National Benchmarking

Each state is to determine whether the 1998 National Benchmarking results are to be published and DoE has granted approval for the release of the Tasmanian provisional results. Until the 'cut score' (benchmark) for the 1999 National Benchmarks is finalised, it will not be possible to provide the results for this year. The process is to be completed for Year 3 early in the Year 2000 and when finalised, a report on aggregate performance will be provided to the editor of the *National Report on Schooling in Australia*. This information will also be released publicly through the Minister's Office and then published on the Department's website.

Following appropriate consultation with school communities early next year a decision will be made about the provision of individual schools and students with their benchmark performance.

TASSAB Results 1990 to 1998

Each year TASSAB advises secondary schools of the earliest date in December on which they can release the final TCE awards of Year 10 students. The schools then decide how and when general achievements are reported to parents and others. Advice on Year 12 performance is provided directly to the individual students. Aggregate data only are provided to other media.

Report on the Post-Compulsory Education and Training of Tasmania's Youth

As stated previously comprehensive quantitative data is provided in this report on the retention, participation and characteristics of school completion of Tasmanian students in the secondary sector. Literacy and numeracy achievement has been found to be a deciding factor in retention to post-compulsory education. The report is available on DoE's website at the URL: http://www.ovet.tas.gov.au/pub_res/History/poco/index.htm (5 November 1999).

Summary

Aggregate outcomes at the district, sector and state levels are able to be readily accessed by the public from either the Internet or on request from DoE. Individual student outcomes for the *Statewide Monitoring Program* are also made available to schools in the form of

'report cards' for students and parents. The means by which these results are disseminated is determined by schools and further consultation with the school community is required to determine whether this arrangement adequately meets student and parental requirements.

BELOW-TARGETED PERFORMANCE

Systemic goals or target outcomes had not been set by DoE for non-Indigenous students prior to the drafting of the *Literacy and Numeracy Plan 2000 to 2002*. Instead reliance was placed on measures of statistical significance to determine whether a program had achieved a material effect. This was the case as there was insufficient baseline assessment data from which to establish valid standards and the use of student outcome data to inform planning was a relatively new component of school culture in Tasmania. In addition DoE was aware that national literacy and numeracy benchmarks were being developed and it seemed prudent to wait until these were established before setting targets.

For the purpose of this report, below-targeted performance has therefore been identified and analysed according to the attainment of specified levels as measured by the *Statewide Monitoring Program* and the statistical significance of declines in performance as measured by the longitudinal assessment programs. The relative performance of gender and socioeconomic subgroups as measured by various monitoring programs has also been examined.

Although systemic target outcomes have not been set for non-Indigenous students, they have been set for Indigenous students since 1997, for a range of monitoring programs including the *Statewide Monitoring Program* and the TCE results for English and Mathematics syllabuses. Attainment with respect to these targets has been monitored by OER and the Aboriginal Education Unit.

Below Targeted Performance in Literacy

A comparison of the results of the 1998 *Statewide Monitoring Program* given in Tables 1 and 3, reveals that a significantly greater portion of the Year 7 cohort (24% of girls and 43% of boys) are operating below an appropriate level in literacy compared to the Year 3 cohort (4% of girls and 6% of boys). DoE has indicated that it would expect the range of performance to increase from Year 3 to 7 in any given strand (based on research evidence that the range of achievement levels ordinarily increase with year level), but not necessarily to the extent suggested by the reported KILO and KINO performances in the 1998 testing program results.

Two possible reasons have been provided for this disparity. Firstly the application of additional resources and literacy and numeracy programs in the early childhood years of schooling since the early 1990s could have contributed to the better performance of Year 3 students, and secondly DoE is in the preliminary stages of matching KILOs and KINOs to the performances of students in the secondary sector, as measured by external tests.

Notwithstanding queries about the appropriateness of the KILOs for the Year 7 level, these results appear to represent cause for concern. Further support for this proposition could be seen in the statistically significant downturn in performance found by the *Year 5 Statewide Literacy Monitoring Program from 1976 to 1996.* During this period these students received their primary education and the results of the Year 7 cohort may therefore correspond to the legacy of this downturn.

While DoE has acknowledged that it is not possible to give a definitive explanation for this decline in literacy performance, it has suggested a number of factors that could have contributed. These are as follows:

- Increasing curricula demands probably reduced the amount of engaged learning time that was devoted to literacy;

- The reduction in the overall resource level to schools resulted in more competition for the resource dollar in schools;
- The teaching philosophy and practice in the State during the downturn was heavily influenced by the 'whole language' approach. This approach emphasised the natural development of literacy skills in a supportive facilitative environment and de-emphasised the explicit teaching of literacy skills in isolation;
- During these years teachers did not have any clear understanding of the level of achievement or the sequence of skill development that should be expected by students at various year levels; and
- During the period there was not a school culture of assessment data to inform program development in schools.

The publication *Learning to Read and Write* (DoE, May 1993) also describes the student, home, teacher and school variables that can influence children's achievement in reading and writing. Variables discussed include disabilities, the amount of direct or indirect parental involvement in reading and writing development, the financial and material resources available to schools, classroom organisation, the nature of the school environment and the extent to which it is supportive. Aspects of classroom organisation such as the grouping of students according to age and ability as well as the setting of class sizes and the time allocated for learning, have also been investigated in four separate papers published by DoE: *Should We Group Students According to Their Ability?, Should We Group Students According to Their Age?, The Importance of Class Size* and *Is There Time to Learn*.

Socioeconomic status has also been established as having a significant influence on performance in literacy and numeracy. Examination of the 'like school' results produced by the *Statewide Monitoring Program* for 1998 indicated that schools with higher ENIs have a higher proportion of students performing at the lower levels than do schools with lower ENIs. Further in all cases the Hartz and the Derwent Districts had the greater percentage of students performing at the higher and lower levels respectively. Key findings of the NSELS survey in relation to the cause of lower levels of literacy achievement by students from lower SES backgrounds were as follows:

> Children from upper professional or managerial occupations have significantly higher average levels of literacy achievement than children of parents from clerical and skilled manual occupations, who in turn have higher average levels of literacy achievement than children of parents from unskilled, manual operations. The differences between the literacy achievements of children from the highest and lowest occupational categories do not decline between Year 3 and Year 5 (p20).
>
> The difference between boys' and girls' levels of achievement are greater among children from unskilled and manual occupations than among children from other socio-economic groups (p20).

The relatively large number of students performing at the lower levels within schools of lower ENIs also represents cause for concern. The suitability of this index as the basis for funding allocation to disadvantaged schools is discussed in the section on Departmental Action.

At the upper and senior secondary levels it has been established in the report *Post-Compulsory Education and Training of Tasmania's Youth* (DoE, October 1998) that there is a correlation between performance in literacy and numeracy and retention levels to the post-compulsory education sectors. Post-compulsory sectors include the college or school sector (Years 11 and 12), the vocational education and training sector (Technical and Further Education-TAFE) and higher education (university).

> Regardless of the complex inter-relationships between variables it is clear that an individual's literacy skill is a significant indicator of a young person's post compulsory education, training and employment success. It has been established literacy is a very strong predictor of post-compulsory success, even when measured very early in a student's schooling. Chapter 4 School Sector (p1).

The report has also noted that the Tasmanian retention statistics fall well below the Finn Targets for participation in post-compulsory education for 19-year-olds (see Appendix H for more detail) and it appears that the major loss for the education system in Tasmania is at the Year 10/11 transition. Further the 23% of the cohort 'not in education' in the year following year 10 for the Pathways project was also noted as being of concern.

The follow-up report *Post-Compulsory Education in Tasmania* (DoE, August 1999) has summarised retention statistics also detailed in Appendix H as follows:

> Tasmania has the lowest retention to year 12, the lowest participation in higher education and the second lowest participation in TAFE of any State. It also has the highest level of youth unemployment (p2).

In terms of localised statistics on retention the report states that:

> ... there are significant regional variations in demography, retention and participation throughout the State. For example, retention from Year 10 to Year 11 in the government school sector is highest in the south of the State and lowest in the north. Participation in higher education shows similar regional differences, being highest in the south and lowest in the north-west (p3).

In relation to these statements DoE has noted that in interpreting retention rates it is inappropriate to compare Tasmania with states like New South Wales and Victoria which are predominantly urban. Rather it is considered more appropriate to compare retention statistics for Tasmania with those of parts of regional Australia.

The students to whom these retention statistics stated above apply also attended primary school during the period of decline in literacy performance from 1976 to 1993 and therefore these results could be attributed to the causes previously outlined. Given the explicit nature of subjects at the secondary level, another possible contributing factor to under performance in literacy could be the level of specialised training in English undergone by teachers.

According to a report on a *Survey of Tasmanian Secondary Teachers of English in 1998,* a joint investigation was undertaken by DoE and the Tasmanian Association for the Teaching of English in order to inform systemic planning with regard to leadership, curriculum and professional development and teacher recruitment within the learning area of English. It is important to note when interpreting statistics on the qualifications of teachers that while this is an important issue it is by no means the only variable in the quality of teaching.

A statement from DoE regarding the integrity of the survey maintained that the survey was conducted by two members of the Tasmanian Association for the Teachers of English on behalf of that Association, and that respondents included teachers from the Independent Schools. Concerns DoE might hold about the integrity of the data are therefore twofold:

- The information was collected by English teachers on behalf of English teachers and not by an independent body; and
- The report of the findings presented to the State Literacy Coordinating Committee in February 1999 did not include a description of the methodology of the conduct of the survey or a copy of the survey instrument. Several members of the Committee therefore expressed reservations about the interpretations of some of the findings.

DoE has noted however that the data from the survey was found to be of interest, particularly the aggregated responses to those questions in the 1998 survey that had been included in the earlier surveys of 1994 to 1996. Despite DoEs reservations about the integrity of the survey methodology, findings of apparent relevance to the teaching of English have been included for consideration.

According to the report, the survey found that 21%, 39% and 16% of high school, district high school and college teachers respectively had 'zero specialisation' or non-attainment of a major or sub-major at tertiary level in English. In regard to the high school and district high school level the report states that:

> ... some 2782 Tasmanian high school students were being taught by teachers untrained in the subject (p5).

Although DoE has claimed that the 'zero specialisation' of these teachers cannot be equated with a lack of abilities to teach English and data is not available on the specific effect on the quality of English teaching, the report stated that:

> It is of concern that so many teachers are teaching English with no specialisation in the subject. Effective English teaching requires specialist knowledge and skill. Without a sound understanding of the subject knowledge of English: texts, theories, discourse and valued pedagogies of the English learning area, non-specialist teachers find it very difficult to adapt the ideas and requirements of current English curriculum requirements (p5).

Departmental action to address the skill level of English teachers has been discussed in the section *Departmental Action: Upskilling of Teachers*.

Recommendation

The extent to which effective English teaching requires specialist knowledge and skill should be ascertained by DoE through research on the collective quality of teaching delivered to secondary students in English by teachers with zero specialization in this subject area.

Below-Targeted Performance in Numeracy

The Year 7 results of the *Statewide Monitoring Program* of 1998 given in Table 3 indicate that a similar percentage of boys are performing below an appropriate level in numeracy, (43%), as in literacy, (40%). For girls the percentage is higher in numeracy, (40%), than in literacy, (24%), suggesting that below targeted performance in this case could not be attributed to gender differences alone. At the secondary level in 1997 it was found as a result of the Year 9 Numeracy Assessment and Monitoring Program, that 32% of Year 9 students had not achieved Year 8 KINOs and 12% had not achieved beyond Year 5 KINOs. While there were very small differences in outcomes for boys and girls, overall the boys tended to be over-represented at the extremes. Further despite apparent gains in numeracy performance from 1994 to 1997 as indicated by the longitudinal chart of performance for this program given in Figure 13, the 1996 TIMSS study of mathematics suggests that on a national scale, Tasmanian students performed at a lower level than other states.

According to DoE the contributing factors to below targeted performance in numeracy are the same as those for literacy. Less explicit teaching practices based upon a philosophical view that students learn through experience was the widely adopted pedagogy prior to 1996 and this is considered to have impacted on performance in numeracy as well.

A study of *Mathematics Teachers and Teaching in Tasmania* was conducted in 1996 by DoE following significant decreases in the performance in numeracy of 10 and 14 year-old students. Additional anecdotal evidence at the time suggested that many teachers were

uncomfortable with mathematics, that numeracy was far from recognised as a cross-curriculum responsibility in the same way as literacy, and that many teachers in high schools were being asked to take a class of mathematics with little background in the subject. Information collected about mathematics teachers and practices as a result of the study was to be used to inform future policy development and the allocation of resources.

It can be deduced from the report that 45% of high school and 30% of college mathematics teachers surveyed had not studied mathematics as part of a degree to sub-major level. Although others do have tertiary studies in the subject area the report has noted that of the 155 high school teachers that responded, 21 or 14% teaching up until Year 10 level indicated that their formal mathematics study ended in Year 10 or at matriculation level. Many of these lesser qualified teachers take fewer classes of mathematics and they also usually take those mathematics subjects requiring greater competency in numeracy, rather than the more abstract disciplines such as algebra. According to the report therefore it seems likely that a number of lower ability students go through school never having been taught by a specialist Mathematics teacher.

Although no quantitative assessment of the effect of these figures is available, DoE has acknowledged that schools have a responsibility to provide all students with a range of learning experiences, delivered by suitability qualified teachers of mathematics. Several reasons have also been provided by DoE for the figures quoted above. These are as follows:

- As a result of the 1992 CRESAP review of staffing levels in DoE, a number of teachers were offered and accepted redundancies. The redundancies impacted in the mathematics/science teaching area;
- Independent schools (either to cover retirement of teachers or to cope with increased numbers of students) have selectively recruited mathematics/science teachers from the Government system; and
- For at least the last 10 years teaching has not been seen as an attractive option for Mathematics/Science graduates. Numbers of mathematics/science graduates from the University of Tasmania have also declined. Shortages of teachers in these subjects is not just specific to Tasmania but is an Australian phenomenon.

Departmental action to increase the number of Mathematics teachers has been discussed in the section *Departmental Action: Upskilling of Teachers*.

Recommendation

The extent to which effective Mathematics teaching requires specialist knowledge and skill should be ascertained by DoE through research on the collective quality of teaching delivered to secondary students in Mathematics by teachers who had not studied mathematics as part of a degree to sub-major level.

The report of the survey results has also noted that in more than half of the 43 primary and 20 high schools surveyed the teacher responsible for mathematics was an Advanced Skill Teacher Level 1 (AST1) or non-promoted. This finding has implications for the promotion of mathematics and especially numeracy in schools.

Other figures borne out by the TIMSS study of 1994, related to factors such as streaming and time spent on mathematics have also been considered in the report. At the time of this study, results indicated that about 40% of Australian students in lower secondary school were streamed for mathematics while in Tasmania between 2% and 6% were streamed depending on the grade being considered. While no definitive results were available from

the study, early indications were that students from schools that were largely streamed performed significantly better than those from schools that were unstreamed.

Further results of the TIMSS study indicated that the most common amount of time spent on mathematics in Australian schools was between 221 and 240 minutes per week. In contrast it was found that participating Tasmanian schools spent on average 175 minutes per week on mathematics. In the TIMSS survey only 14% of schools spent less than 180 minutes per week on mathematics. As noted in the section *Departmental Action: Literacy and Numeracy Policies,* the numeracy policy of 1997 has required that a minimum of 200 minutes per week was to be spent on Mathematics.

Recommendation

Factors influencing the achievement of students in numeracy such as the streaming of mathematics classes and the amount of contact time spent on mathematics per week as well as any other identified causes should be further investigated.

Boys vs Girls

Girls outperformed boys in literacy and numeracy for each of the systemic monitoring programs examined. From the summarised results for the 1998 *Statewide Monitoring Program* given in Tables 1 and 2, it can be seen that girls outperformed boys on all counts except for the Year 3 cohort in numeracy where there was only 1% difference in the percentage of girls and boys operating bebw the Year 2 KILOs. The largest discrepancy occurred in the relative performance of the Year 7 cohort in literacy where 40% of boys were operating at or below the Year 3-4 KILOs, while a lesser proportion of girls, 24%, were operating at or below this level. In addition provisional subgroup results for national benchmarking of the Year 3 cohort in reading showed that 19% of boys and 12% of girls were operating below the benchmark.

At the secondary level, results for boys and girls were more closely matched for the Year 9 Numeracy Assessment and Monitoring Program with boys generally over-represented at the extremes. Gender was found to be a differentiating feature in retention from Year 10 to Year 11 with the retention of females to Year 11 being 72.4% compared with 63.1% for males.

The under-performance of boys relative to girls is not unique to Tasmania and a main finding of the NSELS survey stated that:

> In each aspect of literacy – writing, reading, viewing, speaking, and listening – girls outperform boys. The average gender difference is greatest in writing and least in viewing. There is no significant reduction of the gender difference between Year 3 and Year 5 (p 20).

Literature to date that explores and identifies the cause of under-performance of boys is inconclusive and research related to gender and literacy is contingent upon particular ideological perspectives. Socio-cultural researchers tend to the view that differences in literacy performance between boys and girls are due to constructions of gender, and that educational programs should focus on 'deconstructing' gender performances while other researchers see literacy skill acquisition as equally problematic for boys and girls.

Indigenous vs Non-Indigenous

Target outcomes have been set for the performance of Indigenous students relative to non-Indigenous students for each year from 1997 to 2000. The designated targets for a subset

of monitoring programs, namely the Years 3 and 7 *Statewide Monitoring Program* and are listed in Appendix I.

There was a difference in performance of 30 and 26 percentage points between Indigenous and non-Indigenous students for reading and writing respectively in 1997 at Year 3 level. Targets had not been established for the numeracy component of the *Statewide Monitoring Program* for 1997 to 1999. However Indigenous students outperformed non-Indigenous students in Year 12 with 8.7% and 23.4% more Indigenous students obtaining an award in English and Mathematics courses respectively. These figures should be interpreted with some caution because as stated in the section *Test Outcomes Primary Sector*, the total initial enrolment data and fail data at the subject level are not currently able to be accurately verified.

Attainment of the targets prescribed in Appendix I for Indigenous students is detailed in Table 6. Supporting evidence in the form of an official departmental report of findings was not provided and therefore the Audit Office is not able to substantiate these results. It would appear that of the targets for which results were provided, only that set for Year 12 Mathematics was not attained.

Table 6: 1998 Target Attainment for Indigenous Students

Indigenous Year Group	1998 Target	Evidence of Attainment	Attainment
Year 3 Reading	Reduce gap between Indigenous and non-Indigenous performance to 20 percentage points.	72% Indigenous students above benchmark[1] 85% Non-Indigenous above benchmark	Attained
Year 3 Writing	Reduce gap between Indigenous and non-Indigenous performance to 20 percentage points.	65% Indigenous students above benchmark 77% Non-Indigenous students above benchmark	Attained
Year 7 Reading	Establish base line data.	32% Indigenous students above benchmark 54% Non-Indigenous students above benchmark	Attained
Year 7 Writing	Establish base line data.	43.9% Indigenous students above benchmark 63% Non-Indigenous students above benchmark	Attained
Year 12 English	Achieve at least the same performance on average as non-Indigenous students.	45.8% Indigenous students gained an award 41.6% non-Indigenous students gained an award	Attained
Year 3 Numeracy	Establish baseline data and negotiate target for 1999.	89.2% Indigenous students above benchmark 95.4% Non-Indigenous students gained an award	Attained
Year 7 Numeracy	Establish baseline data and negotiate target for 1999.	36.9% Indigenous students above benchmark 55.4% Non-Indigenous students gained an award	Attained
Year 12 Mathematics	Achieve at least the same performance on average as non-Indigenous students.	19% Indigenous students gained an award 29% non-Indigenous students gained an award	Not Attained

Base line data has been determined by DoE according to the percentage of Indigenous students compared to non-Indigenous students, who are identified by education providers

[1] The use of the word 'benchmark' should not be confused with the national benchmarks. These are agreed state benchmarks for the purposes of the IESIP agreement.

as being educationally at risk on entry into Kindergarten. The figures are essentially similar with 23/276 or 8.33% and 446/5505 or 8.1% of Indigenous and non-Indigenous students respectively found to be at risk. In contrast the figures of Indigenous and non-Indigenous students who are identified as being at risk in Year 2 or on entry to primary school are markedly different. Baseline data indicate that 22/46 or 48% and 212/1038 or 20% of Indigenous and non-Indigenous students respectively were found to be at risk by Year 2. These results suggest that factors contributing to the increased level of educational risk for Indigenous students arise between Kindergarten and Year 2.

DoE Update

The Office for Educational Review (OER) has more recent findings to indicate that the difference between Kindergarten and Year 2 is not as great and that there is no real increase in the level of educational risk for Indigenous students between Kindergarten and Year 2.

End of DoE Update

The Aboriginal Education Unit has noted that Indigenous students have only been monitored since 1996 by OER. Developing accurate information on 3 years of analysis has been difficult given small numbers and changing measurement programs for some Aboriginal programs. OER is therefore now over-sampling the Indigenous student population to get more statistically relevant data and measurement of Indigenous student performance has become more sophisticated and suggests early data may not be very useful. The benchmark results were however obtained for the entire Indigenous cohort.

A comparison of percentages of Indigenous to non-Indigenous attendance in Kindergarten to Prep revealed that the average daily absences were 5.75% and 5.68% respectively. For Years 1 to 10 there was a 3.25 percentage point difference with average daily absence figures of 9.58% and 6.33% for Indigenous and non-Indigenous students respectively.

The Tasmanian results for Year 3 and Year 7 Indigenous students accord with the following key findings from the NSELS survey:

> Students in the Special Indigenous Sample (drawn from schools with at least five Indigenous students in each of Years 3 and 5) have very low average levels of English literacy achievement (3 to 4 Year levels below students in the main sample) (p 20).
>
> At both Year 3 and Year 5, there is a considerable difference between the literacy achievements of the lowest and highest achieving students in the Special Indigenous Sample. Students with the highest levels of literacy skill in Year 3 appear to make good progress between year 3 and Year 5, but there is consistent evidence across all aspects of literacy that students with very low levels of literacy skill in Year 3 make little or no progress over the following two years (p 21).

Concerning the level of absenteeism of Indigenous students, the NSELS survey found that:

> Students in the Special Indigenous Sample have relatively high rates of absence from school (average of 18 days per year compared with 6 days per year for all students), and this higher rate of absence appears to be a factor in the lower literacy achievements of these students (p 21).

The rate of absenteeism for Tasmanian Indigenous students does not appear to be as high as that quoted by the NSELS survey.

Summary

Below-targeted performance is evident at the secondary level and further investigation is required to ascertain the extent to which increased teacher specialisation and other possible causal factors should be addressed to improve literacy and numeracy achievement for this sector.

DEPARTMENTAL ACTION

Generic departmental actions examined include the *Literacy and Numeracy Plans for 1999 and 2000-2002*, the *Assisted School Self Review* (ASSR), the *Literacy and Numeracy Policies* and programs to up-skill teachers. Stakeholder consultation, completion of the performance management cycle and processes to identify students who are educationally at risk are significant determinants of the effectiveness of these actions and a review of these processes has also been conducted. Finally, specific actions including intervention programs and corresponding evaluations as well as actions to address the performance of targeted subgroups such as boys and Indigenous students have also been examined.

Literacy and Numeracy Plans

Systemic targets for 1999 were not specified by the *Literacy and Numeracy Plan 1999*. An emphasis was placed, however, on students who were at risk of failing to achieve appropriate outcomes as well as on students in the first three years of schooling. The trialing and implementation of programs that supported explicit literacy and numeracy teaching were also emphasised. Further, DoE has continued to focus on the development of literacy and numeracy programs for students from low socioeconomic backgrounds and subgroups such as Indigenous students considered to be at an educational disadvantage.

Ongoing systemic support in the form of Commonwealth Literacy Program funding totalling $2 367 033 for literacy and numeracy teaching was offered through the School Resource Support Package direct to schools. As there was considered to be a strong correlation between a school's ENI and results of system level testing of literacy and numeracy outcomes, this index was used as the basis for the allocation of funding.

The socioeconomic status (SES) component of the ENI as described in Appendix E was developed and calculated by the Commonwealth Government. The Commonwealth has however ceased to use this index and the last calculation (the one that is still used by DoE) is based on 1986 census data. DoE's failure to update the component of the ENI since it was first developed has raised questions regarding the relevance of this component of the index in the current context. Populations that schools service have changed considerably since the index was calculated and the relative variations that may have occurred since the index was created are seen by DoE as a major problem. It is proposed therefore that the method used to determine the ENI and its components be reviewed during the 2000 school year.

Recommendation

DoE's proposal to review the method used to determine the SES component of the Educational Needs Index should be implemented during the Year 2000.

The funding model adopted in Tasmania aims to provide support for disadvantaged schools with the highest educational need. Funding is therefore allocated to the schools with the higher ENIs where the cumulative enrolment is less than approximately 30% of the total student population for the State. The paper *Outcomes and Funding* (ACER, July 1999) has analysed the precision with which educational resources can be delivered to those students who most need them in terms of two concepts - accuracy and leakage.

> Accuracy refers to whether a school at a given value on an index contains students with the characteristics associated with educational disadvantage. Leakage refers to the extent to which additional funds go to students who would not be considered to be in need of those funds. Where students are relatively homogenous in their characteristics, and the differences between schools are large, an index would be likely to have a high level of accuracy and a low level of leakage. On the other hand,

> where there is a high level of heterogeneity in schools, accuracy would be low (because disadvantaged students would be spread over a large number of schools) and leakage would be high (p11).

The composition of Year 3 and 7 cohorts in terms of literacy and numeracy achievements as indicated in Appendices E and G is more heterogenous than homogenous. Thus a school with a low ENI may still have a high number of disadvantaged students compared to a small school with a high ENI and in this case the actual distribution of disadvantaged students is not adequately demonstrated by the index. Further, while socioeconomic disadvantage as measured at school level, and performance in literacy and numeracy are highly correlated, according to DoE the association is far from perfect. At school level, the correlation between the value for the school ENI and school mean literacy score is –0.46. The negative sign indicates that achievement is higher in schools where the ENI is lower, as expected, and the magnitude of the co-efficient indicates that the association is moderate but not perfect.

For these reasons DoE has acknowledged that the ENI is not well-suited as an indicator of disadvantage on which to base an allocative mechanism of funding. The ENI has continued to be used for this purpose nevertheless, because schools now expect the funding provided according to the index, and any change will require considerable consultation and probably sufficient lead in time so that preparation could be made for reductions to budgets. In addition there has been insufficient assessment data based on literacy and numeracy performance, as well as insufficient time to determine whether schools have shown improvements in their literacy and numeracy results in order to justify intervention on an outcomes basis.

Recommendation

Consideration should be given to the implementation of a funding model with higher accuracy and less leakage to address performance on the basis of educational need. The Audit Office understands that DoE is currently investigating the viability of other models and supports this action.

General support in the form of intervention programs and research for 'non-targeted groups' is detailed in the *Literacy and Numeracy Plan for 1999*. Allocations for programs and projects are summarised in Appendix J. The total allocation for general support is $8 161 650 of which $7 911 300, (97%), and $250 350, (3%), are made available to the primary and secondary sectors respectively.

Despite the below targeted performance in the 1998 *Statewide Monitoring Program* of the Year 7 cohort relative to the Year 3 cohort, DoE has maintained that the proportion of funds allocated to the secondary sector is justifiable in view of research evidence that intervention is more likely to be successful the earlier that it is undertaken. Although the proportion of the funds allocated to the secondary sector is not considered by DoE to be adequate, it is the result of a conscious decision to concentrate limited resources in the early years.

Nevertheless DoE has proposed that for the Year 2000, the schools-based initiatives will be focused upon secondary schools and the literacy interventions needed to support students who are failing reading, or who do not have the literacy skills to access the full secondary curriculum. The goals for these school-based initiatives are currently being negotiated and it is proposed that four high schools be requested to submit or tender to undertake research into 'foundational skills' literacy programs. The total funding to high schools through these processes in the year 2000 will be in the order of $350 000.

Factors considered significant by DoE for improved performance at the secondary level are complex, school site contingent and interwoven. They can be summarised as follows:

- The availability of teacher 'user friendly' programs to students at Years 7 and 8. This involves trials of a range of available programs, evaluation of their effectiveness, and or the development of a Tasmanian Foundational Literacy program for which some funding is available in 2000;
- Clearly set expected student outcomes in literacy and numeracy at secondary level. This involves refinement of the KILOs which is already funded for 2000;
- A process to develop moderated work samples associated with achievement of outcomes which is already funded for 2000; and more focus on the role of all secondary teachers as teachers of literacy and numeracy within their subject areas. This also involves a re-think of the core curriculum and the roles of the Professional Learning Services Branch;
- Professional development activities with a focus on practical, explicit teaching activities (rather than philosophical explorations) designed for students at risk of not achieving literacy and numeracy outcomes. This involves a re-think of the idea of 'curriculum' and of the roles of DoE branches like the Professional Learning Services Branch;
- Less focus on English and Mathematics teachers as literacy and numeracy teachers (though of course their role is important) and more focus on the role of all secondary teachers of literacy and numeracy within their subject area; and
- Research to determine how extra resources (if any) should be allocated. This is not considered to be the type of problem that will disappear by the provision of additional resources and indeed thoughtless funding could exacerbate the problems experienced by students at secondary level who have difficulty with reading and writing.

The implementation of more focussed interventions and explicit teaching at the secondary level is considered by DoE to likely have a positive effect on students' literacy and numeracy outcomes at Years 7 and 8. In NSW, the English Language and Literacy Assessment (ELLA) program has been linked to specific, explicit literacy teaching strategies for secondary students at risk of literacy failure. In WA, the 'First Steps' literacy program has been extended as 'Stepping Out', a literacy program for secondary students. These are two examples of explicit literacy programs developed for secondary students.

In Tasmania, under the *Literacy and Numeracy Plan for 1999*, small grants were offered to high schools and colleges to identify, implement and trial specific literacy programs for students in Years 7, 8, 11 and 12. These trials have had few tangible outcomes though. At the senior secondary level several different approaches were trialed to support students who were not reading and/or writing, though general acceptance of the programs seemed limited. At the secondary level a trial of the Spalding method at two high schools was undertaken and both schools intend to continue using the program as an intervention technique for students who have not achieved their literacy outcomes.

According to DoE, however these basic explicit literacy programs have not been well accepted by high school teachers. The reasons most frequently cited for this are time-tabling difficulties, cross-learning area difficulties and the work load associated with developing differentiated curriculum models or the assessment processes associated with programs like Spalding.

One tender for the Year 2000 expected to gain more acceptance, involves an intensive trial of the 'Stepping Out' program. A second, an extension of the 'Classroom Literacy' website, is designed to enable teachers to share literacy teaching strategies and interventions at the secondary level and a third involves work with the development of indicators of achievement of KILOs at the Year 7 and 8 levels and associated moderated work samples. Intensive training in the Spalding Method will also be offered to teachers across the State, delivered by Tasmanian trainers who have experience working in high schools.

According to figures obtained from the *Literacy and Numeracy Plan for 1999* in Appendix J the proportional allocations for literacy and numeracy are $7 093 250 (87%) and $1 068 000 (13%) respectively. DoE regards English and literacy as a more fundamental and over-arching set of competencies than mathematics and numeracy and therefore it is seen more important that English targets are met.

In addition there is evidence that literacy subsumes many numeracy competencies and the complex intersections between these sets of competencies are beginning to be explored through a research project undertaken with the University of Tasmania, feeder primaries and the Bowen District Support Service. Further, the *Count Me In Too* program and associated research will give further insight into the relationship between early literacy and numeracy acquisition. According to DoE the development of verbal reasoning and meta-cognitive capabilities alongside increasing self-confidence might underpin the intersections between literacy and numeracy learning.

The *Literacy and Numeracy Plan 2000-2002* has proposed the following targets outcomes for this period:

- That 90% of all students achieve appropriate KILOs in strand 1, *Reading Texts*, strand 5, *Writing Texts* and strand 7, *Spelling* at the appropriate year level;
- That 90% of all students achieve appropriate KINOs at the appropriate year level;
- That over the period 2000-2002 90% of students achieve nationally agreed literacy and numeracy benchmarks;
- That key strategic interventions be identified which teachers, principals and other DoE officers need to undertake to positively affect students' literacy and numeracy outcomes;
- That all school partnership agreements developed 2000-2002 include clear statements about literacy and numeracy outcomes that the school is aiming to achieve;
- That 90% of all Year 10 students achieve at least the TASSAB English mid-level syllabus EN416B or equivalent; and
- That 90% of all Year 10 students achieve at least the TASSAB Mathematics mid-level syllabus MT421B or equivalent.

Four key principles, namely the equity, effectiveness, efficiency and local management principles, were used to develop the plan and determine the means for resource allocation. As for the *Literacy and Numeracy 1999* the 2000-2002 plan states that an emphasis will again be placed on intensive literacy and numeracy teaching and learning for all students in the first three years of full-time schooling, again based on research evidence which suggests that these are the crucial years for developing competence in literacy and numeracy.

According to the plan there are five approaches through which outcomes data might be used to guide decisions about resource allocation. These are the compensatory, incentive, value-added, improvement and strategic intervention approaches. 'Strategic intervention' best characterises many of the approaches in place in government and non-government school systems throughout Australia and is the preferred approach for Tasmania. Strategic intervention refers to management processes that monitor performance and intervene where necessary. It is to be interpreted not just in terms of funding but in terms of resources and practices. Two management processes to effect strategic intervention are to be adopted.

The first form of intervention is the *Schools-Based Initiative Program*. Under this program the Literacy and Numeracy Coordinating Committee will tender with schools willing to undertake designated research projects and/or programs identified by the committee. The committee will also approach schools evidencing successful literacy and numeracy projects

and will offer negotiated support for the documentation and dissemination of successful practice. The specific schools-based initiatives to be funded are still being negotiated as is the broader set of goals which they may be designed to achieve.

The second form of intervention relates to management processes that are 'State' or 'centrally' determined. The Committee will consider, evaluate and fund literacy and numeracy research projects and targeted programs which are initiated centrally by DoE. These may be linked to state or commonwealth initiatives and policy, the results of the statewide data collection processes, successful school and cluster initiatives and initiatives based on state, interstate or international research findings. Examples of interventions developed from this process include Flying Start and the Program of Additional Support and Structure (PASS).

Assisted School Self Review

The *Assisted School Self Review* (ASSR) process involves members of the school community, including the principal, teachers, parents and students, in a comprehensive review of the school. Analysis of student outcome and stakeholder survey data is undertaken and the school reflects on a set of best practice indicators. Formal Partnership Agreements are developed between the school and local community on the basis of data collected and analysed. Schools are required to produce an Annual Report for use in the ASSR process. The format of the report is designed to facilitate the provision of information on school progress to school communities. In particular annual learning outcomes and target outcomes in the areas of literacy and numeracy are to be provided.

A recent preliminary analysis of the 1998 annual reports conducted by OER, investigated aspects of the learning and target outcomes of the ASSR process. Twenty-eight schools undertook the ASSR during 1997, at the end of which time Partnership Agreements were negotiated with local communities and District Superintendents. Schools were required to prepare an Annual Report on 1998 outcomes by March 1999. Twenty-seven schools including 13 primary, 5 district high, 7 high schools and 2 colleges completed the process.

According to the report on the preliminary analysis (OER, September 1999) the majority of schools provided meaningful, precise and comparative data about students' learning outcomes in relation to literacy and numeracy, using results derived from standardised tests, statewide monitoring tests and TASSAB assessments. The learning outcomes reported in the majority of Partnership Agreements examined by the Audit Office also met this description. Nevertheless it was reported that some schools did not make use of all available data:

- Five out of twenty-five did not report on their students' performance on the Year 3 and 7 state wide monitoring tests in literacy and numeracy;
- Six out of fourteen high schools, district high schools and colleges did not report on TASSAB results; and
- Seven out of twenty-five schools did not report aggregated teacher assessments of students' performance against KILOs and KINOs.

According to the preliminary analysis an emergent issue in the development of the target outcomes was the challenge of describing outcomes in a form that could be measured and reported with specificity in the following years. There was evidence to suggest that in some cases this objective was not met.

This was summarised as follows:

- In 1997 5 schools set no quantifiable targets in literacy;

- In 1998, 4 of these 5 schools reported nothing quantifiable and 6 other schools reported no measurable outcomes; and
- In 1999, the same 4 schools from 1997 continued to report no aim for quantifiable outcomes, as did 5 of the schools that had reported nothing quantifiable in 1998. These schools were joined by a further 8 schools which identified no measurable outcomes in literacy 1999.

An examination by the Audit Office of target outcomes for a number of Partnership Agreements revealed similar findings. As discussed in the preliminary analysis these findings confirm the need for more support and advice to be provided to schools in the development of measurable target outcomes. DoE maintains that there has been considerable progress in respect of those schools completing ASSR and Partnership Agreements in 1998 and 1999. Further ASSR and Partnership Agreements are considered as much matters for the local community as for DoE and some of the outcomes reflect local preferences and wording decided upon by parents.

Recommendation

In order to improve the ASSR process, DoE should provide additional support (where required) to participating schools with the development of quantifiable target outcomes for literacy and numeracy achievement.

Strategies used for identifying students with learning difficulties and track performance over time were nominated by 42% of primary schools. Voluntary tutors, teacher aides and district support staff were the most frequently identified means of support provision. Secondary schools did not refer to strategies for the identification and monitoring of students with learning difficulties. Instead information was presented about the type of support provided - this included assistance from parent and community voluntary tutors, elements of the Maintaining and Retaining Secondary Students at Schools (MARSS) programs, specialist teachers and aides, district support staff, peer tutors and special life skills or alternative programs.

Literacy and Numeracy Policies

The 1993 Literacy Policy was updated by DoE in 1997 and a new Numeracy Policy was also developed at that time. The policies specified the following requirements:

- Explicit literacy and numeracy teaching for all students;
- Regular monitoring and reporting of students' literacy and numeracy outcomes;
- Strong leadership and acceptance of responsibility for literacy and numeracy in all schools; and
- Minimum period of time that must be dedicated to teaching literacy and numeracy from prep to Year 10.
- For Prep to Year 6 a minimum period of 60 and 45 minutes per day is to be dedicated to the teaching of literacy and numeracy respectively. For Years 7 to 8 a minimum of 200 minutes per week is to be dedicated to English and Mathematics and for Years 9 to 12 the dedicated time is that specified by TCE English and Mathematics syllabuses.
- Minimum time allocations were not provided prior to the literacy and numeracy policies because policy documentation until that time mandated a balance of curriculum learning areas and basic capabilities. More specific timelines were therefore not given because literacy and numeracy were considered to be integrated into the curriculum and it was difficult to identify discrete periods of time.

Initiatives for Post Compulsory Education

The report *Post-Compulsory Education in Tasmania* (DoE, August 1999) has proposed several draft recommendations aimed at ensuring appropriate mechanisms are put in place to elevate literacy and numeracy to a high priority at all levels of schooling. These include:

- Early and continuing intervention programs to prevent low school achievement in literacy and numeracy should be viewed as a priority for Government. A range of opinions may be used to achieve this objective;
- TASSAB should be approached to undertake consultation with a view to ensuring that the development and assessment of literacy competence and where appropriate numeracy competence is part of every TCE syllabus;
- The development of alternative secondary and senior secondary school programs should be investigated and where appropriate, implemented to meet the needs of students with low literacy and numeracy skills; and
- TASSAB should be approached with a view to making literacy and numeracy thresholds part of a requirement for Year 12 graduation.

Up-Skilling of Teachers

The report on the *1998 Survey of Tasmanian Secondary Teachers* of English states that of the 64 teachers identified in the survey who were teaching English without being trained English teachers, 52% had received no specialised professional development in English during the last two years. Although the report explained that this was clearly an unsatisfactory situation, DoE has maintained that all schools are provided with resources to allow each teacher to undertake appropriate professional development. Opportunities for professional development are provided within schools and by DoE through the Principal Education Officer (PEO) of English, the English and Discover websites, by professional associations and by private providers.

The *English Priority Program 1996-1998* contributed importantly to the professional learning of English teachers, however after the first year not all districts continued to support the program as the emphasis on literacy (as opposed to English) influenced the focus of English curriculum officers. A number of other programs are also in place or under development to support English teachers teaching outside their area of expertise. These include

- A targeted, ongoing professional development program organised by the Professional Learning Services Branch;
- A range of focussed professional learning activities offered through the English and Discover websites;
- Regular contact by the PEO with students involved in the Bachelor of Teaching Program;
- Collaborative professional development programs with the Tasmanian Association for the Teaching of English; and
- Targeted workshops offered by private providers.

The report *Mathematics Teachers and Teaching in Tasmania in 1996,* indicated that 60% of respondents undertook professional development in 1996. More recently the extent of professional development of teachers without mathematics qualifications has been resourced at school level with these teachers relying heavily on the direction and support of more experienced mathematics-trained colleagues. Following completion of the report DoE also undertook a concerted recruitment policy of teachers of mathematics and as a result of

the Bachelor of Teaching Scholarship Program a further 30 teachers are expected to be employed in high schools and colleges.

During the early 1990s the *Mathematics Priority Program* was based in the Districts however not all Districts supported the program and it was difficult for the officers to respond to the needs of all schools. From 2000, DoE will be receiving substantial funding for three years in the Quality Teaching Program funded by Department of Employment Training and Youth Affairs (DETYA). DoE has decided to focus the funding on the professional development of teachers of mathematics and numeracy.

Consultation with Stakeholders

Until mid-1999 consultation with key stakeholders was undertaken through the Literacy and Numeracy Coordinating Group (LNCG) and the Commonwealth Targeted and Quality Schools Committee (CTQSC). Members of the LNCG represented key DoE stakeholders who in turn represented a range of personnel, departments and positions. Although the group co-opted other key stakeholders on a needs basis the Audit Office was not able to identify the presence of teachers and principals at meetings of this group. The CTSQC had as members representatives from the Tasmanian Council of State School Parents and Friends Associations, representatives from the Primary and Secondary Principals Associations, representatives from the Australian Education Union (AEU) and from parents of isolated children. This committee allocated the biggest proportion of funds coming to the state from commonwealth sources.

From mid-1999 various structural changes within DoE resulted in a revision of the composition of these allocative committees. A special meeting of an expanded literacy and numeracy group was called and key stakeholders, including two principals and two classroom teachers, were involved in a stakeholder analysis, issues identification and planning process.

Responses were elicited after each of six short presentations had been made by principals and classroom practitioners from schools where significant improvements had been made to students literacy outcomes. From the responses, themes and elements emerged which were interrogated to inform the development of new management planning and implementation processes. Work from this meeting led to the development of the *Literacy and Numeracy Plan 2000-2002*, and to a revised management process developed to ensure that the voices of school-based personnel are heard in planning. It is noted though that while primary principals and teachers were well represented on the Committee, only one secondary teacher was present for the first two meetings since the structural changes.

Recommendation

The Literacy and Numeracy Coordinating Group (LNCG) should be expanded to ensure proportional representation across the sectors. The Audit Office understands that expansion will occur when the Schools Based Initiative Program is implemented and supports this action.

Performance Management Cycle

The LNCG meets approximately two to three times a year and a representative from OER has attended most meetings. Minutes indicate that feedback has been provided to the group on the progress and results of monitoring programs and evaluations. In addition it is understood that senior executive staff are briefed each time a report is produced by OER.

Performance management has been demonstrated by a number of actions including the continuation or cessation of a program on the basis of outcomes, the refocussing of further

research and the initiation or modification of new programs. An example of modification to a key aspect of the *Statewide Monitoring Program* is the revision of the KILOs. After five years of use, the recent review of the KILOs was initiated by school principals and classroom teachers because they were found to be too broad, complex and jargonistic. The review process involved intensive work with 40 classroom teachers and 30 managers of literacy programs in schools across the state.

Identification of Students Considered to be Educationally at Risk

A Kinder Development Check is currently administered in Term 1 of a child's kindergarten year. It is used as a screen to identify children who are at risk in the development of their gross motor, fine motor, listening, speaking, understanding and their personal and social skill development. A review of the Kindergarten Development Check was undertaken in 1999 and a dissemination plan was to be produced as a result of recommendations developed in consultation with DoE, the Kindergarten Teachers Association and the Early Childhood Educators of Tasmania Association.

Students identified by this means are considered to be 'of concern' or educationally at risk until learning difficulties have been addressed. In theory, some such students could remain as identified 'of concern' for several years. District Support Service officers maintain a register of these students, as well as supporting schools in the implementation of remedial programs for these children and monitoring progress on an annual basis. OER collects statistics of the numbers of students initially identified each year as being of concern and the number of students who remain on the register from previous years.

Classroom teachers also assess and report on students' performance in literacy and numeracy against the KILOs and KINOs at the end of each year of schooling up to and including Year 8. Such assessments and reports identify any children whose performance at these stages of schooling is considered to be of concern. In addition statewide testing programs in literacy and numeracy, which assess and report on all children's performance during Years 3, 5, 7 and 9 provide an externally administered and reported measure of children's performance against specific literacy and numeracy strands and against the KILOs and KINOs. These individual results and reports also identify those students who are considered to be educationally at risk.

Similarly teachers' moderated assessments of students' performance in TASSAB English and Mathematics syllabuses at School Certificate (Years 9 to 10) and Higher School Certificate levels, which are conducted and reported annually, identify those student whose performance is of concern.

According to DoE the mandated annual reporting against the KILOs and KINOs and the recently developed structure of regular statewide testing and reporting programs in literacy and numeracy at Years 3, 5, 7 and 9 provide consistent and moderated methods of identifying and 'tracking' students who are educationally at risk. Current plans to accompany the revised KILOs with samples of student work which demonstrate expected standards of performance will enhance the process and complement the moderation process operating at School Certificate and Higher School Certificate levels.

DoE's draft *Literacy and Numeracy Plan for 2000* includes projects which are designed to enhance current methods of identifying students whose performance is of concern. The KILOs Publication and the High School Literacy Demands projects, for example, will develop and publish moderated work samples indicative of students' achievement of KILO at a number of year levels.

At the system level, the implementation of the regular statewide assessment program at Years 3, 5, 7 and 9 and the centralised reporting, recording and 'tracking' of individual students' performance over time using the data warehouse process will provide DoE with longitudinal records of the numbers of students whose performance is of concern. This information will enable specific intervention programs to be directed to areas of greatest need.

Intervention Programs and Evaluations

Literacy and numeracy are considered to be the core business of schools and according to DoE, funding for literacy and numeracy interventions has always been provided at various levels. One literacy intervention program implemented since the early 1990s was the *Prep Literacy Program* of 1994 for Prep children only. This was subsequently extended to the *Early Literacy Support Program* in 1996 for Prep and Year 2 children which was then extended to the *Flying Start Program* in 1997 to 1999 for all early childhood classes. The *Flying Start Program* incorporated numeracy and social skills in addition to literacy.

DoE has not been able to identify funding allocations prior to the *Literacy and Numeracy Plan for 1998* and in fact it has noted that one of the reasons for the planning process was to ensure that funding could be identified more specifically. Major funding at the State level has however been acknowledged as having been allocated to the *Prep Literacy Program* and the subsequent *Early Literacy Support Program*.

A report on the OER evaluation *The Early Literacy Support Program (Year 2 Component) Summary Report on Student Outcomes 1996-1997* (DoE, November1997) noted that when the performance of the 'experimental' and 'control' groups were assessed in Year 1 the initial performance levels of the experimental group exceeded those for the control group. It was not possible to compare the performance of the experimental group and the control group, in a rigorous way prior to the implementation of the program however because suitable standardised tests were not available. It was possible however to state that the experimental group 'received' both the *Prep Literacy Support Program* and the *Early Literacy Support Program*, and the control group received neither. The evaluation was therefore essentially one of the effect of the combined programs and DoE considers that the study yielded important information about the combined effect of both programs.

The following statements were provided in the conclusion of the evaluation:

> Girls who had participated in the program performed on average better than those who had not participated in the program. The improved performance of girls who had participated in the program over those who hadn't was statistically significant both at the end of Prep and at the end of Year 2. p19
>
> Boys who had participated in the program performed, on average, slightly better than those who had not participated in the program. The improved performance of boys who had participated in the program over those who hadn't was statistically significant at the end of Prep, but not at the end of Year 2 for several indicators. This suggest that the relative difference in performance between the two groups decreased through Years 1 and 2. It might also suggest that the Year 2 component of the *Early Literacy Support Program* had a detrimental effect on the performance of many boys in the program (p19).

Summarised information of literacy intervention programs for 1999, corresponding evaluations and findings is provided in Appendix K. As discussed, a major initiative for the 1996 State government budget was the provision of an extra 130.5 full-time teachers to continue and extend the work of the *Early Literacy Support Program* through the *Flying Start Program*. In addition to continuing the support given to the teaching of literacy in the Prep-2

years, the new program was to give equal emphasis to the teaching of numeracy and social skills.

Goals for the program are outlined in the document *The Flying Start Program 1997-1999 – Goals Outcomes and Indicators* (DoE, March 1997). The goals were as follows:

- The *Flying Start Program* will promote educational continuity for children from birth to eight, through open communication and shared understandings among teachers, parents, carers and significant other adults p1;
- The Program will assist students in their progress towards achieving literacy (KILOs) and numeracy (KINOs) skills, social skills and the pre-compulsory outcomes (when completed) within a cross-curricular, positive learning environment p3;
- The Program will support teachers in assessing children's progress, planning specific objectives for further progress and intervening with strategies to achieve these objectives p5; and
- The Program will encourage teachers to work closely with parents, communicating information concerning their children's progress and plans for intervention, and encouraging their participation in children's learning programs p6.

In September 1996, the State Coordinator of the program circulated to all schools and support officers a publication titled *Guidelines and Requirements for Implementation - 1997* (DoE, 1996). These specified that all schools were to receive a staffing allocation of a minimum of 0.4 FTE for the employment of a resource teacher to work in Prep, Year 1 and Year 2 on a daily basis for the whole school year. Each school's resource allocation was calculated according to the school's predicted enrolments for these years. As the program was a daily provision for Prep to Year 2 it was expected that resource teachers would be on site each day of the week for no less than two hours.

Professional development for participating teachers was considered essential and four half day mandatory workshops were provided. The professional development program was to focus on:

- The establishment of shared understandings about the range and complexity of teaching practice appropriate to this age group;
- Planning for explicit teaching in the attainment of the KILOs and KINOs and other specified outcomes;
- Monitoring and assessment of student's progress;
- Reporting and recording within early learning programs;
- Community and cross-curricular programs;
- Prior-to-school experiences;
- Working with parents; and
- Working in teams.

Evaluation of the implementation of program was to be ongoing through anecdotal evidence drawn from key personnel and action research projects. Quantitative analysis was to be implemented by OER to monitor the attainment of the goals during 1997 to 1999. Specific findings of the draft report for the *Flying Start Program* (OER, September 1999) were made known to the appropriate senior officers of DoE earlier in 1999 as soon as they came available – reading performances in first term and social skill performances in second term. This information was thus provided in an appropriate timeframe to be considered for future

year planning and policy development. The writing and final editing of reports is undertaken subsequent to the sharing of this information with senior officers. The reports are usually published initially as draft documents to provide opportunity for feedback and input from teachers and officers within DoE.

A student outcome specified for literacy, numeracy and social skills in respect of the second goal of the *Flying Start Program* was as follows:

> There is measurable improvement in the performances of students in these three areas from 1997 to 1999.

The draft report for the *Flying Start Program* describes the extent to which this outcome was achieved by examining whether or not participation in the program had a cumulative effect on student performance. By comparing the performances of students in the same grade from cohort to cohort, it is possible to estimate whether cumulative exposure to *Flying Start* results in improved performance. For example, if the Grade 2 group experiencing three years participation in the *Flying Start* performed better, on average, then the Grade 2 group experiencing two years participation, then it would be reasonable to assume that the *Flying Start Program* was effective. It should be noted that there are two other groups involved in the Flying Start evaluation: a grade 4 group (1997) with no involvement in any statewide intervention program and a grade 4 group (2000), with full participation in *Flying Start*.

Surprisingly, no measurable improvement was found to have occurred in average reading or numeracy performance when comparisons were made of the performance of the Grade 1 cohorts of 1997 and 1998 and the Grade 2 cohorts of the same years. For reading the report proposes that this may have occurred as a result of a possible 'saturation' effect of prior early literacy intervention programs. Another proposed reason, namely that the focus of the Flying Start Program to other areas was too broad may have decreased concentration on literacy, is to an extent dispelled by the DoE finding that on average there was approximately a 90:10 split by schools of Flying Start funds between literacy and numeracy.

According to DoE the fact there was no measurable improvement in average reading performance from 1997 to 1998 should not be used as an indicator of the failure of the *Flying Start Program* to achieve measurable improvement from 1997 to 1999. *Flying Start* is a three-year program and it is considered that the outcomes should be judged on measurements applied at the end of the three-year period. The possibility of any variation to the current funding of the *Flying Start Program* will not be considered until all this data is available.

In November of 1999 testing of the third sample of 1000 students in Year 1 and Year 2 was completed and the data from these tests will be analysed early in the Year 2000. The results will be compared with the baseline data results in 1997 and conclusions about the degree of success achieved will be based in part on the results of this comparison. Equally important will be the results of a pre- and post-test program conducted initially with a sample of Year 4 students in 1997 (that is, students who had no access to the *Flying Start Program)* and to be conducted again with a sample of Year 4 students in 2000 – students who have had full access to the *Flying Start Program* over the preceding three years.

Another stated outcome for the second goal, was as follows:

> The proportion of students not attaining the appropriate KILOs, KINOs and social skills during the period 1997 to 1999 has decreased.

Preliminary evidence from the 1999 *Statewide Monitoring Program* suggests that this outcome has been attained.

Update by DoE

From the Year 3 statewide literacy monitoring programs in 1998 and 1999 we have established that there has been a decrease over these two years in the number of students not attaining the appropriate KILOs. The 1998 test data provided evidence that 7% of the cohort had not achieved the appropriate KILOs. The 1999 test data indicates that 3% of the cohort had not achieved the appropriate KILOs. Information about relative performances in KINO and social skills over the three-year period will be available in 2000.

End of DoE Update

The paper *The Flying Start Program 1997-1999 – Goals Outcomes and Indicators* made explicit the Department's policy on the involvement of parents in the Flying Start Program:

- A major aim of the program was to encourage teachers to work closely with parents, communicating information concerning their children's progress and plans for explicit teaching, and encouraging their participation in their children's learning program; and
- The program was designed to provide programs for parents as children's first and continuing educators.

Assessment of the understanding and degree of parental involvement was undertaken by OER by means of a questionnaire that was provided to a sample of Year 2 parents. Atccording to the OER report *Parent Responses to the Flying Start Program – 1997* the major issue to emerge through parents' responses to the questionnaire was that of home-school communication. Parents' comments indicated that many schools have developed excellent strategies designed to assist parents in helping their children with learning activities at home. There were sufficient comments made in the responses, however, to indicate that some schools should review their current method of home school liaison in order to satisfy parents' expressed needs to be kept informed about their children's progress regularly and effectively.

The Program of Additional Structure and Support (PASS) was introduced in 1998 in response to a perceived need to introduce more structure into the *Flying Start Program*. It was introduced as a trial with participation being limited to 22 schools and in 1999 it was extended to more schools on a voluntary basis of participation. The program is based on the successful *Victorian Early Literacy Program* and is well supported by research evidence. An interim quantitative evaluation completed in 1998 found that students in both the PASS and control schools performed on average at a higher level than expected for their actual age as judged by the recent 1996 US norms. The final evaluation is due for completion in the Year 2000.

The Spalding Program is part of the much broader *Classroom Literacy Program* which received a specific Commonwealth funding grant of $250 000 in 1998. A semi-quantitative and qualitative analysis of the program was conducted by OER in 1999 and it appeared that there were clear benefits to be had for most participating students. A control group was not implemented for the evaluation and therefore the testing process did not answer the question as to whether the students had improved more than might be expected without any intervention. Other factors that may have contributed to the positive results of the Spalding Program could have included the explicit teaching, the multi-sensory approach, regular focussed time, improved teacher understanding of the processes involved, the strategies taught or regular monitoring. Due to the limitation of the test methodology therefore it is wise to treat the findings with some caution at this stage. The need for further studies to facilitate identification of the factors essential for success has been identified in the report.

Regarding the evaluative approach, DoE has also acknowledged that owing to the fact that OER was given 'late notice' of the need to evaluate the Spalding program, it was not possible to design a properly constructed quantitative evaluation of student outcomes in 1998. The second phase of the evaluation of the Spalding Program will involve a quantitative study of student outcomes using the TORCH Test that has nationally derived norms. The same students will be tested in the future on the same test and the difference in performance will be used to determine progress. In effect then the students tested to obtain norms will be the control group and OER will be able to state whether improvements in reading were greater or less than ordinarily expected based on these norms.

Summarised information of numeracy intervention programs, corresponding evaluations and findings are also provided in Appendix K.

Boys and Literacy

A *Boys and Literacy* project was undertaken across the State in 1998. This involved an officer running sessions in each District, working with teachers to develop gender inclusive literacy teaching units. In addition, a number of schools have identified the issue of boys' difficulty in gaining early literacy skills and groups of teachers are working to develop a broader range of practices to suit different thinking styles. These action research projects are not however centrally coordinated. The current approach undertaken by DoE therefore is to trial a range of methods of literacy teaching, and then to disaggregate outcomes on a gender basis to try to find some clues to focused research questions.

Indigenous Students

The *Aboriginal Education Strategic Plan for 1997-2002* has defined the outcomes, strategies, responsibilities and completion targets for Aboriginal Education at all levels within DoE. All schools and colleges are to include implementation of the relevant strategies and evaluations within their school plans and district officers are to monitor and report on the implementation of strategies. Consultation with the Tasmanian Aboriginal Community on educational matters is facilitated by the Tasmanian Aboriginal Education Association.

Goals set by the plan directly related to performance in literacy and numeracy were:

- To ensure that all Aboriginal students have access to education and attend school regularly;
- To ensure that all Aboriginal students have access to and participate in a full, relevant and challenging curriculum;
- To ensure that all Aboriginal students continue at school until the completion of Year 12; and
- To improve the attainment and success of Aboriginal student groups at all levels of schooling.

Programs and evaluations implemented during 1999 to facilitate the improved performance of Indigenous students are listed in Appendix L. All programs instituted for Indigenous students relate literacy, numeracy and retention. Many have to do with identity and self-esteem as these factors are considered important for improved performance. Two such programs *Cross-Cultural Awareness* and *Changing Places* are detailed in Appendix L however there are at least 10 others. For these 10 programs however approximately half do not appear to have descriptions of evaluations.

Recommendation

In order to accurately gauge the effectiveness of interventions for Indigenous students, consideration should be given to increasing the number of evaluations of programs designed to improve the performance of this target group.

The Improving Numeracy for Indigenous Students in Secondary Schools Program (INISSS) involved professional development for teachers based around the use of teaching materials that had been successfully used with Indigenous students elsewhere. Nearly 2 000 Year 8 students in 19 project schools with a large number of Indigenous students attempted the tasks. Each student completed two tasks in March and undertook another two in October 1999 and approximately half of the students at each session completed each task. Classroom teachers administered the tasks within their normal lessons. Some of these teachers were part of the project but others relied only on the information provided by project teachers.

The results of INISSS suggested that Aboriginal students gained the most over the period of implementation and that the highest gains were amongst Aboriginal boys. This group has traditionally been the lowest achieving group in testing programs and therefore the results appear to have some educational significance. It is reported that it is not possible to attribute the improved outcomes to the program alone, since no causal link had been established. Further analysis is therefore needed to confirm the encouraging outcomes, and to link these with student and teacher questionnaire data.

Summary

Departmental action to address below-targeted performance has been concentrated at the early childhood level in the form of a range of interventions. Evaluations have been conducted for the majority of programs however the degree of evaluative rigour has varied in each case. There is a notable lack of interventions for the secondary sector.

CONCLUSION

Testing Regimes

DoE has implemented quantitative testing for aspects of literacy and numeracy at both primary and secondary government schools and it is also participating in national and international testing programmes. Testing regimes are continuously improved by OER however there are several aspects of the current measurement techniques adopted that require refinement. Further there is a need to mandate the systemic collection of enrolment, withdrawal and assessment data at the subject level for the upper and senior secondary sectors (Years 9-12).

Test Outcomes

There is evidence to suggest that achievement in literacy suffered a downturn in Tasmania during the decade from the mid 80s to the mid 90s. The decline is apparent through the results of the *Year 5 Reading Monitoring Program* for 10-year-olds from 1976 to 1993. The legacy of the slump may also be seen through the apparent under achievement of a significant proportion of the 1998 Year 7 cohort in literacy and the current retention statistics for the post-compulsory sectors. The large proportion of the 1998 Year 7 and the 1997 Year 9 cohorts performing below an appropriate level in numeracy as measured by the *Statewide Monitoring Program* and *the Year 9 Numeracy Monitoring Program 1977 to 1997* respectively, indicates that there is considerable scope for improvement in this learning area.

Primary Sector

The need for immediate intervention was signalled to DoE by these findings, and in keeping with research evidence, DoE acted to intervene at the early childhood level from the mid 1990s.There is some evidence from the statistics of *the Statewide Monitoring Program* that improvements in literacy achievement have been obtained, and the results for numeracy appear reasonable at this early level. The recent results in relation to two years of a three year Flying Start Program, however, do not show significant improvements in test results.

Secondary Sector

Statistics of performance in literacy and numeracy at the lower secondary level produced by the *Statewide Monitoring Program* indicate that a significant proportion of students were performing below an appropriate level in 1998. These students were not subject to any early intervention programs and during that year they did not receive intensive intervention in literacy and numeracy. DoE has acknowledged that test results for the secondary sector represent poorer levels of achievement than for the primary sector and this probably reflects a number of factors including the departmental decision to prioritise resources in the early years of schooling.

While future students at this level may show the benefits of the intervention now being provided at the earliest years of schooling, it is also important that the current cohort of secondary students receive consideration. It is beyond the scope of this report to suggest how feasible any such program would be in educational or financial terms. DoE has noted however that as with any educational variable there are no simple answers or easily identifiable cause and effect relationships, and the significance of local-management and

decision-making in the ability of the centre to interface and maintain performance standards needs to be taken into consideration in addressing this issue.

At the upper and senior secondary levels data on performance in English and Mathematics, or other subjects responsible for enhancing literacy and numeracy achievement, is considered inadequate. In the absence of performance data suited to analysis at this level the Audit Office examined retention statistics which have been shown to be correlated to literacy and numeracy achievement. The retention rates for Tasmania were found by DoE to be of sufficient concern to prompt a set of draft recommendations aimed at improving literacy and numeracy achievement at this level.

Extent of Publicity

Aggregate test outcomes are readily available through publications and the Internet or on request from DoE. The mandatory provision of individual student reports to students and parents by schools is advocated by DoE and the development of a policy to ensure this requirement is in process.

Funding Model

Determination of an alternative funding model to the current ENI based approach is not straightforward nevertheless DoE is committed to the investigation of the viability of other models.

Overall

Disentanglement of the confounding variables in literacy and numeracy achievement is a complex task requiring the application of a range of quantitative and qualitative analyses. DoE is in the preliminary stages of determining and introducing educational practices that are perceived as likely to improve performance according to current thinking. Budget pressures have been noted by DoE as a presiding limitation in the implementation of proposed changes, and in forming expectations about enhanced performance this inherent constraint should be taken into consideration.

COMMENTS FROM TASMANIAN PRIMARY PRINCIPALS' ASSOCIATION

Assessing Literacy and Numeracy Outcomes

For students to be proficient in literacy and numeracy they need to have a sufficiently wide range of learning in language and mathematics to enable them to respond appropriately and confidently in a variety of different contexts.

- The scope of abilities required to be literate and numerate are broad and cannot be adequately assessed by means of paper and pencil tests alone.
- Current literacy and numeracy testing programs are necessarily narrow in scope and intent.
- Key areas such as viewing, speaking and listening are not included, and interpretation and creation of multimedia products/resources/materials that combine vision, sound and text... receive little attention.
- The DART testing program (1996) had the potential to be more holistic and hence its early abandonment was disappointing.
- Whilst accepting their importance in providing intentional learning programs for students, over emphasis on KILO and KINO outcomes leads to a narrowing and minimisation of learning experiences for students , particularly in language and mathematics.
- Testing alone does not improve literacy and numeracy outcomes, it merely indicates student progress and ability within the field addressed by the particular tests used.
- Over reliance on quantitative literacy and numeracy testing, at the expense of other qualitative information, opens up the real possibility of 'league tables' through which schools are compared and even graded.
- Comparisons derived from 'league tables', and the like, almost inevitably lead to unjust and unreliable comparisons because the multi-variant factors involved in the operation of school create widely different needs and contexts.

Quality Learning Experiences

Quality input to the learning experiences students undertake is one of the most crucial factors in improving student learning outcomes, and hence the development of 'rich pictures' of what schools provide and how that might be enhanced would be most helpful.

Many commercial resources currently available that are used by teachers are topic driven, which leads to fragmentation .and disconnectedness in the learning process.

A good language and mathematics program provides the foundation for achieving high level outcomes in literacy and numeracy.

- Whilst the National Curriculum Statement and Profiles are useful resources, more needs to be done to provide coherent resources in the fields of literacy and numeracy
- Tasmanian Education has not developed K-8 English Guidelines for teachers. A substitute used by growing number of teachers is Western Australia's *First Steps* which is a particularly valuable resource for literacy development, and provides a

good starting point for the further development of literacy resources, which are broad in intention, process and content.

- The K-8 Mathematics Guidelines supported by The *Derwent Mathematics Program* (developed by Tasmanian teachers) has proved to be an effective translation of the National Curriculum Statements and Profiles into classroom practice. However, there is a great need to increase teachers' own understanding of the *maths* in mathematics so that they are better placed to interpret the needs of students and intervene in a positive and constructive way.
- The *Count Me In Too* initiative for Kinder to year 2 has the potential to meet the need for professional development in the number strand of Mathematics and numeracy, provided it is adequately funded. This program requires teachers to make assessments of each student's understanding of number and identify a starting point for planned learning and teaching relevant to that student.
- Numeracy needs to be raised to the same level and status as literacy. To date literacy has had the major share of available funds and human resources.
- Devolution of the Department's literacy support programs has made maintenance of momentum and direction Statewide more complex. Whilst local and District-based delivery of support programs is desirable and effective, Statewide coordination and facilitation (training trainers) remains essential.
- The *Flying Start Program* needs to continued and expanded to be more targeted to the learning needs of individual students. There are clearly identified needs in years three and four.

These comments represent an integrated 'package' and need to be considered as a whole not in isolation from one another.

COMMENTS FROM TASMANIAN SECONDARY PRINCIPALS' ASSOCIATION

The Tasmanian Secondary Principals' Association questions the validity of the TIMSS tables. They give the impression that Tasmanian students are the worst performed in the nation but if age/years at school are taken into account this may not be so.

There is a need for more data which compares the achievements of like aged students across the nation.

The data presented re non-achievement of an award is hard to believe. I also question its validity as a measure of literacy skills.

The recommendation regarding the ASSR is fine but I believe schools and the Department should be looking for quantifiable measures of improvement, not just norm based performance.

COMMENTS FROM TASMANIAN COUNCIL OF STATE SCHOOL PARENTS AND FRIENDS ASSOCIATIONS INC.

Thank you for giving The Tasmanian Council of State School Parents and Friends Associations the opportunity to comment on this very informative document. Parents have been concerned by the decline in literacy and numeracy outcomes for some time.

Tas Council endorses the recommendations of the report with the following comments.

Early Childhood Education

Tas Council would support the establishment of defined curricula in early childhood years. Parents of children entering school at Prep should know what their child is expected to know at the end of each year. Such established goals, together with comprehensive reporting mid year, would enable remedial action to be taken early, if a child is experiencing difficulties.

The effectiveness of specialist programs such as *Flying Start* and *Spaulding* has been shown by your report to be questionable, and we would agree with these findings. There is however, concern amongst principals that should the *Flying Start* program be dropped, they would lose dedicated teachers, currently used not only to address the needs of those children with literacy and numeracy deficiencies, but also some students with "other problems". The provision of these additional teachers is believed to help with overall classroom discipline management and therefore the whole school environment.

With established curricula commencing at prep, the funding currently provided through *Flying Start* could more effectively be directed to those children who need additional assistance.

Research

The Tasmanian Council of State School Parents and Friends Associations is concerned that the research done in relation to *Spaulding* has been flawed in that such an elementary area as a control group was not established. We find unacceptable the Department's excuse that they did not realise the Commonwealth would require an effective evaluation, even though this has always been the case.

School communities were led to believe that due to this research parents should provide money or support for its introduction to their schools. Why should Tasmania choose a practical trial when New South Wales was already running one and the program had already been around for 40 odd years, and a literature search would have given a much more comprehensive evaluation?

Tas Council also queries the cost of this program and the relative effectiveness for dollar input.

Funding

The issue of funding also has implications which are being looked at by the Department of Education in their review of the Economic Needs Index. Without equitable distribution of funding through the Schools Resource Package, situations where one school has to make cuts to specialist teaching areas, whilst another invests in training programs such as the Spaulding method will continue to occur. The impact is highlighted in small schools where programs are trimmed and sometimes cut because there are little or no funds. Small

schools which invest in teacher professional development and train in such methods as "Spaulding" waste valuable resources if those teachers then move on due to transfer or other reasons.

In the meantime, parents who do not qualify for the Student Assistance Scheme are being asked to pay increasing levies, some of which come very close to that paid in the non-government sector.

It is essential that this review provides measurable improvement in the funding of schools.

Special Needs Funding

The other funding issue which is having considerable impact in schools is the Category "B" funding for students with special needs. This Commonwealth funding is distributed through the Education Districts after allocations have been made to Category "A" students (students needing high level support). Typically, children who come into the "B" group, have behavioural problems and/or a degree of learning disability. However, many children in need of additional support receive no funding, simply because there isn't enough money to go around. Failure to fund this group leaves these children at risk of poor literacy/numeracy skills at the end of their schooling.

At present there is little acknowledgment from the successive governments of their capacity to service these students and their educational needs with the provision of trained personnel and resources. If the Commonwealth will not increase the support for these children, then the State government will need to look at ways it can assist.

Boys Education

Special attention also needs to be paid to the education of boys, particularly in the early years of schooling. Tas Council, at its 1999 Annual Conference, called on the Minister for Education to form a taskforce to develop strategies which will redress the gender imbalance in the teaching profession. The shortage of male teachers, particularly in primary schools, is having a impact on young boys. Low self esteem established in the early years, is likely to affect the entire educational experience. Boys develop and learn at a different pace to girls, and if they are struggling in the class room, are likely to become disruptive. Different methods of teaching need to be developed to educate boys effectively.

Children at Risk

As highlighted in this report, the identification of a child as being "at risk" or "of concern", does not guarantee that these concerns will be addressed. These children, once identified, need to be tracked throughout their education. Early intervention does not always guarantee improvement and special programs need to be developed to assist with the learning process. Until we have a fool-proof system that is going to guarantee the optimum outcomes for all children completing grade 6, programs will need to be provided for students in grade 7 and beyond. Literacy and numeracy programs for students at risk need to provided throughout their secondary education.

Teacher Professional Development

The report, by highlighting the plight of Maths, Science and English teachers in particular, draws attention to problems with school based delivery of professional development. This practice has created inequity in the system, because teachers from small schools are unable to access professional development due to budget constraints.

Schools that have invested in professional development once and then lost their staff through transfer are also reluctant to invest heavily again. This impacts mostly on the delivery of specialist subject areas because of the huge cost in bringing someone up to standard in any specific subject area.

Tas Council believes the Department needs to make teacher professional development centrally funded and delivered as schools cannot afford to invest in professional development for teachers they may or may not have long term in their school.

Specialist Teaching Skills

The Tasmanian Council of State School Parents and Friends Associations has been lobbying the State Government to ensure that students are provided with teachers skilled in the areas in which they are teaching. This relates not only to the areas where there are recognised national shortages – Maths, Science, Information Technology and English, but also Early Childhood (K-2) and Primary (3-6). A progressive school is not the place for a staff of "generalists", but have a requirement for specialist teaching staff.

TASSAB

The relatively high percentages of non-indigenous students who took Year 12 English and Mathematics courses but who did not gain awards is noted. Tas Council agrees that enrolment data, including reasons for withdrawal should be methodically collected. The collection of specific fail data is necessary for an accurate assessment of literacy and numeracy achievement at this level.

Indigenous Students

There is concern at the increase in the number of Indigenous students at educational risk between Kindergarten and Year 2. Further investigation of the factors leading to this increase, to determine whether it is related to the educational programs offered or some other factors, is important.

EXTRACTS OF COMMENTS FROM THE TASMANIAN BRANCH OF THE AUSTRALIAN EDUCATION UNION

The Limits of Testing

There is nothing intrinsically wrong with the concept of tests, benchmarks and standards. Good teachers are constantly using them. Their professional training combined with years of systematic persistent observation in classrooms with a diverse range of students, have enabled them to develop a complex set of performance indicators of learning in literacy and numeracy. These kinds of benchmarks are both useful and beneficial adjuncts of student learning.

External benchmarks become toxic when they are used to make comparisons between schools, which is what happens with our testing. Teachers in schools, which have large numbers of disadvantaged and special needs students have already become demoralised by the results of the tests produced. These teachers do all that can to help students from poorer homes, and all the test results do is reflect the family income and background within one or two standard deviations.

The benchmarking from these tests becomes destructive when teachers, students and parents begin to believe that the benchmarks and the instruments used to measure their acquisition bear even a minimal semblance to what comprises the richness and complexity of literacy or maths knowledge and understanding. The tests are a technically sophisticated yet an oversimplified approach to evaluation. There is a perceived 'reliability' and 'validity', which is not necessarily true, built up in the public's mind about the results of the tests. The notion that educational standards can be quantified and measured meaningfully by one-off, standardised, decontextualised tests is given false credibility through the use of standardised instruments.

There is already evidence that some Tasmanian schools are becoming sufficiently concerned that they are running sample tests with the students before the 'real' external test is administered. It is only a matter of time before teachers become deskilled and professionally disempowered and are forced to teach to the test and in turn begin the process of deskilling, disempowering and 'dumbing down' their students.

The New Zealand government has dropped plans to introduce national tests in English and mathematics for primary school children. New Education Minister, Nick Smith, does not favour the plans for 8, 10 and 12 year old testing proposed in May 1998 by his predecessor, Wyatt Creech.

The history of external testing and benchmarking in other countries such as the USA, and more recently in New Zealand, is depressing in this respect. In the USA almost 50 years of trying to implement various forms of benchmarking in literacy, while at the same time avoiding its toxic effects, has been a dismal failure. Not only has it not produced any significant gains in literacy, it has seriously deskilled teachers and produced high rates of illiteracy. New Zealand, after a brief fling with national benchmarking, they rejected it when they became aware of its negative effects.

When all costs are considered the amount of money being spent on external tests is not inconsiderable:

- Salaries of OER professional and clerical staff;
- Relief provided for teachers to be released from school to write the tests;

- Payment for marking;
- External consultancy costs; and
- Printing and distribution of tests.

Other than the Flying Start Program there is no funding for the remediation which teachers identified long before any test was administered.

AEU accepts that there is a national directive by the current Commonwealth government to test in years 3, 5 and 7 and that all states and territories must adhere this to.

However, the proposal to test years 3, 5, 7 and 9 as well in literacy and numeracy in the year 2000 and every two years thereafter represents an excessive volume of testing, which exceeds the national requirement. The year 9 testing is particularly irrelevant. It is highly unlikely that special funding for literacy will be introduced for years 10 to 12 for those students who fail to meet the benchmarks.

- The introduction of greater testing needs to meshed with resources, otherwise if a school performs "badly", there is no guarantee of additional resourcing to assist students.
- The notion of 'value added' in this context is highly suspect as the one off standardised test measures a limited range of skills, chiefly factual rather than higher order and has potential for distortion and measurement error.
- There has never been a test of this nature, which can take into account language and cultural differences.
- When all costs are taken into account including salaries of professional and support staff involved in developing and marking the tests and consultants fees, the tests will be expensive and a burden on an already stretched education budget.

The draft Audit report uses the test results to make the following conclusion:

> Based on the test results for literacy and numeracy at the year 7 level in 1998 and the Year 9 numeracy test results in 1997, I conclude that there appears to be a significant under achievement in the learning areas reviewed for these year groups. Further, there is only a small proportion of funding for intervention programs in literacy and numeracy at the secondary sector.

There are several factors involved here not the least of which are the tests themselves and just how much credence a one off pen and paper test should be given in establishing standards of educational achievement for whole learning areas. Overall relationships between test scores and learning outcomes are problematic. Issues about test construction, criterion or norm-referencing, minimum or other competency levels have provided fertile ground for debate for many years, with little consensus. It is a bald assertion to deduce that one off tests in literacy and numeracy are indicative of performance in whole learning areas of English and mathematics. Performance in whole learning areas must be gauged through a range of assessments, which form an integral part of class room learning programs.

Presenting Test Results to the Public

One of the audit objectives is the

> the extent to which the general State or localised outcomes are made known to the public.

The AEU notes that the Audit Office has endorsed the recommendation in the draft revision of the Reporting to Parents Policy requiring all student reports from Statewide Monitoring tests to always be made available to parents.

Recent experience in relation to literacy and numeracy testing in Australia shows that data can be widely and wildly misinterpreted in ways that are detrimental to the interests of public education. This is not just a phenomenon of the mass media. Commenting on the American experience of standardised testing, Perrone (1977 p. 10) notes that despite manufacturers manuals which warn about the limitations of their tests, teachers and school administrators commonly use them inappropriately. If educational professionals are confused about the interpretation and uses of tests what hope have inexperienced lay people like parents got in understanding the narrow scope of the tests in relation to their own child.

Measurement problems are compounded when the tests are meant to be multipurpose. Often proposals for testing assume that a simple testing program can address a variety of concerns (diagnostic, formative, summative and evaluative) at a variety of levels (student, teacher, school, system, parent and community). Clarification of the purposes of any testing programs, acknowledgment of the tensions between various purposes, and acceptances of the program's limitations are preconditions for its appropriate application. In general, the more purposes a particular testing exercise is intended to serve the less adequately it will serve any of them.

Parents, students and the general community have a right to expect that school systems will be accountable. The AEU does not view it as appropriate to use provide parents with data from systems self-monitoring tests. The prime purpose of the tests is to enable the education system to demonstrate accountability to state and federal government. The results of a one off test can give parents a false picture. School based assessment should be the major process by which parents are informed of their children's achievement. The assessment strategies should reflect the complexity of student learning and the full range of curriculum goals. Assessment should be recognised as a complex and inexact process, which involves errors of observation, description, measurement and judgement. In the event of the systems monitoring tests being sent to parents, the tests should go through the school in order for the school to explain what the tests do and do not reveal within a broader context of student achievement. The central importance of school based assessment should be emphasised.

Flying Start Program

The major Tasmanian initiative is the Flying Start program focussed on years P-2 and emphasising the explicit teaching of literacy, numeracy and social skills. This program provides additional resource teachers and professional development for early childhood teachers.

The Auditor General's report is contradictory in describing the effectiveness of the program. The report states:

> The statistical evidence available in relation to two years of a three year Flying Start Program does not show significant improvements in test results and requires consideration in future planning (p 10).

Yet:

> The steady decline in reading performance form 1976 to 1993 signalled the need for immediate intervention in the early 1990s and the most recent literacy results from

> *Statewide Monitoring Program* may indicate that strategies implemented since 1993 have been effective(p 24).
>
> ...the application of additional resources and literacy and numeracy programs in the early childhood years of schooling since the early 1990s could have contributed to the better performance of year 3 students...(p 37)

There is good evidence to suggest that some substantial progress can be made towards improving the performance of the lowest achieving students in the first three or four years of schooling. (See, for example, Kennedy et al. (1986) *The Effectiveness of Chapter 1. Services* Washington DC. Office of Educational Research and Improvement, US Dept of Education.)

The basis of this improved performance in the early years is intensive carefully structured and regular small group and one-on-one tuition over more than one year of schooling. The Flying Start program fits this criteria.

Teacher Issues

In relation to below targeted performance in literacy the draft Audit report quotes DoE to the effect that:

> ...teachers did not have any clear understanding of the level of achievement or the sequence of skill development that should be expected by students at various year levels...(p 38)

and:

> During the period there was not a school culture of assessment data to inform program development in schools (p 38).

AEU disagrees with both of the above statements. Teachers have always had an understanding of skill development and have reported on student development in reading, writing, language and aspects of mathematics.

One of the difficulties facing teachers is that the establishment of literacy is one priority among many others which appear to be growing almost daily, and thus this has to take its place among support for gifted programs, health programs, the teaching of languages other than English and education designed to rectify a wide range of social issues. These demands not only produce a level of 'reform fatigue' and cynicism among educators, but, at a very practical level, render schools incapable of effective action on matters that should have the utmost precedence. Literacy is first on the list.

Coherence, stability and continuity are essential features of effective educational efforts. The draft Audit report has a recommendation which AEU strongly concurs with which is that "the effect of inattentiveness on literacy and numeracy achievement should continue to be investigated to determine the nature of the bi-directional relationship between these variables." It is critical to assess student inattentiveness and the reasons for it. Equally critical is the attentiveness span of governments. 'Fixing literacy' is not a one-off task which can occur over the attention span of a politician or even somewhat longer. While methods may change over time as technical craft improvements are tested and validated, the need for sustained effort is a continuing proposition for as long ahead as can be envisaged. New challenges arise with every cohort of students. This is not a process which will change.

It is essential that the following resources are not viewed as a pro tem measure or as a 'special initiative' funding. They must be construed as the base for effective continued literacy achievement.

- Classes of no more than 20 in years kindergarten to year 2 and no more than 25 in years 3 to 12. If teachers are to achieve successful results in literacy for the considerable majority of their students they need to be able to provide the requisite individual attention.
- Flying Start is a well validated program for improving literacy levels in the early years. Its apparent expense is substantially mitigated by its longer term cost effectiveness. For full effectiveness, its implementation must provide for the whole group of lower performing student with appropriate follow up in years 3 onwards.
- A central entitlement to four days of professional development each year specifically on literacy issues for all primary teachers.
- An additional teacher (additional to the existing teaching establishment) should be placed in each primary and high school with designated responsibility for the literacy program within the school and for its effectiveness. In schools with fewer than 100 students, a 0.2 allowance for this work; in schools with 100-250 students, a 0.4 allowance, in schools with more than 250 students, a 0.6 allowance and in schools with more than 500 students a full time teacher.

Consistency of approach is one of the most important elements of literacy improvement. There is a crucial role within schools for coordinating effort: research, the development and application of new ideas, testing and modelling new practices, reviewing materials and making them available for other members of staff, organising teams and their meetings, making arrangements for family contact devising and implementing family support programs, maintaining an overview of progress and informing relevant bodies about performance and progress.

Socio-Economic Status and Students at Risk

There will always be 20% (or 5% or 60%) of children who are doing comparatively less well than others. But there is quite obviously a proportion of students in need of particular forms of additional assistance to cope with 'mainstream' schooling, and this figure is commonly fixed at about 20% by teachers (NSELS, 1997 p 211) and researchers alike.

There are sub-groups within the population, which require additional support. These groups are readily definable from demographic and school data and should be targeted as a first priority for extra support. Students from low socio-economic backgrounds and Indigenous backgrounds, in particular, are likely to have lower literacy levels in the primary years. The gap between the socio-economic groups widens as children progress through primary school.

By early secondary school, as the Smith Family has shown, students from families living in poverty had significantly lower literacy rates than those from wealthy families.

The effects of poverty – the prevalence of drugs, the incidence of violence and youth unemployment all impact on young people and their families. The effect this has on equality of educational outcomes is most stark when geographical distribution is taken into account. That is, children living in housing commission areas and in many rural communities are faced with the greatest concentration of 'at risk' indicators.

Given their apparent preoccupation with literacy it would be reasonable to expect that the current Federal Government would have introduced some major funding initiatives to actually increase the funding going towards literacy. In fact Tasmania continues to target funds generated by the Commonwealth on the basis of Disadvantaged Schools Program (DSP) index to schools in socio-economically disadvantaged communities. Tasmania has

continued this policy because of the overwhelming evidence that the burden of relative deprivation and social inequality depresses literacy achievement in schools serving communities where there is a high proportion of families on low incomes with low parental levels of educational achievement and qualifications and high unemployment. Any reduction in the commitment to funding to schools in such communities can only increase the risk factors facing the children they serve.

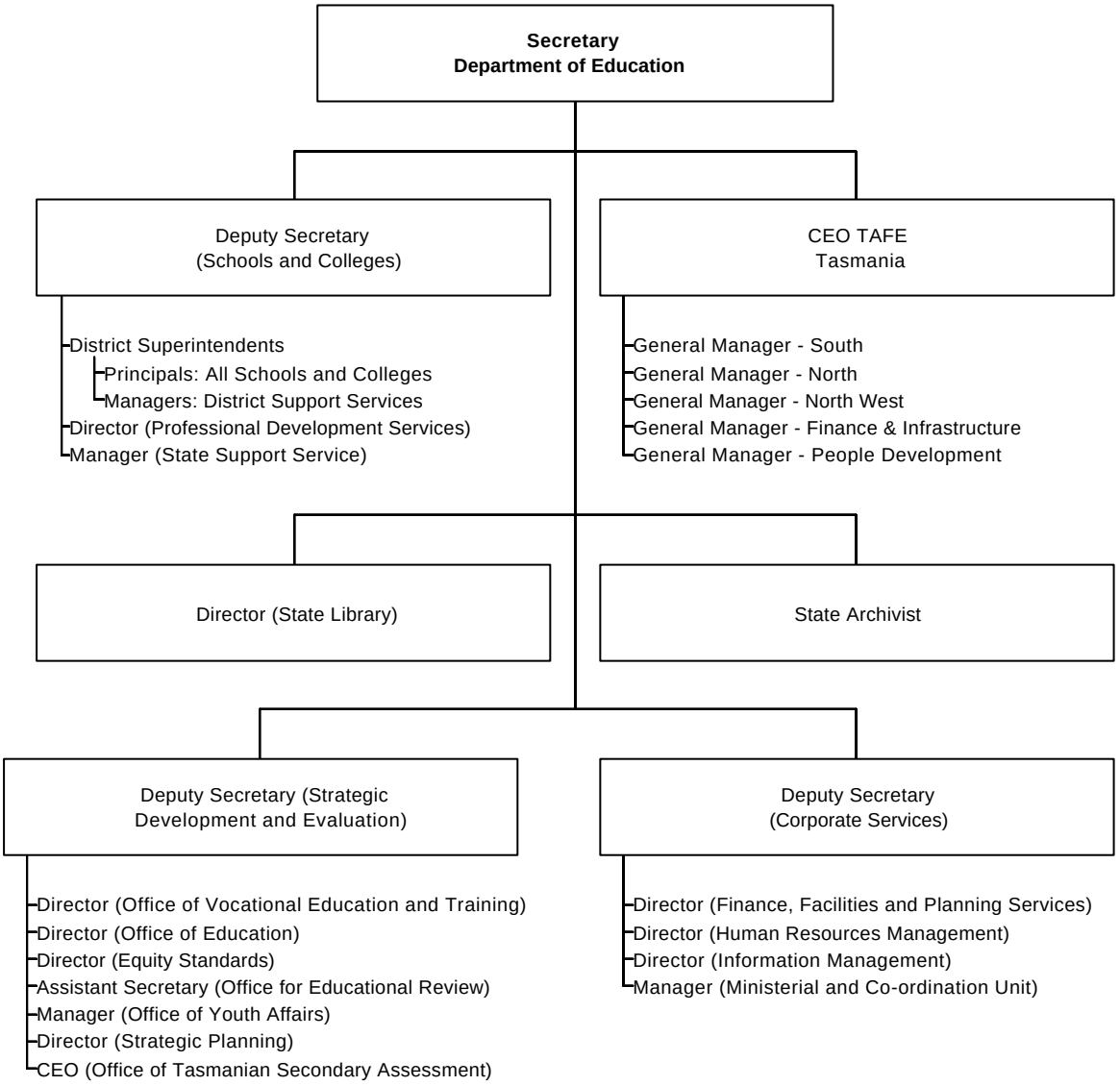
Obviously the ENI based on the 1986 census must be updated and based on more recent data. The whole social landscape has changed in this fourteen year period. Poverty in Tasmania has increased and some communities are more economically depressed than they were. ENI and STAS are only proxies for the poverty and ensuing hardships faced by families in low socio-economic areas, but we should at least get the proxy for allocating the funding right.

References

Kennedy et al. 1986. *The Effectiveness of Chapter 1 Services. Office of Educational Research and Improvement.* US Department of Education, Washington DC.

Perrone, V. 1994. *The Abuses of Standardised Testing.* Boomington, Indiana. Phi Delta Kappa Educational Foundation (PDK Fastback 92).

APPENDIX A: DEPARTMENT OF EDUCATION ORGANISATION CHART



Source DoE: Organisational Chart for the Tasmanian Department of Education.

APPENDIX B: MULTI-LEVEL ANALYSIS

Analysis of Year 3 Data

The multi-level analyses of the results of the 1998 *Statewide Monitoring Program* were conducted in terms of the following variables:

SEX	- Gender;
STAS	- Student Assistance Scheme (Measure of socioeconomic status at the student level);
ENI	- Educational Needs Index of School (Measure of educational need at the school level);
ATSI	- Aboriginal or Torres Strait Islander (Measure of Aboriginality);
READ	- Reading score (Raw reading score obtained by student); and
WRITE	- Writing score (Raw writing content score obtained by student);
NUMB	- Number score (Raw number score obtained by student);
INATTEN	- Inattentive composite score (Measure of inattentiveness of student).
LINATTEN	- Inattentive composite score in Grade 7 Literacy class;
NINATTEN	- Inattentive composite score in Grade 7 Numeracy (Mathematics) class;

A major finding as given in a draft of a summary report (OER, 1998) for the Year 3 cohort was as follows:

> The parameter estimates for SEX, STAS, ENI and ATSI are all statistically significant...Girls achieve significantly higher on READ than boys, and the estimates for STAS, ENI and ATSI indicate that they each have significant negative effects on READ. However these 'intake' variables account for a mere 11% of the variance READ (p17).

The effects of ENI (at the school level), Student Assistance Scheme (STAS, at the student level), Indigenous status and sex accounted for a total of approximately 11% of the variance in reading scores in Grade 3. This suggests that factors such as ENI, STAS and Indigenous status, by themselves, do not exert a large effect on reading performance.

Another significant finding however was as follows:

> INATTEN has a powerful 'suppressor' effect on SEX and ATSI such that they are no longer significant predictors of READ. That is, due to the interaction between SEX and INATTEN, since boys are significantly more inattentive than girls. The 'intake' variables however account for only 10% [11%] of the variance in READ, but fitting INATTEN accounts for an additional 17% (p17).

Thus when inattentiveness (as measured from the RBRI) was added to the model, it explained an additional 17% of the variance in reading scores. A similar result was found when investigating the effects of sex, Indigenous status (ATSI) and STAS on writing content:

> SEX, STAS and ENI... account for a mere 11% of the variance in WRITE, and fitting INATTEN accounts for an additional 22%... the 'suppressor' effect of INATTEN on SEX and ATSI (noted ... for READ) also applies here (p17).

When a reciprocal relationship between READ and INATTEN was modelled using the Grade 3 data, the model did not fit the data as well as it did when just the effect of INATTEN on READ was modelled. Other studies with children of Grade 3 age, however, suggest that there is indeed a bi-directional relationship between reading performance and inattentiveness.

> ... we know from large-scale, longitudinal research that students' early growth in reading skills have a strong and enduring effect on reducing their current and subsequent inattentive behaviours, and have positive impacts on their achievements in all cognitive areas of the curriculum (p21).

STAS, ENI and INATTEN (but not ATSI) were found to have significant effects on the scores in number (NUMB):

> It is clear that boys have achieved significantly higher NUMB scores than girls, and the negative effects of STAS, ENI, and especially INATTEN, are significant. However, the effect of ATSI is not significant. The proportion of variance in NUMB explained by the fitted 'intake' variables and INATTEN is 26.35% (p11).

Analysis of Year 7 Data

In general the combined effect of SEX, ENI, STAS and the Indigenous status of students accounted for a small percentage of the variance in the strands of numeracy, and for a higher proportion in strands of literacy, where the effect of sex was somewhat greater.

The effect of inattentiveness in both literacy and numeracy was especially pronounced. For example inattentiveness in mathematics classes accounted for 20.6% of the explained variance in numeracy.

> The inclusion of LINATTEN [yielded] a highly significant improvement in model data fit. It also underscores the point that if we wish to explain variation in students' literacy achievements, it is important to account for explanatory factors such as students' affective and behavioural orientations in addition to their 'intake' characteristics. Needless to say, such inclusions are vital in terms of their implications for both policy and practice (p17).

> The effect of LINATTEN is significantly negative at the student-level, but significantly positive at the class/teacher level. At the prima facie level the... findings are somewhat puzzling, but they are typical of outcomes derived from monitoring projects of the present kind – especially in the early years of secondary schooling. Indeed, this outcome is frequently the case when classes of students are under-extended, under-engaged, 'bored', and display high levels of 'acting out', externalizing behaviours in the classroom – particularly inattentiveness. The value of such external assessment/monitoring projects is that they often 'bring to light' groups of students who are capable of achieving (and do achieve) at higher levels than teachers would expect under 'normal' circumstances (p11).

> Unlike the case for LITERACY, the class average effect of NINATTEN is not significant (p11).

There were found to be reciprocal paths between READ and LINATTEN, suggesting that inattentive behaviour and reading performance affected each other simultaneously. As for Grade 3, the effect of reading on writing and on the strands of numeracy was especially pronounced.

APPENDIX C: EDUCATIONAL NEEDS INDEX

The Educational Needs Index (ENI) for a school is determined from the formula:

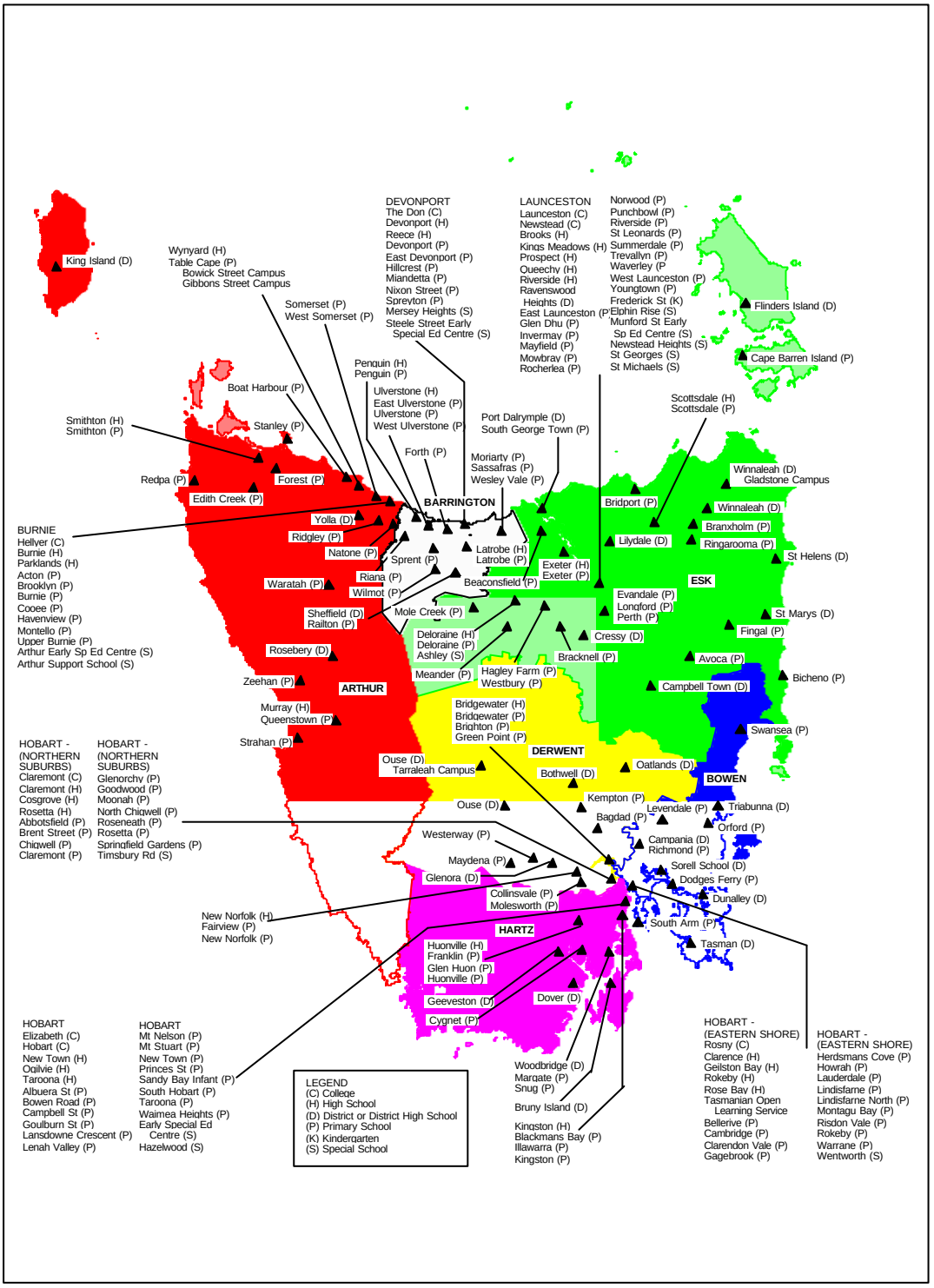
$$ENI = SES+STAS$$

The SES index ranges from 1 to about 25 and has an average of 12. It was developed by the Commonwealth Government and although the Commonwealth has ceased to use it. The last available calculation and the one that is still used by DoE is based on 1986 census data.

The STAS (Student Assistance Scheme) measure use in the index is the percentage of students in the school who received government financial assistance during the previous year. Since each student is either 'on' or 'not on' STAS, at student level the measure is considered to be relatively crude (since it is a binary and not a continuous variable.

APPENDIX D: TASMANIAN EDUCATION DISTRICTS

TASMANIA - EDUCATION DISTRICTS



Produced by Resource Planning Services, Department of Education, Hobart 19 October 1999
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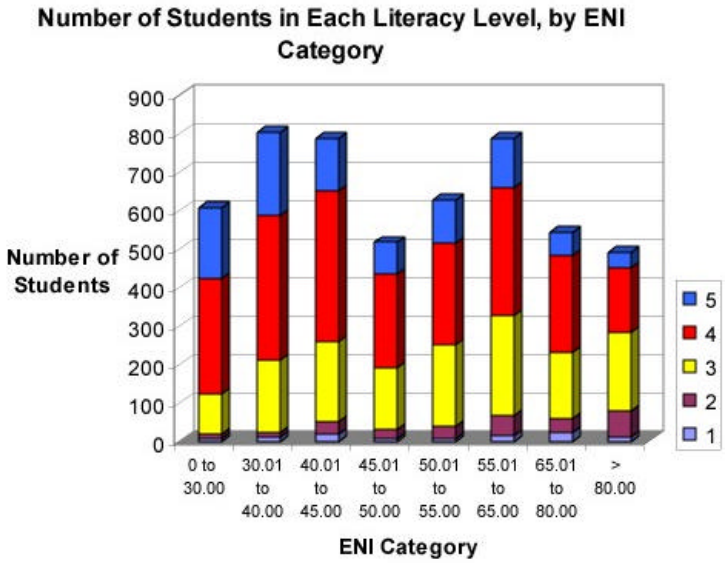
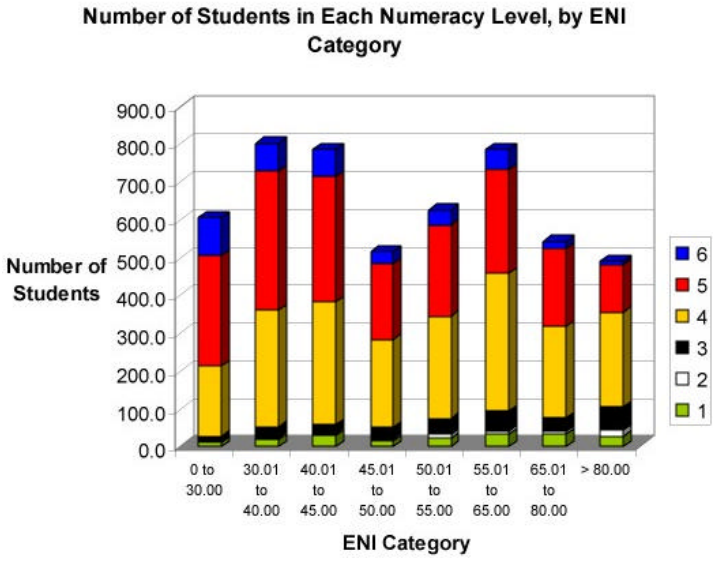
Source DoE: Tasmanian Education Districts

APPENDIX E: LOCALISED OUTCOMES PRIMARY SECTOR



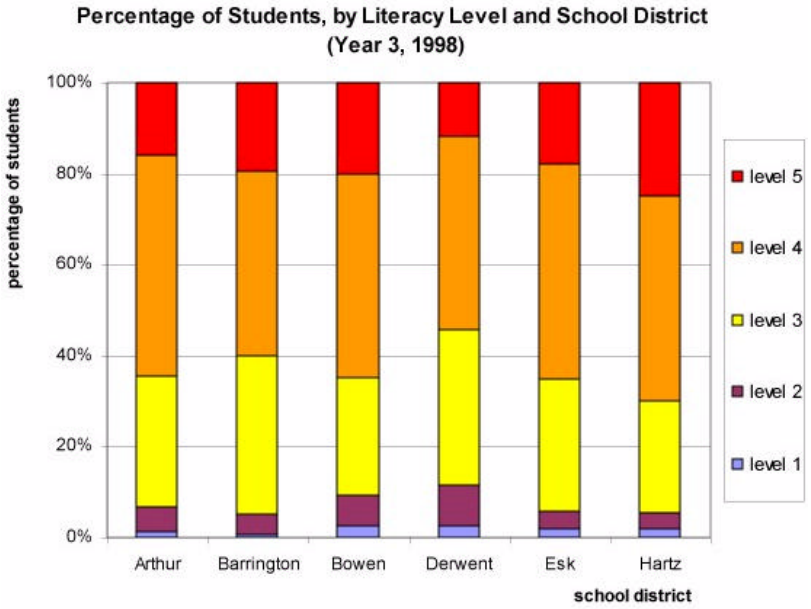
1. Insufficient information available to determine KILO level.
2. Is working towards 1-2 KILOs.
3. Has achieved 1-2 KILOs.
4. Has achieved 3-4 KILOs.
5. Has achieved 5-6 KILOs.

Source DoE: Number of Year 3 Students in Each Literacy Level by ENI Category



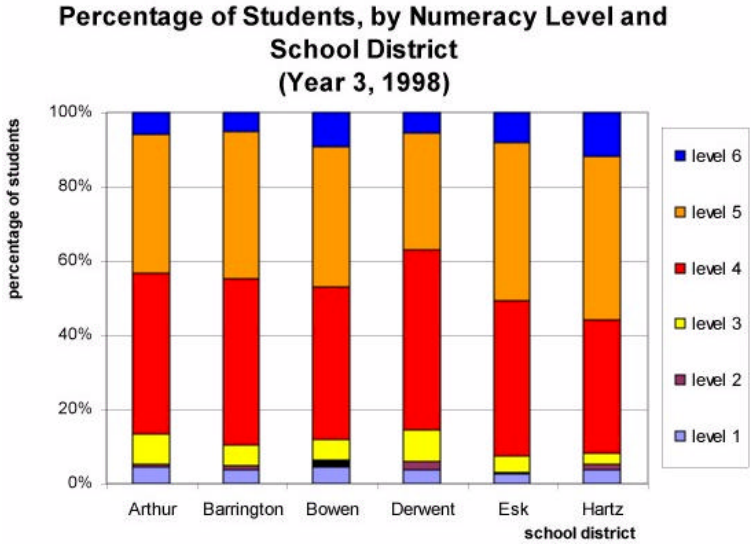
1. Not enough information to form description of this student's work
2. This student is working towards Year K-2 KINOs
3. This student has achieved Year K-2 KINOs
4. This student is working towards Year3-5 KINOs
5. This student has achieved Year 3-5 KINOs
6. This student is working towards Year 6-8 KINOs

Source DoE: Number of Year 3 Students in Each Numeracy Level by ENI Category



1. Insufficient information available to determine KILO level.
2. Is working towards 1-2 KILOs.
3. Has achieved 1-2 KILOs.
4. Has achieved 3-4 KILOs.
5. Has achieved 5-6 KILOs.

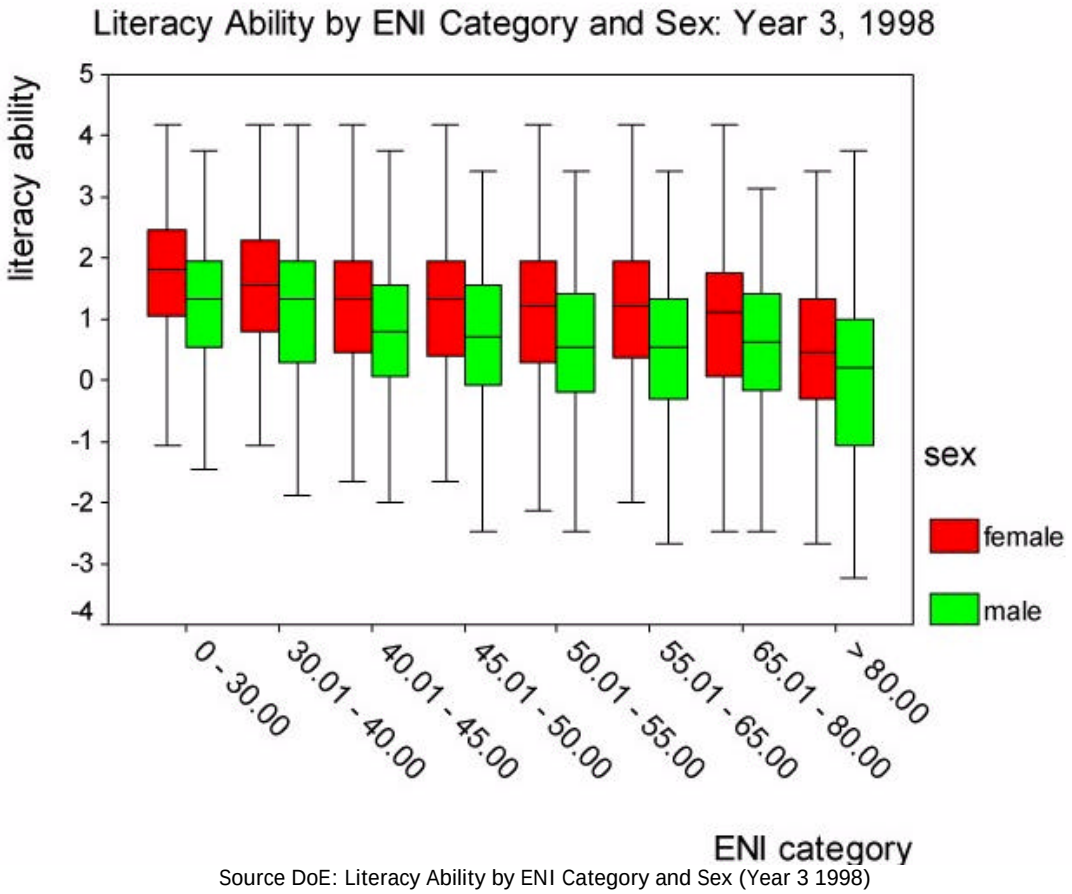
Source DoE: Percentage of Students by Literacy Level and School District (Year 3 1998)



1. Not enough information to form description of this student's work
2. This student is working towards Year K-2 KINOs
3. This student has achieved Year K-2 KINOs
4. This student is working towards Year3-5 KINOs
5. This student has achieved Year 3-5 KINOs
6. This student is working towards Year 6-8 KINOs

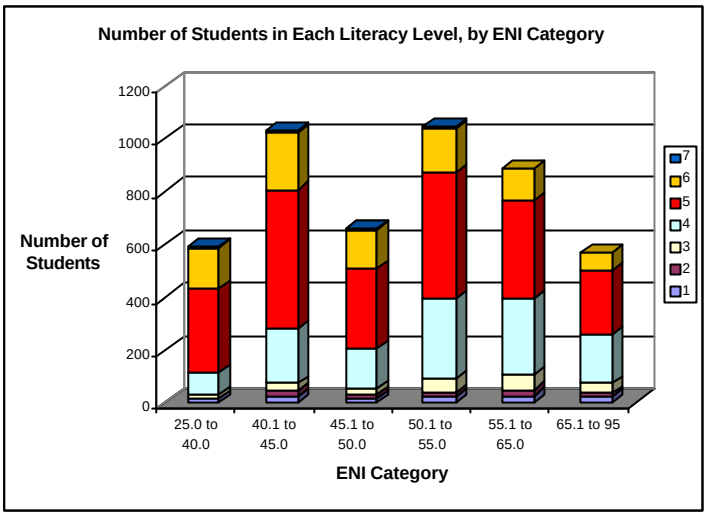
Source DoE: Percentage of Students by Numeracy Level and School District (Year 3 1998)

APPENDIX F: LITERACY ABILITY BY ENI CATEGORY AND SEX



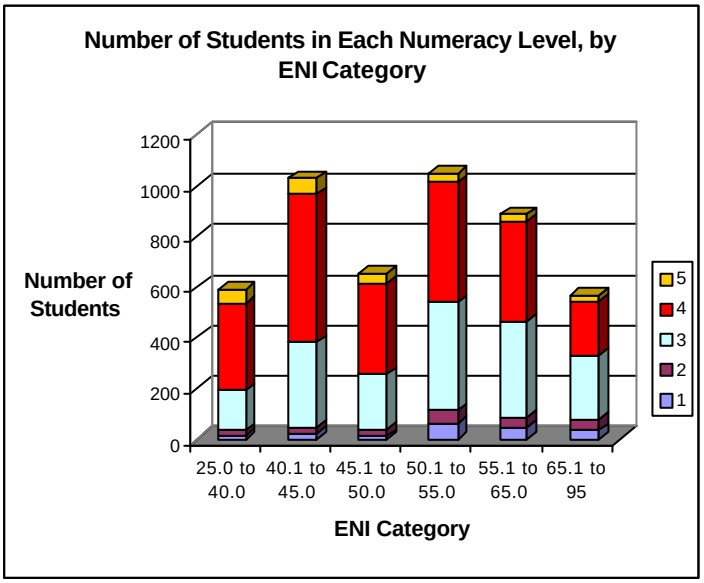
Source DoE: Literacy Ability by ENI Category and Sex (Year 3 1998)

APPENDIX G: LOCALISED OUTCOMES SECONDARY SECTOR



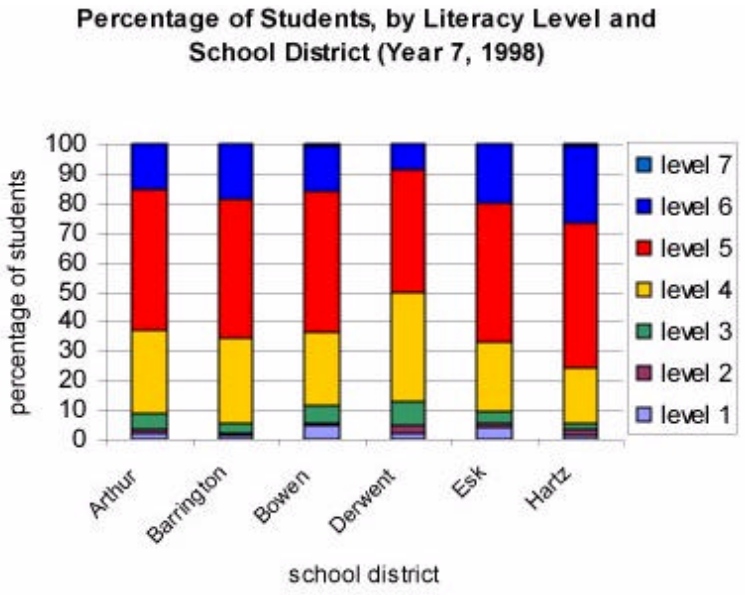
1. Insufficient information available to determine KILO level.
2. Has achieved the Kinder Prep KILOs.
3. Has achieved Years 1-2 KILOs.
4. Has achieved Years 3-4 KILOs.
5. Has achieved Years 5-6 KILOs.
6. Has achieved Years 7-8 KILOs.
7. Is working well beyond the Years 7-8 KILOs level.

Source DoE: Number of Year 7 Students in Each Literacy Level by ENI Category



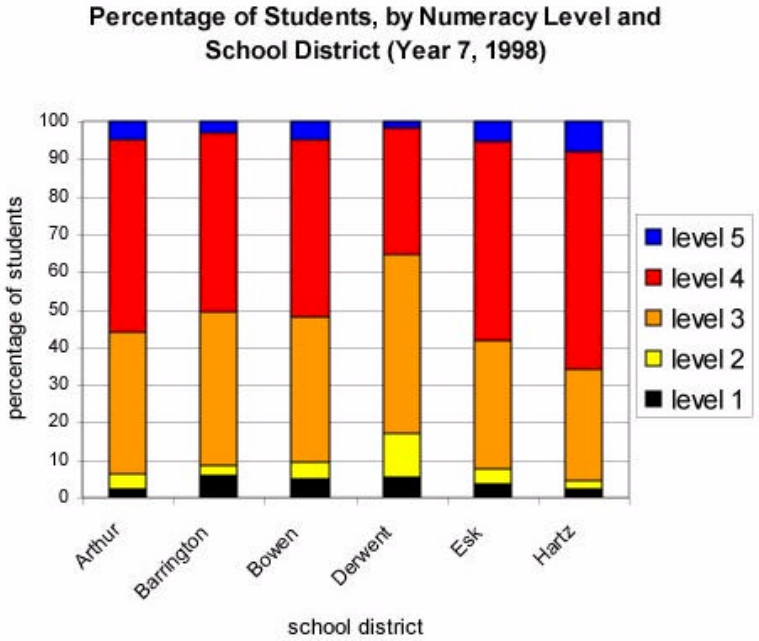
1. Not enough information to form a description of this student's work.
2. This student is working towards Year 3-5 KINOs.
3. This student has achieved Year 3-5 KINOs.
4. This student is working towards Year 6-8 KINOs.
5. This student has achieved Year 6-8 KINOs.

Source DoE: Number of Year 7 Students in Each Numeracy Level by ENI Category



1. Insufficient information available to determine KILO level.
2. Has achieved the Kinder Prep KILOs.
3. Has achieved Years 1-2 KILOs.
4. Has achieved Years 3-4 KILOs.
5. Has achieved Years 5-6 KILOs.
6. Has achieved Years 7-8 KILOs.
7. Is working well beyond the Years 7-8 KILOs level.

Source DoE: Percentage of Year 7 Students in Each Literacy Level by District



1. Not enough information to form a description of this student's work.
2. This student is working towards Year 3-5 KINOs.
3. This student has achieved Year 3-5 KINOs.
4. This student is working towards Year 6-8 KINOs.
5. This student has achieved Year 6-8 KINOs.

Source DoE: Percentage of Year 7 Students in Each Numeracy Level by District

APPENDIX H: FINN TARGETS AND RETENTION STATISTICS

The Finn Report (1991) recommended that targets be established for participation in post-compulsory education and training for young people because participation in post-compulsory education was considered low by international standards. The targets are as follows:

Target One: By 2001, 95% of 19 year olds:

- Are participating in Year 12; or
- Have completed Year 12; or
- Have completed Year 10 or 11 and are participating in some formally recognised education and training; or
- Have completed Year 10 or 11 and have completed some formally recognised education and training.

Target Two: By 2001, 60% of 22 year olds:

- Are participating in education and training programs which lead to level 3 awards; or
- Have attained level 2 qualifications; or
- Have attained above level 3 qualifications; or
- Are participating in , or have completed higher education studies such as degrees and diplomas.

The report *Post-Compulsory Education and Training of Tasmania's Youth* provides breakdowns of retention statistics for each of the post-compulsory sectors. The percentage of students aged 15-24 who participated in TAFE in Tasmania during 1997 was 13.5%, compared with an Australia wide average of 16.5%, however according to the report the rate varies with year group. Direct retention by Tasmanian government schools' to Year 11 of 72.2% in 1998 was lower than the 1996 Australian retention of 83.4%. DoE has noted that care needs to be taken in the interpretation of these statistics because they are confined to students in schools and do not take account of students who move to jobs, to TAFE or to other vocational courses.

Further the percentage of 15-24 year olds in higher education in Tasmania in 1997 was the lowest of any State at 11.4%, with the Australian average being 16.4%. For each sector the report emphasised the association between literacy and numeracy achievement and retention to further education. It also noted that while Tasmania's retention rates remain the lowest of all Australian states, the gap is narrowing. In 1988 Tasmania's retention to Year 12 was 20 percentage points below the national average and in 1997 the gap had fallen to 13.2 percentage points.

APPENDIX I: TARGETS FOR INDIGENOUS STUDENTS

Indigenous Year Group	1997 Target	1998 Target	1999 Target
Year 3 Reading	Establish baseline data and negotiate targets. • Indigenous 22/37 or 61.1% above average • Non-Indigenous 199/252 or 91.1% above average	Reduce gap between Indigenous and non-Indigenous performance to 20 percentage points.	Reduce gap to 15 percentage points.
Year 3 Writing	Establish baseline data and negotiate targets. • Indigenous 22/44 or 50% above average • Non-Indigenous 221/291 or 76% above average	Reduce gap between Indigenous and non-Indigenous performance to 20 percentage points.	Reduce gap to 15 percentage points.
Year 7 Reading	No 1997 target	Establish 1998 baseline data	Data not available
Year 7 Writing	No 1997 target	Establish 1998 baseline data	Data not available
Year 12 English	Maintain 1996 performance. • Indigenous - 44/174 or 25.3% of students who took a Year 12 English course gained an award • Non-Indigenous – 16.6% of students who took a Year 12 English course gained an award	Achieve at least the same performance on average as non-Indigenous students.	Achieve at least the same performance on average as non-Indigenous students.
Year 3 Numeracy	No 1997 Data	Establish 1998 baseline data and negotiate target for 1999	No data available
Year 7 Numeracy	No 1997 Data	Establish 1998 baseline data and negotiate target for 1999	No data available
Year 12 Mathematics	Maintain 1996 performance. • Indigenous – 101/174 or 58% of students who took a Year 12 Mathematics course gained an award • Non-Indigenous – 2870/8283 or 34.6% of students who took a Year 12 Mathematics course gained an award.	To achieve at least the same performance as non-Indigenous students.	To achieve at least the same performance as non-Indigenous students.

Source DoE: Targets for Indigenous Students (1997 to 1999)

APPENDIX J: PROGRAM ALLOCATIONS

Literacy and Numeracy Programs Primary Sector (K-6)		**Literacy and Numeracy Programs Secondary Sector (7-12) (middle school allocations for 5-8 included)**		**Total Allocations for Literacy and Numeracy Programs**
Literacy Program	**1999 Allocation $'s**	**Literacy Program**	**1999 Allocation $'s**	
Flying Start	6 636 600	Classroom Literacy Years 7 and 8	25 000	
PASS	110 000	Literacy Tutor Package Dissemination	4 350	
Kindergarten Development Check Revision	14 500	Senior Secondary Literacy Project	20 000	
Kindergarten Devlopment Check Publication and Dissemination	5 000			
Classroom Literacy Project	250 000			
Spalding Training for District Support Staff	17 800			
Spalding Train the Trainers	10 000			
Total Allocation Literacy	**7 043 900**		**49 350**	**7 093 250**
Numeracy Program	**1999 Allocation**	**Numeracy Program**	**1999 Allocation**	
Flying Start	737 400	Planning and Teaching for Numeracy in Years 7 to 9 Project	179 000	
Count Me In Too Project	130 000	Development of Numeracy Course Statement and Support Materials Project	18 000	
		Senior Secondary Numeracy Project	4 000	
Total Allocation Numeracy	**867 400**		**201 000**	**1 068 400**
Total	**7 911 300**	**Total**	**$250,350**	**8 161 650**

APPENDIX K: PROGRAM EVALUATIONS FOR NON-INDIGENOUS STUDENTS

Literacy Program	Evaluation Yes/No	Type of Evaluation (Quantitative, Semi-Quantitative, Qualitative)	Program Description	Findings and Comments
Flying Start	Yes	Quantitative	Flying Start is an early intervention initiative in literacy, numeracy and social skills.	The draft report of a quantitative evaluation found that there was no improvement in average reading performance from 1997 to 1998 in either Grade 1 or Grade 2.
PASS	Yes	Quantitative	This program targets teachers of years prep to year 2 in 22 schools with a high proportion of students educationally disadvantaged in terms of their literacy outcomes.	An interim quantitative evaluation was completed in 1998 and the final evaluation is due for completion next year. The interim evaluation found that students in both the PASS and control schools performed on average at a higher level than expected for their actual age as judged by the recent 1996 US norms..
Classroom Literacy 3-6	No		This program provides intensive short courses for teachers of Years 3-6 in schools with a high proportion of students educationally disadvantaged in terms of their literacy outcomes.	The proposed evaluation of teacher use is postponed until 2000. Evaluation will be linked to focussed action research based in the 3 key schools.
Spalding Training	Yes	Semi-Quantitative	During 1999 three support staff from each district undertook training in the Spalding method for teaching writing and reading.	From the quantitative and qualitative evaluation conducted it appeared that there were clear benefits for most students from participation in the Spalding program. While Spalding appeared to bring benefits the report noted though that many other factors may have contributed to this positive outcome.
Literacy Tutor Package Dissemination	No		The Literacy Tutor Program developed within the Bowen Support Service was to be disseminated to all high schools and colleges.	-
Classroom Literacy Years 7 and 8	No		This is an interim project aimed at developing baseline information about cross-learning areas literacy in high schools in Years 7 and 8.	
Senior Secondary Literacy Project	No		Six teachers from two senior secondary colleges are being trained in the Spalding method of teaching reading and writing.	

Numeracy Program	Evaluation Yes/No	Type of Evaluation (Quantitative, Semi-Quantitative, Qualitative)	Program Description	Findings and Comments
Flying Start	Yes	Quantitiative	Flying Start is an early intervention initiative in literacy, numeracy and social skills.	The draft report of a quantitative evaluation found that there was no improvement in average performance in numeracy from 1997 to 1998 in either Grade 1 or Grade 2.
Count Me In Too	Yes	Quantitative	Twenty-eight schools around the State are participating in the pilot project. The program is designed to offer teachers opportunities to gain insights into children's thinking in early number.	Not available until February 2000.
Planning and Teaching for Numeracy in Years 7 to 9 Project	Yes	Qualitative	This DETYA funded project has the primary goal of improving the numeracy outcomes of low achieving Year 7 to 9 students in Tasmanian schools.	Not available until February 2000.
Senior Secondary Literacy Project	No		This project is the continuation of a network of college numeracy leaders with the purpose of developing a coordinated approach to, and discussion about, numeracy in the senior secondary years.	

APPENDIX L: PROGRAM EVALUATIONS FOR INDIGENOUS STUDENTS

Literacy or Numeracy Program for Indigenous students	Evaluation Yes/No	Type of Evaluation (Quantitative, Semi-Quantitative, Qualitative)	Program Description	Findings and Comments
The Aboriginal Literacy Program in Early Childhood	Yes	Quantitative	The program provided an Aboriginal Education Worker (AEW) to Prep-Year 2 for schools with a high proportion of Aboriginal students. Work was conducted with students and their families for 12.5 hours per week.	Not available until February 2000.
Improving Numeracy for Indigenous Students in Secondary Schools	Yes	Quantitative	Teachers and AEWs from 20 schools have been involved in an action research project in 1999, involving attendance at spaced professional learning sessions to: • Develop cross cultural awareness; • Develop inclusive classroom practice; • Trial practical and relevant teaching materials; • Accommodate a range of learning styles; • Encourage collaborative inquiry among students; • Trial innovative assessment and reporting procedures; • Record and review classroom and workshop practice using video.	The gains for Aboriginal students were double those of the non-Aboriginal students-38% overall, compared to around 19%.
Cross Cultural Awareness	Yes	Qualitative Self Evaluation	Provision of Cross Cultural training through one day workshops run by Aboriginal consultant.	Report on findings not available.
Changing Places	Yes	Proposed Qualitative Quantitative Evaluation for Year 2000	The purpose of a school improvement program that targets the improved proficiency of Indigenous students in selected primary and district high schools is to: • Decrease the gap in achievement between Indigenous and non-Indigenous students; • Improve proficiency in literacy and numeracy of students in the target group; • Ensure that Indigenous students have access to and participate in a full, relevant and challenging curriculum; and • Develop programs that affirm Indigenous student identity, self value and capacity to succeed.	

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