Supplementary Notes for *Tasmania's Education Performance Report 2007*

Part 1. The scope of the measures

Why these measures?

These measures include all the educationally significant data items for which the department collects valid and reliable data. They represent the broad range of measures of educational performance that jurisdictions seek to improve. Over time, these have proved to be reliable measures that are measured in ways consistent with other states and territories and reference national and international research. Because they have been collected for a number of years there is evidence that the measures are responsive to change, enabling the department to identify areas of concern or progress.

Why aren't other measures included, such as suspensions?

Other measures are not included because they are either unavailable statewide on a recurrent basis, not as valid, or not as reliable. Student suspension measures, for example, are affected not only by student behaviour, but by the enforcement of disciplinary sanctions by principals: hence this measure is monitored, but not directly linked to Tasmania's educational performance. Over time, suspension measures have not been found to correlate as strongly and consistently with outcome measures as other data.

Reading has been chosen as the dominant measure of literacy, rather than writing, because it is a more reliable measure and is a stronger predictor of overall success in literacy. This is supported by international studies.

Which measures are more straightforward?

Measures are reported as transparently as possible, however in some cases there are important technical considerations included in the measure. Here are some examples.

- Attendance rates are readily understandable as the proportion of students or staff attending daily through the year; technicalities only arise when considering rarer issues, such as students who leave the system without notification, determining when their enrolment ceases.

- Percentages of students achieving expected outcomes are readily understandable. There are, however, technical issues in determining these percentages, such as how students are being assessed in relation to the expected outcomes, and how the concept of expected outcome is defined, which itself is not trivial to determine for broad outcomes such as literacy and numeracy.

- Indexes of satisfaction or equity are not straightforward measures. There are some considerations.. Satisfaction indexes treat survey responses across a range of questions, and use responses where the scale of agreement has involved a matter of degree, such as strongly disagree through to strongly agree. Similarly complex is the index of equity which involves measuring both student achievement and socioeconomic status based on separate data that must be matched to the student, and then computing indexes via a statistical method of regression analysis.

Will the measures be reviewed and if so when?

Yes, annually. The 15 measures reported for 2007 will be supplemented by two additional measures based on data from the National Assessment Program. Over time, it may be necessary to add new agreed measures to the priority areas which may supersede existing measures. If new measures become available that are reliable

and valid, these will be additional to the current report. Retention is an area that needs attention because current measures are limited.

Part 2. Data about specific measures as reported

What is being done to address areas of issue and concern?

- Areas of issue and concern have been acknowledged through ongoing monitoring over recent years and actions are in place to address them.

- Retention is being addressed through significant reforms to pathway planning for students and post-compulsory options, such as the *Qualifications and Skills for* Tasmania *Tomorrow* project. These reforms are also aimed at improving student engagement and thus student attendance rates.

- Parent satisfaction, particularly with reporting, led to a reporting taskforce during 2007. Consequential reporting changes in 2008, combined with curriculum reform, are changes which are expected to improve parent satisfaction during coming years.

- Socioeconomic equity is a goal for improvement and monitoring throughout Australia and the world, and has no simple fix. The strategies to address this issue are many and varied, ranging from policy decisions in the funding of government schools according to need, through to more far-reaching whole-of-government and community solutions, such as addressing access to adult education, focusing on infant health and using social services to support student readiness for school in the early years and beyond.

Why are values so different across regions or compared to the state?

- The values reflect the performance differences over time and between regions with different contexts. For example, retention achievement is low in three of the four regions, but in one of these cases the 2007 data suggests improvement from recent years.

Why are values considered acceptable when the achievement is low?

- These data are published primarily for improvement purposes, therefore 'trend up' is acknowledged positively.

- The reporting of both achievement and improvement categories is intended to support accountability and also recognition of successes, by way of acknowledging both the achievement in relation to absolute targets to reach, as well as monitoring evidence of improvement and sustaining achievement.

Why are values so different across measures that appear to be similar?

- The measures themselves are mostly quite different. The examples below illustrate this.

    - In the Early Years, the percentage of Kindergarten students achieving expected outcomes (about 75%) is based on teacher assessment across a set of 21 criteria including cognitive, physical, and social domains. Even though individual criteria are often achieved by 90-95% of students, this measure is about the percentage of students who achieve all of the 21 critical markers. In contrast, the percentage of Prep students achieving expected outcomes (about 82%) is reported against more focussed assessments of early literacy and early numeracy.

    - Satisfaction measures for staff, parents, and students are based on different sets of issues appropriate to their stakes in education. One cannot assume similar response patterns from these different groups, which is why each is surveyed, and is why reference to broader national data for each is required to assist interpretation of each value as being high, low or intermediate.

Part 3. Data about specific schools

Why is this type of reporting better than a league table and why not list schools in rank order?

Tasmania's Education Performance Report 2007 reports data on 15 measures at a state and regional level, and two further measures will become available next year. There is no single overall evaluation across all measures. When considering ordering schools, one must question which of the measures is to be used. Some measures, such as Early Years' outcomes, are not applicable to all schools. In some cases, schools may have excellent student outcomes with low satisfaction, or the reverse.

Data are intended to serve the purpose of school improvement – not used to stigmatise or label particular schools. Different schools in different communities must address slightly different issues. In particular, schools in areas of socioeconomic disadvantage are often adding significant value, which may not be apparent in simplistic league tables.

A second phase of performance reporting will be released later in 2008 and will enable individual schools to share their performance data with their community. The format for school performance data has not yet been finalised. Apart from the issue of various schools only having a subset of these measures to report on, the issue of performance measure expectations for schools in diverse contexts has not been finalised.

What about parent choices?

A second phase of performance reporting will be released later in 2008 and will enable individual schools to share their performance data with their community. Parents making choices about the right school for their

child consider these performance data within a much broader range of factors about school and personal circumstance that are not possible in these performance reports, such as geographic location from home, existing friendship networks, and specific school programs or facilities.

Part 4. Measurement issues in evaluation

How are the achievement ranges defined to determine achievement?

The intermediate ranges have been determined by referencing against national data where they are available. In some cases where complete national data are unavailable, related data have been used to estimate a national value.

The intermediate ranges have been defined by considering the spread or deviation of the data available, including Tasmanian data over time. In addition, where the available data have been estimated or has a less established historical base, slightly wider boundaries have been provided due to the reduced precision.

How are the improvement categories determined?

Improvements are determined based on the set of values available from 2004 to 2007. In determining improvement categories, improvement estimates (or trends) are calculated by balancing both short-term change, such as 2006 to 2007, with longer-term change, such as 2004 to 2007. In some cases, an exceptional high or low value in 2006 would yield quite different improvement estimates according to whether one took a short-term or long-term view of change. In other instances, older data, such as 2004, do not reflect the real changes that might currently be happening. In determining the right balance, slope estimates from regression line are determined for 2004–2007, 2005–2007, and 2006–2007, and then averaged: this effectively gives slightly greater balance to short-term change, moderated against longer-term change.

Once the improvement estimates have been determined, a judgement is made regarding how slight changes, such as 0.5% per year, may be to be considered as "stable", "trend up", or "trend down". This decision differs for each measure, depending upon a review of the stability of the measure over time, a review of the stability of the trend estimates, and degree of precision in the available data.

Will the achievement ranges and improvement estimates be reviewed and if so when?

Only if national data not currently available comes to hand or, if in later years, new improvement targets need to be set.

Part 5. Referencing External Data for Determining Boundaries

Readiness for school: Percentage of Kindergarten students achieving expected outcomes

- These data are referenced to Tasmanian historical data, as this assessment instrument was developed in Tasmania.

- Further information, including the assessment instrument and support materials for teaching to address various criteria, is available from http://www.education.tas.gov.au/school/educators/curriculum/kindergartencheck

- In the national context, a broader assessment of social indicators is currently being considered for national implementation, the Australian Early Development Index (AEDI),

http://www.rch.org.au/australianedi/index.cfm?doc_id=6210 Depending on its validity and reliability as well as its application to measuring educational performance, the AEDI may be added to the performance report in later years.

Early literacy and numeracy: Percentage of Prep students achieving expected outcome

- The Performance Indicators in Primary Schools (PIPS) test was developed at Durham University in the UK, where it is widely used. It is used in several Australian states and territories, with administration in Australia licensed via Murdoch University. http://www.education.murdoch.edu.au/pips/

- Students' results are scored for reading from 0–193, and for mathematics from 0–69. Tasmania has historically reported to schools each year the percentages of students one standard deviation below the state mean score, that is generally the lowest 17–18% of student results statewide. For a system-report, however, this would not monitor change over time – the achievement value each year would be constant around 82%. A review of the data led to determining this approximate level of the expected outcomes to be a set score of 66 for reading, and a score of 41 for mathematics, set irrespective of calendar year. The intermediate range of 81–83 was informed by Tasmanian history 2004–2006 with 82% achieving outcomes at or above these set scores.

- There are no known published data concerning PIPS performance across Australia in a comparative form using these set scores. Yet to be published research reports indicate, from sample data reported along a logit scale (a technical measure of average students performance), that Tasmanian performance is at or slightly above the average score of other states using the PIPS assessment. These preliminary data could have been used to propose a lower national reference estimate, such as 81 with intermediate range 80–82, however the range of 81–83 is used to set a high yet realistic expectation.

Literacy and numeracy testing: Index of gain for Years 3–5, 5–7, 7–9

- These gains are improvement in test scores over two-year intervals. Each state has its own scale for scoring; hence no national data are available.

- The measure averages gains from Years 3–5, 5–7 and 7–9. In general, gains on this measurement scale appear greater from Years 3-5 than from Years 5–7 or from Years 7–9. The estimates may also be affected by selective absenteeism of students in one test: these students' results are excluded from analysis as they have no measure of gain available.

- National testing in 2008 has replaced various previous testing programs in each state, not all of which included Year 9 students. Comparable data is published, however, on the percentage of students achieving benchmarks in Years 3, 5 and 7. The most recent benchmark data (2006) is available from http://cms.curriculum.edu.au/anr2006/ . A review of Tasmanian performance in 2006 and recent years suggests that, in general, reading at Years 3 and 5 is comparable with or slightly above the nation, but at Year 7 is slightly below the nation, whereas in numeracy, performance in most years is quite similar to the national figures. In estimating a national reference range, these findings have been used to suggest that in reading, the gains from Year 3 to 7 might be slightly lower than a national estimate, whereas in numeracy, the gains are similar. No evidence is available to inform estimates of Year 7 to 9 gain nationally. Hence, in the absence of a specific national value, the range of 20–25, sets a high yet realistic expectation without overstating Tasmania's outcomes in a national context.

Student attendance: Rate of student attendance

- Complete national data are yet to be published, however some states have published performance data related to student absence rates.

- VIC: http://www.eduweb.vic.gov.au/edulibrary/public/govrel/reports/07doe-2-rpt.pdf

- NSW: https://www.det.nsw.edu.au/media/downloads/reports_stats/annual_reports/yr2007/ar07statscomp.pdf

- These attendance rates have informed the intermediate range of 91–93. In general, Tasmanian data have undergone processes not employed by some states, such as adjustments for school closures on selected days. This adjustment has the effect of decreasing the Tasmanian attendance rates.

Student retention: Rate of students retained Year 10 to Year 12 (apparent/direct)

- National data are published each year for apparent retention rates on Australian Bureau of Statistics site Schools Australia. http://www.abs.gov.au/Ausstats/abs@.nsf/lookupMF/1E44BCDEF87BCA2FCA2568A9001393E7

- In general, Tasmanian apparent retention rates have been about 5% below the national reference for government schools (~70), and 10% below the national reference for all schools (~75). The intermediate range (70–80) has used the higher value as the target for Tasmania.

- The methodology used for apparent retention nationally cannot be used at the individual school level in Tasmania because of Tasmania's college system, where students do not stay at the same high school until the end of year 12. Direct retention rates are therefore used for the regional summary and these are not published nationally. Tasmanian historical data are 45–49, however this report has used the known 10% difference to the national apparent retention rate to set the intermediate range (55–59) at a higher value as the target for Tasmania.

School effectiveness: Index of school effectiveness and improvement

- These data are referenced to Tasmanian data in 2006, as this measure was developed in Tasmania.

- The index is an aggregation of a range of available measures used to indicate aspects of school effectiveness and improvement. It is a complex measure set on a scale of 0–100. A score of 100 would indicate that all schools had generally improved and performed at expected levels.

- The intermediate range has been set higher than the 2006 figure, however, to set a challenging yet realistic target range for future years.

Staff satisfaction: Index of staff general satisfaction

- All staff are invited to respond to an online survey of Organisational Health, developed by an independent contractor, InsightSRC, which is used in education workplaces as well as broader government and private sectors around Australia. The survey includes various modules measuring aspects such as motivation, empathy, clarity, engagement, appraisal and recognition, job satisfaction, curriculum coordination, student orientation, and excessive work demands.

- The measure of staff satisfaction is an index across the set of questions asked, known as the staff climate index. The scale reported is from 0–10 – the original scale was 0–100, however because the measure is NOT a percentage of staff satisfied, but an index of the average degree to which they are satisfied, the reported value is rescaled from 0-10 to avoid confusion.

- National benchmark data for Australian education P-12 are published in graphic form within reports issued to all schools, prepared by InsightSRC.

Parent satisfaction: Percentage of parents generally satisfied

- The parent satisfaction survey is used with the permission of the Victorian Government.

- National benchmark data for Australian education P–12 are published in graphic form within reports issued to all schools, prepared by InsightSRC. The values indicate the average degree to which they are satisfied. Tasmanian data in 2007 are slightly below the national value.

- The percentage reported in *Tasmania's Education Performance Report 2007* does not use the scale of average degree to which they are satisfied, but is based upon the percentages of parents who reported general satisfaction for a single summary question of overall satisfaction. This has been used to ensure continuity with department annual reports in recent years 2003–2005 and ensures continuity into the future, based on the question that is the same each year, despite changes to the set of questions on the parent survey over years.

Parent satisfaction: Index of parent satisfaction with reporting

- The parent satisfaction survey is used with the permission of the Victorian Government.

- National benchmark data for Australian education P–12 are published in graphic form within reports issued to all schools, prepared by InsightSRC. The values indicate the average degree to which parents are satisfied. Tasmanian data in 2007are slightly below the national value.

- The Index reported in *Tasmania's Education Performance Report 2007* does not use the scale of average degree to which they are satisfied, but is based upon the percentages of parents who reported general satisfaction with reporting across three questions. This has been used to ensure continuity with department annual reports in recent years 2003–2005.
  http://www.education.tas.gov.au/dept/reports/annual

Student satisfaction: Index of student general satisfaction

- The student satisfaction survey is used with the permission of the Victorian Government.

- Students Year 5 and above, randomly selected from each school and college, respond to an online survey, developed for the Victorian Government, which is used in other schools around Australia. The survey includes various modules measuring aspects such as morale, aspects of teaching and learning, and student relationships.

- National benchmark data for Australian education P–12 are published in graphic form within reports on a scale of 0–100 to all schools, prepared by InsightSRC.

- The measure of student satisfaction is an index across the set of questions related to teaching and

learning, known as the student climate index. The scale reported is from 0–10 – the original scale was 0–100, however, because the measure is NOT a percentage of students satisfied, but an index of the average degree to which they are satisfied; the reported value is rescaled as 0–10 to avoid confusion.

Staff attendance: Rate of staff attendance

- A recent report on the Australian public service served as the basis for national referencing. http://www.apsc.gov.au/stateoftheservice/0607/downloads.htm

- This report found an average value of 9.4 days absent per annum. If one estimates approximately 241 working days as expected per annum, accounting for weekends, public holidays and annual recreation leave, the absence estimate is 9.4/241 = 3.9%, hence a national attendance estimate of 96.1%.

Indigenous equity: Percentage gap in students achieving expected outcomes

- The percentages of students achieving reading and numeracy benchmarks in Years 3, 5 and 7 are reported nationally for all students and for Indigenous students. The most recent benchmark data (2006) is available from http://cms.curriculum.edu.au/anr2006/. The gaps between all students and Indigenous students were averaged for the national data to provide a reference range of approximately 20%. Tasmanian data in that report include both government and non-government schools.

- In *Tasmania's Education Performance Report-2007*, Tasmanian government school data are prepared using a simple "head count" method for proportions of Indigenous students versus non-Indigenous students achieving benchmarks. *Statistical note*: This methodology yields numbers slightly different to the more sophisticated "plausible-values" method reported nationally for all students and for Indigenous students; however the differential effect on Indigenous versus non-Indigenous students, that is the gap reported here for Tasmania, is likely to be even slighter.

Socioeconomic equity: Index of equity of achievement by socioeconomic status

- The Program of International Student Achievement (PISA), is an international education project, with significant involvement of the Australian Council for Educational Research (ACER). Further information about PISA, including Australian major findings, is available from www.acer.edu.au/.

- One published outcome for 2006 is that socioeconomic inequity, as measured by the slope of the regression line (the effect of socioeconomic status on student performance in scientific literacy), is greater in Tasmania than for the nation. Additional correspondence from ACER has indicated very similar findings for reading literacy in 2006, with some variations in 2003 and 2000. The degree of this difference is that the Tasmania slope is approximately 1.2 times that of the nation. These findings are based on data from about 800 fifteen year old students across Tasmanian Government and non-government schools.

- Tasmanian data measuring slope is based on approximately 18,000 students across Years 3, 5, 7 and 9 for both reading and numeracy performance. Socioeconomic status, for each student has been based on the highest educational level reported by the parents of the student, grouped into four levels from categories collected nationally. This results in a slope of approximately 10.6 test score points (on the Tasmanian scale; close to 1 year of schooling) per additional level of parental education. To align the national evidence to this scale, 10.6/1.2 yields approximately 9, hence the national range, 8–10.