

## TASMANIAN EDUCATION TODAY: DIGGING AROUND IN THE DATA

### Summary

School education in Tasmania has not enjoyed good press in the last few years, with claims about the State's lower NAPLAN and PISA results, and stories that our adult population is struggling with literacy and numeracy. We consider a range of relevant data which shows that Tasmanian schools and students are just about keeping up with their interstate counterparts to the end of compulsory schooling at year 10, but problems emerge after that – problems which must be solved if Tasmania is to provide opportunities for our people commensurate with the rest of Australia and comparable nations.

### Let's look at some data

Whoever said that there are lies, damned lies and statistics, certainly hit a nerve. So let's start by agreeing that not everything that is important about education is captured by statistics.

Perhaps not even what is **most** important. We want every young person to leave school optimistic about their future, with the knowledge and skills to make a meaningful contribution to their community and keen to keep developing their abilities beyond what they might have thought to be their potential. There is no obvious statistic for that; and we might also say that a young person's achieving this desirable state is not up to their school alone. So even if we had a statistic for the fundamental purpose of schooling (as expressed above), it would not be a statistic about education alone.

But let's think about that a bit more. For many young people, the big influences on their development are their potential (however this is formed), their family, their peer group, the media (most especially for many, the social media) and their schools. In the past, we might have added their church, youth group, sporting association and so on, all promoting some vision of the good person and community, and encouraging youngsters along that path. These organized social institutions shared with schools the responsibility for educating the next generation. But these more organised kinds of social institutions are no longer part of the lives of many young people today.

So of the things that shape the development of young people today, their school is the only way the community makes a considered and evaluated contribution to the formation of most of its future citizens.

**Put that another way: today, schooling is the only way a community can organize to lift itself up.**

Which makes it vitally important we know a lot about our schools (and other educational institutions), so that we might value the good things they are achieving as well as understand where the system, and an individual school, needs to do things differently to achieve the overall goal of education.

There is a wealth of information on schooling available to the community. The MySchool web site (<http://www.myschool.edu.au>) provides data for each school, particularly from the NAPLAN tests, reporting the average performance of students at various year levels. And to get a wider perspective, data about whole schooling systems, state by state, is published by the Australian Curriculum and Reporting Authority (ACARA), using various sources

including the census and other Australian Bureau of Statistics (ABS) surveys. State and territory education departments and authorities like the Tasmanian Qualifications Authority (TQA) also publish useful data.

In the remainder of this note we provide a selection of these statistics, together with some commentary about what we can really learn from different data. We hope this will help avoid the lies and damned lies, while still providing fresh action-guiding insights into Tasmania's education today, for all of us who think that enhancing levels of educational attainment across Tasmania is the key to our future.

### **Students' Basic Skills and Knowledge**

Literacy and numeracy skills are fundamental to living a happy and productive life in our community, so we rightly take performance in this area as a primary indicator of the progress of an individual student, a whole class, a whole school, and indeed a whole schooling system. Australia uses the National Assessment Program – Literacy and Numeracy (NAPLAN) tests for this purpose. Some argue that the NAPLAN tests are not **reliable** – that is, if an individual student sat the test a number of times they would get different results – and also that the tests are not **valid** – that is, they do not measure the underlying ability which determines whether people have mastered reading, writing and mathematics. Whether these criticisms are justified is a matter to be settled by experts in test design, through comparing NAPLAN results with other similar tests; and the discussion of this properly takes place in the relevant expert journals. Here we intend to accept that the NAPLAN tests, designed and reported by ACARA, are both valid and reliable, especially when used to look at whole of state/territory results where problems with reliability (which would lead equally to higher and lower individual scores) are not an issue.

There is another kind of criticism of the NAPLAN tests that we take much more seriously. If we place too much importance on the NAPLAN or any other test result, using them as the dominant measure of student learning, teacher performance or school quality, they will come to dominate what happens in class – they will elbow other things out of the curriculum. We do not want that, as it puts at risk all the other learning that contributes to the overall goal of education – that our school graduates should be optimistic, broadly knowledgeable and skilled, capable of applying their learning to ever changing circumstances and of continuing to learn throughout their lives, and keen to contribute to their community. A curriculum focused on tests would be like a sports coach who endlessly focuses on skill drills, and never lets the team actually play and enjoy their sport. Narrow, boring and in the end pointless: because there is not a lot of point in having a skill if you don't enjoy and look for opportunities to use it.

There is some evidence that NAPLAN testing is having just this damaging result in schools. But that is not a problem with the tests themselves. NAPLAN data can be used as a diagnostic tool to determine where additional resources might best be allocated within and between schools. However, as soon as the test results are used as measures of the performance of individual teachers or of whole schools, it is inevitable that the NAPLAN tests become at least 'first among equals' in competing for time and resources in the classroom. In our view the responsibility for such an outcome lies with educational leaders, from ministers down not being clear about and effectively communicating to the community what are the appropriate uses of the tests, and how misuse can harm education, as reflected in the very design of the MySchool web site. And it has to be said that they have not been assisted in this task by simplistic reporting in the media, which has encouraged the

community to focus on this one source of data about student achievement, as if this could tell the whole story of good schooling.

But if we look at the NAPLAN tests just to give us comparative snap-shots of students' basic skills and no more, and we look elsewhere for other important indicators of the success of our schools, then we get useful information and avoid the lies and damned lies.

Here is an overview of the latest NAPLAN data for Tasmania, taken from the 2013 tests of students in years 3, 5, 7 and 9. The table shows the order of the states' and territories' results in each area tested for each year level. Where a state's or territory's result is statistically significantly different from Tasmania's – that is, the difference is so great it is concluded that the difference could not be due to chance – the names of these states or territories are printed in bold type. Thus in each set of results, Tasmania can be seen to be not too different to the other states and territories with names printed in ordinary type (and indeed, even the statistically significant gaps are not that great as we will see later). If we worry about the individual differences that are not statistically significant, we might well be jumping at shadows- although, we would be much more confident about saying that if Tasmania was more than half of the time at the top of the 'middle group', not at or near the bottom

**Note:** all tables given here are included in appendix. Full references to original sources are provided below each table to enable readers to look further into the statistics for themselves.

Table 1: 2013 NAPLAN TEST RESULTS IN ORDER OF STATE/TERRITORY MEAN

Year level	Reading	Persuasive Writing	Spelling	Grammar and Punctuation	Numeracy
Year 3 [61]	<b>ACT, VIC,</b> NSW, TAS, SA, QLD, WA, <b>NT</b>	<b>VIC, NSW,</b> <b>ACT,</b> QLD, WA, TAS, SA, <b>NT</b>	<b>NSW, VIC,</b> <b>ACT,</b> SA, WA, QLD, TAS, <b>NT</b>	<b>ACT, VIC,</b> <b>NSW,</b> QLD, TAS, WA, SA, <b>NT</b>	<b>ACT, VIC,</b> NSW, TAS, WA, QLD, SA, <b>NT</b>
Year 5 [125]	<b>ACT, VIC,</b> NSW, QLD, TAS, WA, SA, <b>NT</b>	<b>VIC, ACT,</b> <b>NSW,</b> WA, QLD, TAS, SA, <b>NT</b>	<b>NSW, VIC,</b> <b>ACT,</b> WA, QLD, SA, TAS, <b>NT</b>	<b>ACT, NSW,</b> <b>VIC,</b> WA, QLD, SA, TAS, <b>NT</b>	<b>ACT, NSW,</b> <b>VIC,</b> QLD, WA, TAS, SA, <b>NT</b>
Year 7 [189]	<b>ACT, VIC,</b> NSW, WA, SA, TAS, QLD, <b>NT</b>	<b>ACT, VIC,</b> NSW, WA, SA, QLD, TAS, <b>NT</b>	<b>NSW, ACT,</b> <b>VIC,</b> WA, SA, QLD, TAS, <b>NT</b>	<b>ACT, NSW,</b> <b>VIC,</b> WA, QLD, SA, TAS, <b>NT</b>	<b>ACT, NSW,</b> <b>VIC,</b> WA, QLD, SA, TAS, <b>NT</b>
Year 9 [253]	<b>ACT, VIC,</b> NSW, WA, SA, TAS, QLD, <b>NT</b>	<b>ACT, VIC,</b> WA, NSW, SA, QLD, TAS, <b>NT</b>	<b>NSW, ACT,</b> <b>VIC,</b> WA, <b>QLD,</b> SA, TAS, <b>NT</b>	<b>ACT, NSW,</b> <b>VIC,</b> WA, SA, QLD, TAS, <b>NT</b>	<b>ACT, NSW,</b> <b>VIC,</b> WA, QLD, SA, TAS, <b>NT</b>

Source: <http://www.nap.edu.au/results-and-reports/national-reports.html>

NAPLAN 2013 National Report PDF.

The relevant page for each year level data is given in [square brackets] below the year level. All references in the discussion of NAPLAN below are to this document, with page numbers again given in square brackets.

### **What do we learn from this?**

First we must note that parental level of education and occupation both have a strong influence on all NAPLAN results. For example, if you look at the table in the *NAPLAN 2013 National Report* which shows the percentage of students in each state and territory at the various levels of reading performance in year 3, students in Tasmania are doing about as well as students in the ACT if we compare students from like families in relation to parental education [10] and parental occupation [12]. So even though Tasmania's position does not look so good in the table above that compares states' and territories' results, we guess we are about where our level of parental education and occupation would place us compared to anywhere else in Australia. A careful statistical analysis of the data might reveal more – for example, comparing students from like families the ACT seems to be doing a bit better by year 9, particularly for students from poorer backgrounds [202, 204, 246, 248] - but just eyeballing the tables for student performance by parental characteristics suggests that Tasmanian students are doing about as well in our schools as students with similar family backgrounds are doing in their schools in the rest of Australia. (Or perhaps we should say are doing 'not much worse', since we must acknowledge again that our scores being at the bottom of the middle group of states whose scores are not statistically significantly different in 11 out of 20 comparisons does need some explanation). And while SA in particular, the state that is most like Tasmania in relation to parental characteristics, scores above Tasmania in almost two thirds of these tests, there is no test result at any year level where the difference between Tasmania and SA is statistically significant.

Compared to what the press might have led us to expect, this is pretty good news. Thanks to their schooling to year 9, our young people have the basic skills that are required for further schooling to much the same extent as like students elsewhere in Australia.

But it also rings an alarm bell.

The performance of students whose parents have a high level of education or professional employment is much higher than that of students whose parents have not completed year 11 or are out of work (respectively, the 'highest' and 'lowest' classification in the NAPLAN report). Just looking at year 3 reading for Tasmania, 46% of students who have at least one parent with a bachelor's degree or above are in the highest achievement band; but only 8.6% of students whose parents have year 11 or below as their highest level of education are in the highest achievement band. Conversely, only 0.6% of students with a parent in the highest education category are in the lowest achievement band, while 9.5% of students whose parents are in the lowest education category are in the lowest achievement band. [9] This wide equity gap is also seen if the measure of family advantage is parental occupation. [12]

For Tasmania as a whole, therefore, since relatively fewer of our adults have qualifications even at year 10 (as we discuss below), and our level of unemployment and low-skill employment is higher than elsewhere, the equity gap in the NAPLAN tests reveals the challenge schools face in competing with our interstate counterparts in the NAPLAN league – as we acknowledged above.

But more importantly, unless the NAPLAN tests are very badly designed and implemented, we can expect that there is a strong correlation between the knowledge and skills required to score well in the test and the knowledge and skills demanded by employers, and indeed what is required for living happy, successful and competent adult lives. Hence the equity

gap in the NAPLAN tests also reveals the challenge schools face in providing our community with a workforce with the basic skills to secure our future development, let alone a community which has the literacy and numeracy capabilities to make the best of opportunities for healthy and fulfilling lives.

Thus the strongest lesson we can draw from all the NAPLAN testing is that there is a cycle here in Tasmania of inter-generational lower educational performance and poverty. The good news is that the cycle can be broken. If we look again at the NAPLAN data three paragraphs above, we see that 8.6% of Tasmanian children – almost one in ten – whose parents are in the lowest educational attainment classification were in the top achievement band for year 3 reading. The data tells us that parental characteristics and related family circumstances are a **powerful influence** but not an **absolute determinant** of student performance. Moreover, we know that there are examples of schools where students do much better than might be expected from the relatively low levels of wealth and educational backgrounds of their parents and community – for a US example see an analysis of factors which contribute to high performance in high poverty schools.

(<http://www.centerforpubliceducation.org/Main-Menu/Organizing-a-school/High-performing-high-poverty-schools-At-a-glance-/High-performing-high-poverty-schools-Research-review.html>). Or in Tasmania, look at the improvement in literacy and numeracy of the beginning students who have participated in the Launching into Learning Program (see <https://www.education.tas.gov.au/documentcentre/Documents/DoE-Annual-Report-2012-2013.pdf>). And across the OECD, longitudinal analysis of country-by-country PISA data (which we discuss below) shows that a determined whole-systems-level focus of educational policy and practice, aimed at improving outcomes for those who have previously struggled, can and does make a difference to the size of the educational equity gap. (See paper no. 25 *Are countries moving to more equitable education systems?* at <http://www.oecd.org/pisa/pisainfocus/#d.en.199059>)

So we learn from NAPLAN at the state level that our performance is not too far behind where the powerful influences of family and community circumstances might place us. But, more importantly, we must also acknowledge that it is possible for our schools to buck these trends, transforming lives and communities rather than reproducing in young people's lives the hardships of their parents. (And that, after all, is really what education is all about.)

NAPLAN is a testing regime internal to Australia. In addition to this, Australia participates in a number of international testing programs. The best known is the Program for International Student Assessment (PISA) of the OECD, which tests 15-year-old students' capacities to apply their mathematics, science and reading skills, focusing on problem solving and reasoning capacity rather than factual knowledge. Australia's results have been summarised by the Australian Council for Educational Research (ACER) and are available here. <http://www.acer.edu.au/ozpisa/pisa2012> All page references [in square brackets] are to the full report, *PISA 2012: How Australia measures up*.

There are three things we need to consider before comparing Tasmanian students' results with those of students throughout the rest of Australia and from other countries: the number of years of schooling which Tasmanians have completed at age 15; their socio-economic status; and their geographical location. The importance of these three things is as follows:

1. In Australia (and in other countries), students in different jurisdictions begin their education at different ages, and thus have had the benefit of more or less years of schooling at age 15. Australian students who took the PISA tests were mostly year 10s in all states except QLD and WA where half (or more in WA) were in year 11. In contrast, Tasmania (30%) and Victoria (21%) had the greatest percentage of students in year 9 [8]. Since we would expect test scores to be correlated with years at school rather than age, this leads us to expect – as we find – that Tasmania’s scores will be lower than those of other states, with the smallest years-of-schooling-explained gap between Tasmania and Victoria.
2. In all of mathematics, science and reading, students in the highest socioeconomic quartile are two and a half years ahead of those in the lowest socioeconomic quartile [38], [147], [187].
3. PISA classifies most Tasmanian schools as provincial or remote. For Australia as whole, compared to their fellows in the major metropolises, students in provincial schools are almost three quarters of a year behind in mathematics, and those in remote schools a full two years behind [35]. In science, students in provincial schools are about half a year behind metropolitan students, while those in remote schools are a full year and a half behind [145]; and in reading the gaps are about one and two years respectively [184].

Compared to their interstate counterparts (other than in the NT), Tasmanian students are younger, poorer, and are more likely to attend schools outside the metropolitan areas. On these grounds alone, the unequal nature of Australian schooling will cause their PISA scores to be lower.

This is indeed what we find. In mathematics, the mean performance of Tasmanian students is (statistically significantly) below all of the other states, the ACT and the OECD average, while (statistically significantly) above the NT [30]. In science we are again (statistically significantly) below the other states and the ACT, but there is no statistically significant difference between Tasmania and the NT or the OECD average [140]. Finally, our results in reading are the same as for mathematics [179]. This is presented in table form in the second appendix.

We might say that our disappointing results can be explained away by the differences in the age, poverty and relative remoteness of our students, but (putting age to one side) as with our NAPLAN results this is really to miss the point. For while we might say that, given the way our schools are currently resourced and organised, our relatively low performance in the PISA is a **consequence** of poverty and the location of students outside the major cities, an education which does not equip our young people with the knowledge and skills to keep up with their fellows elsewhere in Australia and in other countries will also be a **cause** of future poverty and all of the other undesirable correlates of low educational attainment.

That there is a cycle of (social) cause and (educational) effect here is obvious. The question is where that cycle can be broken – and education is clearly our best chance. Indeed, as the OECD paper *Are countries moving to more equitable education systems?* shows, improvements in educational equity can be achieved at the same time as improvements in overall performance, and in a relatively short time, with many of the countries with the greatest equity in student achievements also amongst the top PISA performers overall - evidence that social and economic disadvantage is not, automatically and unavoidably, educational destiny. (This is further discussed in the note in the first appendix)

## Students' engagement and achievement

But do our young people in Tasmania have the capacity to benefit more from education? There is no point in flogging a dead horse, and not much in flogging a tired one, or even one not bred for the task we are flogging it to perform. How do we know our Tasmanian students can achieve more?

The evidence is in the data we have just considered.

Take NAPLAN first. There is no test at any of the year levels where Tasmanian students' results are (statistically significantly) different from students in SA; and only one where QLD and three where WA significantly outscore us. Clearly, if NAPLAN measures the skills students need to succeed at school (as it is designed to do), then our students' capacity for education is not so different from those in these other states. But if we look at comparative data for the completion of year 12 (or what is currently accepted nationally as the equivalent, a VET qualification at least at Certificate 11 level), Tasmania's education system is lagging behind: **our students are capable of more education than they are receiving.**

Table 3: Performance against COAG target for year 12 completion

	% completing year 12 or equivalent in 2011
NSW	83.5
VIC	86.1
QLD	83.0
SA	84.0
WA	83.8
TAS	78.2
NT	72.8
ACT	90.1
AUST	84.1

Source:

[http://www.acara.edu.au/reporting/national\\_report\\_on\\_schooling\\_2011/national\\_report\\_on\\_schooling\\_2\\_1.html](http://www.acara.edu.au/reporting/national_report_on_schooling_2011/national_report_on_schooling_2_1.html), *Additional Statistics PDF*, table 29. Data is from the ABS Survey of Education and Work.

The situation is similar with PISA. Tasmania's performance compared to countries with the same or just lower scores than us (by mean score on each test) is given in the following 'league table'.

Table 4: countries scoring equally or immediately lower than Tasmania in PISA 2012

Mathematics	Science	Reading
Sweden	France	Croatia
Hungary	Denmark	Sweden
Croatia	United States	Iceland
Israel	Spain	Slovenia

Source: *PISA 2012: How Australia measures up* Mathematics data from [30] and [24]; Science from [140] and [135]; Reading from [179] and [173].

If PISA is any guide, Tasmanian students should be able to benefit from at least as many years of education as their counterparts in these countries, which they matched or outscored in PISA.

Here is the data from the OECD on high school graduation rates and years of education, for the countries in the table above (with the exception of Croatia, which participates in PISA but is not a member of the OECD).

Table 5: OECD data on percentage of 25-34 year olds with the equivalent of a high school diploma, and expected average years of education, as at 2011

Country	% of 25-34 yr olds with high school diploma	Expected years of education
Australia	84%	18.8
Denmark	80%	19.2
France	83%	16.5
Hungary	87%	17.5
Iceland	75%	19.5
Israel	90%	15.7
Slovenia	94%	18.3
Spain	65%	17.6
Sweden	91%	19.2
US	89%	17.1

Source: <http://www.oecdbetterlifeindex.org/topics/education/>  
 Scroll down to *Education in Detail* for each country.

We do not have data for Tasmania from the OECD, but it appears that they are using the same data as ACARA, which we gave above. So we can say that on this measure, Tasmania's rate of young people completing a 'high school diploma' would be 78%. At that rate, we would be below all the countries in the table above except Iceland and Spain, in relation to our rate of young people completing year 12 or the equivalent (assuming all the 'high school diplomas' are comparable awards, in the interests of getting an international snapshot). Furthermore, since only about 30% of year 10s in Tasmania go on to get a Tertiary Entrance Rank (TER), it seems that young people here are, on average, very unlikely to have the benefit of as many years of education as the countries listed above, or in the rest of Australia (apart from the NT).

([https://www.tqa.tas.gov.au/4DCGI/\\_WWW\\_doc/184278/RND01/Post\\_year\\_10\\_Stats\\_Annual\\_Report\\_extract\\_2013.pdf](https://www.tqa.tas.gov.au/4DCGI/_WWW_doc/184278/RND01/Post_year_10_Stats_Annual_Report_extract_2013.pdf). See Table 4.)

But none of the countries in table 5 outscored Tasmania in PISA. So clearly, even on this data, Tasmanian students are capable of more education than they are getting at the moment: the issue here cannot be lack of ability, so it must be lack of opportunities appropriate to the situations of the young people presently missing out on education beyond the compulsory years.

And the reality is likely rather worse than tables 3 and 5 suggest. A bit of further analysis is provided here in the interests of avoiding the statistics telling us (comforting) lies.

The data on year 12 completions for Tasmania and Australia, used by ACARA and the OECD, comes from the census or **survey data**. As such, this data can only be as accurate as respondents' understanding of the questions they are being asked, and there is also the usual error margin for surveys that are samples from the whole population. ACARA says that to be 95% confident that we know the true figure for Tasmania's year 12 or equivalent



completion rate in 2011, we have to say that it is somewhere in the interval 78.2% plus or minus 5.9%. (See reference to Table 3 above)

Better data comes from the official record of students **actually awarded** a certificate of secondary school completion - in Tasmania the TQA provides this data. (We have found it hard to find directly comparable data for other states and territories.)

The TQA data for actual student achievement shows that in 2013, 39.8% of the students who had been in grade 10 in 2010 had achieved the Tasmanian Certificate of Education (TCE). <http://www.tqa.tas.gov.au/1782>. (See Direct Continuation Rates 2007-2012, updated March 25, 2013) The same table shows that 16.7% of those year 10s had completed a VET certificate (at an unspecified level), but since VET study can be included in the TCE it is not clear whether these are distinct groups such that we could add the two figures and say 56.5% of Tasmanian students who were in year 10 in 2010 had achieved year 12 or (assuming all the VET certificates were at level 11 or above) the equivalent by 2013. But let's err on the side of generosity by assuming that we can, and take 56.5% as the real figure.

How should we view this? We do not have exactly the same data for another state or territory in Australia for direct comparison, but Victoria publishes a similar statistic for completion of year 12 or the equivalent, presumably because of concern about relying on the ABS survey data. This says that in 2011, 82.5% of 19-year-old Victorians had completed their year 12 Victorian Certificate of Education (VCE) or a VET certificate 11 or higher. (See *Summary Statistics for Victorian Schools*, Table 18(a), <http://www.education.vic.gov.au/Documents/about/department/statsvicschbrochure.pdf>)

In the data above we have seen that Victorian students generally outscore those in Tasmania, and we have observed that a large part of this difference is associated with our relative poverty and low level of qualifications in the adult population. But if it is true that 82.5% of young Victorians are completing year 12 or its VET equivalent, while only 56.5% of young Tasmanians are achieving the same goal, this is a far greater gap than we have seen in NAPLAN or PISA and cannot be 'explained away' in the same fashion. For example, table 6 below shows that the difference in year 9 mean scores in the NAPLAN tests between the ACT and Victoria is not much greater than the difference between the scores of Victoria and Tasmania. So there is no explanation here for a difference of almost 30% between Tasmania and Victoria in the completion of year 12 or the equivalent.

Table 6 NAPLAN 2013, Selected state/territory year 9 mean scores, and % difference between ACT/VIC and VIC/TAS means.

	Read- ing	DIFF	Writ- ing	DIFF	Spell- ing	DIFF	Gram -mar	DIFF	Num- eracy	DIFF
ACT	599.5		569.9		589.0		593.7		596.9	
VIC	584.6	98%	564.0	99%	582.5	99%	577.2	97%	588.4	99%
TAS	575.8	98%	541.2	96%	565.0	97%	560.5	97%	565.5	96%

Source <http://www.nap.edu.au/results-and-reports/national-reports.html>  
*NAPLAN 2013 National Report PDF*, pages 253 – 254.

Perhaps the 30% gap in the achievement of year 12 or its nationally accepted equivalent is not a true figure; it might be less, or indeed more – we are not comparing exactly the same statistics as we explained. But we can get what appears to be a direct comparison from the US using data from the reputable organisation Editorial Projects in Education. This shows

that 75% of public education students in the US gained their high school diploma in the same year, 2013. Of course we can now wonder whether US educational standards are on average higher or lower than ours, which would make this an unfair comparison one way or the other. But in Editorial Projects' words, **diplomas count**. See [http://www.edweek.org/media/diplomascount2013\\_release.pdf](http://www.edweek.org/media/diplomascount2013_release.pdf)

So once again we see that while Tasmanian students are no less capable than others – in this case, actually outscoring US students in PISA – our young people gain their high school certificate – the TCE - at a much lower rate than their counterparts elsewhere, notably at not much more than half the rate of US public school students.

### **Is this a recent problem?**

The data above shows that while Tasmanian students are within cooe of the achievement of those in other Australian states and territories and are doing as well as students in other countries up to about the end of compulsory schooling, a major gap opens up after that. It remains to consider whether this is a long-standing problem, which might then be reasonably attributed to 'the way we do things here', or rather is due to recent changes.

We do not have historical data that is directly comparable to NAPLAN or PISA, but nonetheless we have evidence that the problem with educational underachievement is not of recent making.

Tasmania recently received unfavourable – and unfair – press following the October 2013 release of the latest results from the Program for International Assessment of Adult Competencies. This purported to show that 49% of Tasmanian adults had problems with literacy, and 59% had problems with numeracy. As the lowest performing state or territory on this test, this was not good news for Tasmania, but the statistics were at least misleading in the way they were reported. In fact while Tasmania was behind Australia as a whole, our results were only a few percentage points below, with the ABS reporting that there was little difference between the results for the Australian states and territories, with the exception of the ACT residents having higher levels of numeracy.

(<http://www.abs.gov.au/ausstats/abs@.nsf/%20Lookup/4228.0main+features992011-2012>)

Moreover, all of the media frenzy that accompanied the release of this data missed perhaps the most important points. Like the NAPLAN tests, scores are very closely related to socioeconomic status, educational level, and age, with skills among young people higher than older age groups. With an older and poorer population, this would account for much of the gap between Tasmania's results and those of the other states and territories, as a good report by the ACER has shown. (<http://rd.acer.edu.au/article/adult-literacy-and-numeracy-whats-the-story>)

But the most important conclusion to draw from the design of these literacy and numeracy tests and the difficulties so many adults have with them across the nation, is just how fast the demands on our literacy and numeracy skills are growing in response to the increasing complexity of modern life. This is the real lesson, as the OECD report on the Adult Competencies tests makes clear. (<http://skills.oecd.org/skillsoutlook.html>) And it leads to the inescapable conclusion that an education that might have seemed good enough in the past will today exclude students from full participation in adult life in the future.

Which is a particular problem for Tasmania because we are a community in which relatively low levels of educational attainment have been the norm, as the following table shows.

Table 7: Percentage of population who left school at year 10 or below, or did not attend school, by area of residence.

AREA	% of people with no qualification higher than year 10	Index of Relative Socio-economic disadvantage
<i>Non-metropolitan NT</i>	<i>52.4</i>	<i>786</i>
<i>Non-metropolitan Tas</i>	<i>50.3</i>	<i>945</i>
<i>Rest of NSW</i>	<i>45.9</i>	<i>961</i>
<i>Rest of QLD</i>	<i>43.8</i>	<i>967</i>
<i>Non-metropolitan WA</i>	<i>40.2</i>	<i>982</i>
<i>Hobart</i>	<i>39.3</i>	<i>983</i>
<i>Rest of VIC</i>	<i>36.6</i>	<i>980</i>
<i>Non-metropolitan SA</i>	<i>35.4</i>	<i>962</i>
<i>Sydney/ Newcastle/ Wollongong</i>	<i>34.5</i>	<i>1007</i>
<i>Brisbane/ Gold Coast/ Sunshine Coast/ Townsville</i>	<i>33.4</i>	<i>1017</i>
<i>Darwin</i>	<i>31.3</i>	<i>1030</i>
<i>Perth</i>	<i>30.1</i>	<i>1036</i>
<i>Adelaide</i>	<i>27.7</i>	<i>991</i>
<i>Melbourne/ Geelong</i>	<i>27.0</i>	<i>1018</i>
<i>Canberra</i>	<i>23.8</i>	<i>1076</i>

Excerpted from <http://www.adelaide.edu.au/phidu/maps-data/archive/sha-aust/>, the *Social Health Atlas of Australia – Data released: May, August and October 2013*. This data is derived from the 2011 Census. Data downloaded by LGA. See the Tab for Education, and the column for Early School Leavers – People who left school at Year 10 or below, or did not go to school, 2011

This data should really surprise us!

Without forgetting the caveat we gave above for census data, it shows that if you live in Tasmania outside the Hobart metropolitan area, your chance of having a qualification above year 10 is less than if you lived anywhere else in Australia, with the exception of the Northern Territory outside Darwin. (Of course this applies to Tasmania outside Hobart as a whole, not to each part of the State, just as it applies to the NT outside Darwin as a whole, not to each part of the NT.) More surprising, the citizens of Hobart have less chance of having a qualification above year 10 than the residents of every other collection of metropolitan areas in Australia, and **less even than the residents of country SA and country Victoria**.

And while there is clearly a relationship between socio-economic status and educational attainment evident in this table, the relationship is not that strong (and much weaker than we saw for NAPLAN and PISA above – which may suggest that poverty is a more powerful influence on educational attainment now than in the past: a melancholy fact if true). The comparison with SA, the next poorest state to Tasmania, is particularly instructive. People in Hobart are wealthier than those in the SA countryside (21 more SES index points – 23% of

the difference between Canberra, the richest metropolis, and Hobart, the poorest) but nevertheless Hobartians are 4% less likely to have a qualification above year 10 than country South Australians; while those in Adelaide are just 8 SES index points wealthier than their Hobart cousins, but have an 11.6% - better than one in ten - chance of being better educated.

Clearly, whatever are the problems with education in Tasmania, they are not recent perturbations in a system working well in days gone by.

### **Reasons to be optimistic about the future**

NAPLAN tells us that the achievements of our schools in teaching the basic skills up to the junior secondary years (as defined in the rest of Australia) are not very different to those of schools in the other states, when we take account of the relative poverty of our communities and the fact that our schools do not benefit from being in one of the nation's major cities.

PISA tells us that the learning abilities of young Tasmanians are not much different from the youth they will meet backpacking from all over the world, here or on their own overseas adventure. Relative to their schools' level of socio-economic disadvantage and distance from major cities, our young people hold their own with their fellows in many countries we probably think of as more committed to education - such as Sweden, Denmark, Israel or even the (greatly differing states of the) US.

But all this is about how well our education system is working to the age of compulsion. After that, in the senior secondary years of 11 and 12, Tasmania takes its own path with (almost) all students in state schools required to move to a new school to complete their school education, and most (approaching two thirds, according to the TQA data for TCE completion) of our young people falling by the wayside.

Surely the reason for this is clear. In all of the other states and territories (excepting the ACT which is so small it is more like a single city), almost all public schools end at year 12, except in Tasmania where most end at year 10. To **go beyond** year 10, Tasmanian public school students must make an active choice, perhaps leaving their family and their community, and often going in a different direction to most of their peers. In most other schools in Australia, to **leave** after year 10, students must make an active choice, against the tide of their peers flowing on into years 11 and 12. (And in the ACT, the smallest, wealthiest and best-educated jurisdiction in Australia, the tide flows from year 10 to college. The ACT is so different in size and economy that its education system cannot be compared to Tasmania's, no more than our transport systems can be. If the ACT and Tasmania banned cars and everyone had to ride a bike to work or school, not much would change in the ACT but Tasmania would grind to a halt.)

The table below makes the consequence of this very clear, showing that the apparent retention rate from year 10 to year 11 in Tasmania is **below that of all of the other states and territories**, including the Northern Territory (save for 2012).

Table 8. Apparent retention rates by single year (grade) range

Range	Year	NSW	Vic	QLD	SA	WA	<b>TAS</b>	NT	ACT	Aust
Year	2009	84.6	94.5	93.1	100.5	97.1	<b>76.1</b>	83.1	102.5	91.4
10-11	2010	87.8	93.8	93.7	102.6	95.5	<b>76.4</b>	88.5	103.0	92.4
	2011	87.5	93.4	92.7	101.7	96.4	<b>80.9</b>	82.1	103.0	92.1
	2012	87.7	94.4	93.9	102.7	97.8	<b>85.1</b>	81.7	105.8	93.0
	2013	89.6	94.4	95.3	103.6	104.1	<b>83.2</b>	87.8	107.0	94.3

Source:

<http://www.education.vic.gov.au/Documents/about/departments/statsvicschbrochure.pdf>

Note that where the apparent retention is greater than 100% this is probably due to students from outside the state, mainly international students, enrolling at year 11, as well as adults returning to study - e.g. in SA see <http://www.sa.gov.au/topics/education-skills-and-learning/schools/choosing-a-school/mature-age-students>.

Luckily this structural separation between years 10 and 11 in Tasmania advantages very few, disadvantages many, and should be easy to change to bring our education system and its outcomes for young people, in line with the rest of Australia and the other countries with which we want to compare ourselves.

We only need to recognise that:

1. Until the end of compulsion, Tasmanian schools and Tasmanian families are doing almost as well as those in most other states in terms of educational outcomes for our younger students;
2. The evidence shows that our young people are no less capable of benefitting from completing their school education than those elsewhere in Australia and across the world;
3. The completion of 12 years of schooling is the right of every young Tasmanian, the key not only to their own future happy, successful and productive adult lives but also to the well-being and development of their communities, and ultimately of the State as a whole. (In view of that we might say that completing 12 years of schooling is a responsibility shared by the student, parents, school and community, as well as a right);
4. The opportunity to complete 12 years of schooling must be made real for every student in Tasmania, in every part of the State, without them having to turn their lives upside down.

So, what do you think should be done?

Eleanor Ramsay and Michael Rowan

Adjunct Professors, Division of Deputy Vice Chancellor (Students and Education)

University of Tasmania

June 2014

*With our thanks to those who provided comments on earlier drafts, and in particular Reg Allen, the Chief Executive Officer of the Tasmanian Qualifications Authority, for advice on our statistical analyses.*

*Please send any concerns about factual accuracy, and other comments or criticisms to:*

<http://www.educationambassadors.org.au>

## APPENDIX 1

### Does social and geographic disadvantage determine educational destiny?

When this paper compares Tasmania students' educational outcomes with those of students elsewhere whose social and geographic characteristics are similar, it is not suggesting that students' socio-economic disadvantage or remote location are **determinants** of their educational **abilities**. Rather, that while such circumstances of students' lives currently do have an impact on their educational opportunities, and hence outcomes, they are entirely unrelated to their individual capacities and potential.

In an ideal world with the perfect educational system, such social and geographic factors should have little, in fact no, influence on students' educational achievements. But this is currently not the case as we see when educational retention and achievement are mapped against such demographic factors, not only here in Tasmania but in the rest of Australia and indeed internationally. That being so, it is both reasonable and informative to compare the educational outcomes for our Tasmanian students with those of students living in similar socio-economic and geographic circumstances elsewhere in the country.

However, the real challenge, the big public policy and educational systems' level challenge, is how to achieve greater equality of educational opportunity and outcomes, **despite** the circumstances of students' lives which might otherwise disadvantage them. Such demographic characteristics are not of course irrelevant to educational opportunity. But the key to breaking the current nexus between educational disadvantage, on the one hand, and lower socio-economic and more remote geographic location, on the other, is to identify and address the implications of students' circumstances for educational policy, delivery and practice.

And PISA's country-by-country longitudinal data proves that this can be done, with some countries closing their equity gap much more successfully than others. For example, Albania, Chile, Germany and Latvia have not only improved their national reading performance but also reduced the equity gap in their students' results. And countries below the OECD average in terms of national wealth were amongst those achieving the highest results. The OECD drew the following conclusions, all relevant to us here in Tasmania, from a comparative analysis of performance during more than a decade of PISA testing:

- (1) National school systems vary in the degree to which they allow socio-economic differences to translate into differences in performance;
- (2) This shows that obstacles posed by students' disadvantaged social backgrounds **can** be overcome, that is, students' social background need not and, in fact, should not determine their educational destiny;
- (3) Educational policy and practice **do** make a difference in terms of equalizing educational opportunities and outcomes,
- (4) And indeed, if students' socio-economic disadvantage and geographic location deprive them of opportunities that other students enjoy, then these need to be provided by the school system;
- (5) Finally, strong performers and successful reformers in education share some key characteristics: a belief in the potential of **all** their students, strong political will, and the capacity of all stakeholders to make sustained and concerted efforts towards improvement.

(See Pisa in Focus N°34 [Who are the strong performers and successful reformers in education?](http://www.oecd.org/pisa/pisainfocus/#d.en.199059) And N°25: [Are countries moving towards more equitable education systems?](http://www.oecd.org/pisa/pisainfocus/#d.en.199059) <http://www.oecd.org/pisa/pisainfocus/#d.en.199059>)

So while Tasmania's demography, economy and geography may provide an explanatory context for some of our educational under-achievement, in the face of this international evidence they can no longer be used as excuses. And yet there is strong evidence that we continue to do so, most notably and significantly in explaining/justifying our low improvement aspirations in terms of the year 12 (or equivalent) attainment targets set out in the *National Partnership Agreement on Youth Attainment and Transitions* to which Tasmania is a signatory. (See *National Partnership Agreement on Youth Attainment and Transitions - 2008-9 to 2013-14*, Council of Australian Governments (COAG), Canberra, 2009 [http://www.federalfinancialrelations.gov.au/content/npa/skills/youth\\_attainment\\_transitions/national\\_partnership.pdf](http://www.federalfinancialrelations.gov.au/content/npa/skills/youth_attainment_transitions/national_partnership.pdf)) As discussed in an earlier paper, at the end of the agreement period (in 2015), Tasmania hopes that our school completion rates will **almost but not quite** reach the national rates at the **beginning** of this period (in 2008). Worse, even if we succeed, the gap between Tasmanian school completion rates and the Australian national average will not have narrowed, so we will not have caught up with the rest of the country. So, and of most relevance to this paper, while Tasmania's relative poverty, low level of adult qualifications, and the proportion of our population living outside the metropolitan areas are offered up as our official justification for these lower targets, the lack of ambition to catch up will perpetuate Tasmania's educational disadvantage. (See "Learning to Change Tasmania" at <http://www.tasmanianleaders.org.au/wp-content/uploads/2014/04/Learning-to-Change-Tasmania.pdf>)

It is difficult to avoid seeing this situation as evidence that we in Tasmania are (or have been) bereft of two of the three factors which the OECD identified as characteristics of countries with educational systems which are strong educational performers capable of effective educational reform; that is, political will and a belief in the potential of all students to learn and to achieve. Yet the situation is not irretrievable, most especially with respect to the second and third of the OECD's pre-conditions for strong educational performance and reform; that is, believing in the educational potential of all students and the capacity of all stakeholders to make sustained and concerted efforts towards improvement in educational opportunities and outcomes.

## APPENDIX 2: THE BARE STATISTICS

NOTE: Sources for data in tables are given in the body of this note.  
All web sites were accessed 16 May 2014

Table 1: 2013 NAPLAN test results in order of state/territory mean

Year level	Reading	Persuasive Writing	Spelling	Grammar and Punctuation	Numeracy
3	ACT, VIC, NSW, TAS, SA, QLD, WA, NT	VIC, NSW, ACT, QLD, WA, TAS, SA, NT	NSW, VIC, ACT, SA, WA, QLD, TAS, NT	ACT, VIC, NSW, QLD, TAS, WA, SA, NT	ACT, VIC, NSW, TAS, WA, QLD, SA, NT
5	ACT, VIC, NSW, QLD, TAS, WA, SA, NT	VIC, ACT, NSW, WA, QLD, TAS, SA, NT	NSW, VIC, ACT, WA, QLD, SA, TAS, NT	ACT, NSW, VIC, WA, QLD, SA, TAS, NT	ACT, NSW, VIC, QLD, WA, TAS, SA, NT
7	ACT, VIC, NSW, WA, SA, TAS, QLD, NT	ACT, VIC, NSW, WA, SA, QLD, TAS, NT	NSW, ACT, VIC, WA, SA, QLD, TAS, NT	ACT, NSW, VIC, WA, QLD, SA, TAS, NT	ACT, NSW, VIC, WA, QLD, SA, TAS, NT
9	ACT, VIC, NSW, WA, SA, TAS, QLD, NT	ACT, VIC, WA, NSW, SA, QLD, TAS, NT	NSW, ACT, VIC, WA, QLD, SA, TAS, NT	ACT, NSW, VIC, WA, QLD, SA, TAS, NT	ACT, NSW, VIC, WA, QLD, SA, TAS, NT

Table 2: Tasmania's PISA results

	TAS compared to all other states	TAS compared to the NT	TAS compared to the OECD mean
Mathematics	Significantly below	Significantly above	Significantly below
Science	Significantly below	No significant difference	No significant difference
Reading	Significantly below	Significantly above	Significantly below

Table 3: Performance against COAG target for year 12 completion

	% completing year 12 or equivalent in 2011
NSW	83.5
VIC	86.1
QLD	83.0
SA	84.0
WA	83.8
TAS	78.2
NT	72.8
ACT	90.1
AUST	84.1

Table 4: countries scoring equally or immediately lower than Tasmania in PISA 2012

Mathematics	Science	Reading
Sweden	France	Croatia
Hungary	Denmark	Sweden
Croatia	United States	Iceland
Israel	Spain	Slovenia



Table 5: OECD data on percentage of 25-34 year olds with the equivalent of a high school diploma, and expected average years of education, as at 2011

Country	% of 25-34 y.o. with high school diploma	Expected years of education
Australia	84%	18.8
Denmark	80%	19.2
France	83%	16.5
Hungary	87%	17.5
Iceland	75%	19.5
Israel	90%	15.7
Slovenia	94%	18.3
Spain	65%	17.6
Sweden	91%	19.2
US	89%	17.1

Table 6 NAPLAN 2013, Selected State/territory year 9 mean scores, and % difference between means

	Read- ing	DIFF	Writ- ing	DIFF	Spell- ing	DIFF	Gram- mar	DIFF	Num- eracy	DIFF
ACT	599.5		569.9		589.0		593.7		596.9	
VIC	584.6	98%	564.0	99%	582.5	99%	577.2	97%	588.4	99%
TAS	575.8	98%	541.2	96%	565.0	97%	560.5	97%	565.5	96%

Table 7: Percentage of population who left school at year 10 or below, or did not attend school, by area of residence

AREA	% of people with no qualification higher than year 10	Index of Community Socio-Educational Advantage (ICSEA)
<i>Non-metropolitan NT</i>	<i>52.4</i>	<i>786</i>
<i>Non-metropolitan Tas</i>	<i>50.3</i>	<i>945</i>
<i>Rest of NSW</i>	<i>45.9</i>	<i>961</i>
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Table 8. Apparent retention rates by single year (grade) range

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	2012	87.7	94.4	93.9	102.7	97.8	<b>85.1</b>	81.7	105.8	93.0
	2013	89.6	94.4	95.3	103.6	104.1	<b>83.2</b>	87.8	107.0	94.3