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Senate Education, Employment and Workplace Relations Committee

Inquiry into the administration and reporting of NAPLAN testing

Summary

§ NAPLAN testing is a major step in our education systems particularly in Queensland where there has been no standardised testing for year 10 or below for over 30 years
§ NAPLAN is already affecting teaching practices by encouraging schools to teach towards the important elements covered in the NAPLAN tests.
§ NAPLAN has been a major shock to the Queensland education system and politicians.
§ Simplistic reporting of NAPLAN scores gives the wrong impression of the quality of some schools. Those schools which are selective in intake will almost inevitably get better scores. This reflects the quality of the student, not the quality of education.
§ A system of measuring value adding should be implemented. In this way, the **improvement** in students performance becomes the primary focus. With the data available in NAPLAN, such a system could easily be developed.
§ A system of measuring value adding could reveal that some apparently poorly performing schools, perhaps from low socio-economic areas, are in fact performing very well by greatly improving the student's performance over time relative to the Australian average.

Introduction

My interest in education stems from my involvement in teaching Physics at Tertiary level for over 20 years. In that time I have seen the standards of mathematics and science of our first year students decline considerably. Although there are many reasons for this decline, I see the introduction of NAPLAN as a major advance in our system that will help improve the situation.

Queensland

Although I am interested in education, particularly maths and numerical science education, in Australia as a whole, I am particularly interested in the situation in Queensland. Consequently I see the NAPLAN testing structure against the background of the existing structures, syllabi and assessment systems in that State.

It is a straight statement of fact that in Queensland there has been no assessment of any value up to Year 10 exit for a quarter of a century. Other than NAPLAN testing and some data from the periodic international studies TIMSS (Trends in Maths and Science Study), there is nothing whatsoever.

The NAPLAN results, especially, one suspects, the results for Year 9, shook the Queensland government, Premier Bligh describing the results as a 'wake up call'. As a result the government instigated a review of literacy, numeracy and science learning. That review was done by the Australian Council for Educational Research ACER. (Hereafter referred to as 'the Masters Report'). The lead author was Geoff Masters. It is however probably of high significance that the Report notes the 'expert advice and ongoing insights into Queensland Education' provided by Dr. Gabrielle Matters. Dr Matters worked for some time with the old Board of Senior Secondary School Studies, BOSSSS, and hence has a deep and long standing interest and understanding of the situation in the State.

To those of us who have seen the decline in standards of students on entry to university, who have seen the feeble standards of maths and science that their children have 'studied' in Years 8, 9 and 10, and who remember the far higher standards when they attended Queensland schools 30 years ago, the findings of the Masters Report are no 'wake up call'. Those findings merely confirm what has been obvious to all except the Education Establishment (and the parliamentarians who trusted them) – that the situation was dreadful. A few quotations will suffice to demonstrate the findings.

In summary, there appears to have been a decline in the relative performance of Queensland students in maths and science over a period of decades. In the period 1964 to 1995, the ***absolute decline*** *in lower secondary maths achievement appears to have been greater than in any other State, and to have* ***been the equivalent of about two years of schooling.*** (Masters, page 27)

In a paragraph dealing with the performance of 'High Achievers' in maths Year 4, the Report states that the percentages of students reaching the Advanced benchmark on TIMSS 2007 '*show that Australian primary school students, and particularly students in Queensland, perform well below world-best standards in maths and science'.* (Masters page 20). As Figure 2.5 (p.20) shows that about 40% of Singaporean students achieve 'advanced'. The 'best' Australian result is for NSW with just over 10%. Queensland achieves about 3%. Please note that *all* Australian States without exception are feeble performers; educationally Queensland has become the weakest State in a weak nation. According to Masters, in the 60's and 70's in maths, Queensland used to be the top State.

There is good research evidence to support the intuitively obvious fact that feeble outcomes in lower secondary schooling affect both participation rates and standards of performance in Years 11 and 12. That is the cause of the problems I see at the Tertiary level.

There are no doubt a number of causes for the decline in standards over the years. However two obvious contributors must be (a) low standard syllabi and (b) weak or non existent assessment/monitoring. Barber and Mourshed are quoted in the Masters Report as saying

'All top-performing systems recognise that they cannot improve what they do not measure'. Masters p. 10). All very obvious of course.

Regular and consistent monitoring/assessment is essential. And to Year 10 exit, Queensland has done nothing for decades. NAPLAN is thus a welcome development.

The National Curriculum (if proper assessment is set up – unlikely in Queensland) is one current movement that has potential to produce improvement. I see NAPLAN as another approach that can produce improvement. Clearly it was the NAPLAN figures that frightened the Queensland government into some action as nothing else had for decades. The Senators should bear in mind that educationalists can be expected to complain about NAPLAN for the simple reason that the test exposes their own failure.

NAPLAN does not act as a full assessment of student performance/understanding. Its aim is restricted to assessing basic matters in English, maths and science. Within the limits of its objective it is, I think, a successful and useful tool.

One good aspect of the test is that it states fairly clearly the 'standards' to be expected for each subset of the work. Certainly those lists, brief as they are – about half a page for each bit – are far more explicit than the pitiable syllabi produced in Queensland. Queensland must note and heed another quotation from the Masters Report: '*All of the top-performing and rapidly improving systems have curriculum standards which set clear and high expectations for what students should achieve.'* (Barber and Mourshed 2007, quoted in Masters p.8)

Predictably the Education Establishment will whine that NAPLAN makes teachers 'teach for the test'. Well, probably, and perhaps not ideal; but a whole lot better than having no clear aim at all!

Value Adding

The most frequent and most publicised criticism of the NAPLAN 'system' is that it provides a way in which people are able, or think that they are able, to rank schools – a league table as people put it. Even with the attempt to include some method of estimating socio-economic status of each school it is still most inappropriate. It is little better than judging schools by the OP (Tertiary entrance score) results at the end of Year 12. That takes no account of the educational 'condition' of the students *at the start* of secondary schooling. It is often discriminatory against public (State) schools which cannot select their students.

We must do better than that – and NAPLAN provides a good opportunity to do better.

What is needed is some reliable method of measuring the amount of educational *improvement* that has occurred over time. For over ten years that approach has been referred to as 'value adding'.

Measuring value adding would take account of many factors that distort the test results if they are to be used as a measure of school quality. For example many schools select on the basis of student quality, often inadvertently by charging high fees. Others poach good students by offering scholarships, or remove poorly performing students by expulsions. All these influences could be taken into account by measuring the change in the student cohort achievement relative to the Australian averages.

Some schools with very high NAPLAN scores might find that their scores reduce as

the student cohort progresses from year 3 to year 9. This would be a poorly performing school even if the scores were above the Australian average. The high score would be a function of good students rather than good teaching. This school has taken very good students and made them fall down the scale, although they may still be above the average. Other schools with low scores might actually be performing very well if they can show that NAPLAN scores improve relative to the Australian averages. This would be a very good school even if the absolute scores were below the Australian average. This school has taken poor students and made them rise up the scale.

For educational improvement to be measured, to tell how much value has been added, it is clearly necessary to have some system of standardised testing that occurs at specified stages through a student's career. NAPLAN does that. However I think it would be better if we had some method of estimating 'readiness' earlier than Year 3, and something is needed at the *end* of Year 10. Presently NAPLAN occurs fairly early in Year 9, i.e. a year and a half before the end of Year 10, the time when the students make crucial and perhaps irreversible decisions as to further study in Years 11 and 12.

Nevertheless, even with just the Year 3, 5, 7 and 9 tests the opportunity is there to measure value added over the previous couple of years. That provides far more significant information for the student, the parents, the teachers, the schools and the systems as a whole.

Over the last few years there has been an increase in the number of individuals and organisations that have argued the case for value adding.

The Masters Report, done by ACER for the Queensland government, inter alia discusses 'monitoring student progress over time'. For example Recommendation 4 suggests that science tests should be introduced at Years 4, 6, 8 and 10 … *for monitoring student progress over time* (Masters P.82). Also, on the same page we find phrases '*monitoring student growth'*, '*the resulting measures of growth provide a better basis for evaluating a school's performance than point a\in time measures'* and '*parents are provided with a better picture of students' progress…'*

Figure 7.1 gives a graph of the progress over time of a student Daniel T. The graph is described as showing ' *how NAPLAN can be used to record and monitor an individuals numeracy progress across these years of school.'* (Masters p.80)

Whilst the Masters Report does not use the phrase 'value added', it seems clear that the strong suggestion is that such a system should be introduced and that NAPLAN provides a suitable framework.

Dr. Ben Jensen, Director of the schools education program at the Grattan Institute, spent years with the QECD education Directorate analysing effective education policies and examining how to accurately and meaningfully measure school performance. Earlier this year he wrote a very substantial research paper that was published by the Grattan Institute. The title was *Measuring what Matters: Student Progress.*

The paper is a most powerful argument for using the NAPLAN data in such a way as

to measure value-added. The whole document merits careful examination by the Senators involved in this Inquiry. However I realise that may not be possible so I place before the Inquiry some quotations from the Jensen paper.

School performance measures currently used '*are prone to mismeasurement and may be biased against schools serving lower socio economic groups,'* and

'Value-added scores consistently measure school performance more accurately, because they are better able to isolate the performance of schools from other factors that affect student performance' and

'*A school's contribution to student progress would be measured between NAPLAN assessments of literacy and numeracy at years 3, 5, 7, and 9, and students' grades in the final year of secondary school'.* (All from Jensen 2010 p.2)

In his Conclusion, Jensen deals with issues that are, I think, relevant to the Terms of Reference for this Inquiry which I see as how do we make the NAPLAN system better and how does that provide data that enables significant improvement to occur in student progress over the years. I can do no better than to quote from that Conclusion. *'Value-adding analysis allows policy makers and educators to track student progress through their schooling, rather than relying on simplistic snapshots of performance at a single point in time'.*

'Measures of value-added school performance should not be viewed as an end in themselves ….. form an effective evidence base for informed policy development and improve instructional practices and school effectiveness'

'School principals and teachers should be empowered to use value-added…to improve instruction'

To do that it will be necessary to provide;
A user friendly information technology…..allowing schools….better analyse… performance data.

Education and training to incorporate performance assessment into instruction and school programs…'

Resources should be made available for teachers and schools to develop programs based on value added measures and disseminate best practice.

Value-added…benchmark in school evaluation… a basis for categorising schools as under performing… (then provide) *additional support.*

I suggest that the combination of ideas from the Masters Report which clearly imply value adding, when taken together with Jensen's powerful paper, constitute a sufficient evidence base for the Senate Inquiry to urge that policy makers institute a value adding structure based on NAPLAN data as soon as possible. It should remove all the objections from teacher organisations about unfairness to some schools.

Simplistic use of NAPLAN results as happens at present should cease and immediately be replaced by a value-added structure.

I submit that there is an opportunity here to produce, over time, a major improvement

in the education provided to our children.

Please note that this submission has been written in consultation with members of the Queensland Council of Parents and Citizens Associations and a similar submission is proposed from that organisation.

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