EDUCATION IN RURAL AUSTRALIA:

A CHALLENGE FOR IMPROVEMENTS IN AGRICULTURAL

PRODUCTIVITY

Improvements in productivity can arise from any number of actions but it is generally accepted that one of the main contributors to a nation's growth in output is the existence of an efficient and wide-ranging education and training system. It is through education and training that the knowledge and skills base of a nation is built. It will be demonstrated in the following submission that the skills and knowledge base in Australia's regional/rural areas is inferior to that in its metropolitan areas and that one important potential source of improvement in agricultural productivity in Australia is to raise educational standards in rural/country areas. The paper is divided into three main sections – school performance in country NSW, school performance in country Australia, and non-school qualification levels in regional Australia.

SCHOOL PERFORMANCE IN COUNTRY NSW

Data on the rankings of primary and secondary schools in NSW in 2012 were taken from the My School website and are readily accessible on The Sydney Morning Herald website at www.smh.com.au/nsw/my-school-primary-2012. All schools that received an Overall NAPLAN Ranking, which is the school's average score across the fields of Reading, Persuasive Writing, Spelling, Grammar and Punctuation, and Numeracy, were included in the analysis. Not all schools conducted NAPLAN tests but more than 2,500 private and public schools achieved Overall NAPLAN Rankings across the State, and all of these schools were included in this investigation.

For the purposes of analysis, schools were divided into primary and secondary, public and private, and city and country (see Attachment One). Each school was allocated to a quartile according to its Overall NAPLAN Ranking as follows:

Quartile One – Highest performing schools in the State;

Quartile Two – Higher performing schools in the State;

Quartile Three – Lower performing schools in the State; and

Quartile Four – Lowest performing schools in the State.

Primary schools were ranked against all other primary schools and secondary schools were ranked against all other secondary schools. The results are tabulated below. It is important to note that, if the distributions were spread evenly across each quartile, one would expect to find 25% of each classification in each quartile, which is patently not the case.

Some 44% of all primary and secondary schools in NSW – over $1{,}100$ - were located in country areas. On a public/private school split, 67% of primary schools were public

schools and 33% were private schools. In the secondary school sector, 56% were public schools and 44% were private.

Principal Findings. From the perspective of schools in country NSW, there are two important findings to draw from the results of this investigation. First, country schools performed poorly when compared to their metropolitan counterparts.

Second, private schools performed considerably better overall than their public school counterparts and demonstrably so in country NSW.

The overall picture for the State is given in the tables immediately below and then the results for country schools only follow.

All Primary Schools in NSW

Quartiles >>	1	2	3	4
	No. %**	No. %	No. %	No. %
Public City	200 45	144 34	149 33	139 31
Public Country	14 3	83 20	165 37	267 62
Total Public	214 48	227 54	314 70	406 93
Private City	192 43	96 23	53 12	11 2
Private Country	35 9	98 23	78 18	21 5
Total Private	227 52	194 46	131 30	32 7
Grand Total	441 100	421 100	445 100	438 100

All Secondary Schools in NSW

Quartiles >>	1		2		3	4
	No.	%	No.	%	No. %	No. %
Public City	55	30	40	21	45 23	66 36
Public Country	3	2	16	8	94 47	110 60
Total Public	58	32	56	29	139 70	176 96
Private City	104	56	67	35	34 17	4 2
Private Country	23	12	68	36	26 13	3 2
Total Private	127	68	135	71	60 30	7 4
Grand Total	185	100	191	100	199 100	183 100

What do these figures tell us? First, the worst performing quartile of schools (Quartile Four) in both primary and secondary sectors across the State was comprised largely of public schools (93% in the case of primary schools and 96% in the case of secondary schools).

Second, as an indicator of how well country schools performed, 66% of the public and private primary schools in Quartile Four and 62% of the public and private secondary schools in that Quartile were located in country areas. Given that there were some 45% of all schools located in country NSW, the percentage of country schools located in Quartile Four indicates a significant excess of country schools in relation to what would be expected. When Quartiles Three and Four are combined (the bottom half of the Rankings), 60% of all primary schools are country schools and 61% of all secondary schools are country schools. Once again, the percentages of country schools are much higher than anticipated.

Third, looking from the direction of the highest performing schools, only 11% of the country primary schools were in the highest performing quartile (Quartile One), and only 16% of the secondary schools in that quartile were located in the country.

Fourth and finally, country public primary schools made up only 11% (97/862) of the total number of schools in the two top performing quartiles (Quartiles One and Two combined), and the comparable figure for country public secondary schools was 5% (19/376 = 5%).

These results tell us very clearly that, in New South Wales on an overall basis, country schools are not performing to the same level as their metropolitan counterparts. Nor are they performing as well as their private school counterparts. Furthermore, country public schools in both the primary and secondary sectors are the worst performing schools in the State.

Country Schools Only. Another perspective on the performance of country schools is to consider the performance of country schools by themselves. The performance figures for New South Wales country schools only are shown below.

Country Primary Schools Only

Quartiles >>	1	2	3	4	Total
Public Schools Private Schools	14 (3%) 35 (15%)	83 (16%) 98 (41%)	165 (31%) 78 (34%)	267 (50%) 21 (10%)	
Total Schools	49 (6%)	181 (23%)	243 (32%)	288 (39%)	761

Country Secondary Schools Only

Quartiles >>	1	2	3	4	Total
Public Schools Private Schools	3 (1%) 23 (19%)	16 (7%) 68 (57%)	94 (42%) 26 (22%)	110 (50%) 3 (2%)	223 120
Total Schools	26 (8%)	84 (24%)	120 (35%)	113 (33%)	343

Obviously, the first point to note is that each category of schools has a different performance profile. In the lowest two performance profiles, Quartiles Three and Four, 81% of the total schools were public country primary schools (165 + 267 = 432. 432/531 = 81%). The comparable figure for private country primary schools was 19%, or four times less.

With respect to the performance of secondary schools, the figure for public schools was 88% in the bottom two quartiles (Quartiles Three and Four) and the comparable figure was 12% for private secondary schools. These large disparities help illustrate how huge differences in the Overall NAPLAN Rankings between schools can occur for the same country location. As an example from the SMH Website, St Pius X Primary School is located in the same street and is directly opposite Dubbo West Public School. St Pius achieved an Overall NAPLAN Ranking of 778 and Dubbo West Public a Ranking of 1887. Similar disparities occur in other country locations throughout the State.

School Chances in NSW: Highest and Lowest Performing Quartiles. One way of looking at the results from the perspective of the layman is to ask: "What are the chances of a school falling within the highest performing quartile, Quartile One, and what are the chances of it being located in the lowest performing quartile, Quartile Four"? The answers are tabulated below.

Primary Schools

Chances of Being in:	Quartile One	Quartile Four
Public City	1 in 3.2	1 in 4.6
Public Country Public Total	1 in 37.7 1 in 5.4	1 in 2.0 1 in 2.9
Private City	1 in 1.8	1 in 31.0
Private Country Private Total	1 in 6.5 1 in 2.5	1 in 10.8 1 in 17.8

Secondary Schools

Chances of Being in:	Quartile One	Quartile Four
Public City	1 in 3.7	1 in 3.1
Public Country	1 in 74.3	1 in 2.0
Public Total	1 in 7.4	1 in 2.4
Private City	1 in 2.0	1 in 52.3
Private Country	1 in 5.2	1 in 40.0
Private Total	1 in 2.6	1 in 47.0

Once again, the figures show not only the dramatic differences between the performance of public and private schools, particularly those in the country, but also the huge variation between city public and country public schools. For example, every third city public primary school has a chance of being in the top performing quartile, while only every 38th country public primary school has that chance. And the figure is a lot worse for country public secondary schools (one in every seventy-fourth school).

With respect to Quartile Four, the worst performing quartile, the chances of country public primary and country public secondary schools being in that quartile are one school in every two or every second school. These can be compared to the private schools, where the chances are one in every eleven for primary schools and one in every forty for secondary schools. With disparities of this order, it is little wonder that, wherever possible, parents are continuing to move their children to schools with greater chances of educational success.

School Performance in Localities with High Indigenous Populations. (See Attachment Two.)

Some Suggestions. So what might we do about these results? First, before we embark willy-nilly on the Gonski reforms, we should be asking ourselves just how such reforms are going to deal with what is obviously a massive bias in the performance of our country public schools and country schools overall. Focusing upon individual students and schools may be part of the answer but a more systemic approach is really required – one that deals with country schools collectively.

Second, there needs to be a thorough examination into why country schools are performing so poorly when their facilities are reputed to be similar, their teachers are trained at the same institutions and the curricula are centrally determined.

Third, apart from a change in focus, a separate 'recovery package' should be considered for country schools. Such a "package" should not only cover educational matters such as relevance of the curriculum to different communities but also those related to more effective and responsive educational administrative structures, adequate research and development to better identify what works educationally and what does not, and a closer look at more effective delivery models for education in our country areas. Some of our current governance structures, both administratively and educationally, might have been appropriate when they were introduced 150 years ago but if the results of this investigation are anything to go on, their time may well have passed its use-by date.

Fourth, in many country locations, poorly performing primary schools are feeding into poorly performing secondary schools, particularly in the public sector and attention is urgently required to break this nexus. Indeed, while commentators have generally focused their attention on the performance of secondary schools, the real challenge is to lay down some better educational foundations in our primary schools. It is in these schools that the fundamental skills of reading, writing and numeracy are learned, and where values of industry, fairness and community responsibility are laid down.

Ignoring the performance of our primary schools, then, is an important omission demanding more attention.

Fifth, current reports abound of an excess of trained teachers being generated by our tertiary education system. With this excess and as part of a country schools rescue package, consideration might be given to lowering student teacher ratios in country schools to enable country schools to catch up to their metropolitan counterparts. Such a move will also create jobs in rural areas and provide a wider base of educational expertise available to country communities. Other aspects, such as differential pay rates to attract teachers of mathematics and science into the teaching fold and into country areas; steps to reduce high staff turnover levels; and action to improve student retention levels in country schools also bear consideration.

Finally, with some 150,000 primary and secondary school students in country NSW, the State is losing considerably as an economy and a society in having its country schools perform so poorly. It must surely be time that our politicians moved decisively to address such an ongoing educational weakness. Political inertia is simply no longer an option. Failure to act will undoubtedly continue to lower Australia's educational performance when compared to that of our international competitors. Our productivity levels will decline relatively and growth in our standard of living will not reach its maximum potential.

THE AUSTRALIA-WIDE COUNTRY SCHOOL PICTURE

In 2013, the ABS estimated that there were some 3.6 million school students in Australia, of whom approximately 1.4 million were located in country areas (see ABS Publication No.: 4221.0, *Schools, Australia, 2013*). While a comprehensive study of school performance across states and territories is not available at this time, the pattern of performance in NSW is pretty much replicated across Australia.

In late 2013, the Australian Council for Educational Research released the *Program* for International Student Assessment Report (See PISA in Brief: Highlights from the Full Australian Report: PISA 2012 How Australia Measures Up), which shows that Australia is not only slipping down the educational rankings on an international comparative basis but that the features highlighted in the previously discussed NSW school system – low performance levels in country schools; poor performance in areas of high indigenous populations; private schools performing at higher levels than their public school counterparts – are also pretty much the same as those found in the other Australian states and territories.

With respect to the geographic location of schools, the PISA Report found that in the cases of Mathematics, Scientific Literacy and Reading: "...students attending metropolitan schools performed at a significantly higher level than students in schools from provincial areas, who in turn performed at a significantly higher level than students attending schools in remote areas." Indeed, the Report shows that, Australia-wide, students in provincial centres are 9 months behind their metropolitan counterparts in mathematics, 6 months behind in science and 12 months behind in reading. For their remote school counterparts, the respective differences are 30

months behind for mathematics, 18 months behind for science and 24 months behind for reading. Can such results be said to provide a sound basis for Australia's future growth in agricultural productivity?

Another aspect of the PISA Report is that Western Australia, The Australian Capital Territory, New South Wales, South Australia and Queensland were generally ahead of or on par with the OECD average, and Tasmania and the Northern Territory were behind it. What the PISA report highlighted is that educational performance across Australia is variable. Any corrective action, therefore, needs to incorporate a national dimension that addresses such variation and it would seem appropriate that the council of education ministers should be at the forefront in initiating and leading such action. From the PISA results, it is clear that the general findings for country schools in NSW outlined in the first part of this paper tend to be confirmed for Australia as a whole.

NON-SCHOOL QUALIFICATIONS IN REGIONAL AUSTRALIA

It is one thing to deal with the vagaries of the nation's education and training systems and an entirely different matter to deal with the pool of skills and knowledge upon which a region can base its economic growth and development. What the most recent report on this matter from the ABS (*Perspectives on Regional Australia: Non-School Qualifications in Regions, 2011* – Report No.: 1380.0.55.011) illustrates very clearly is that the further one gets away from the central metropolitan area in each state and territory, the lower the level of non-school qualifications of the community, and the differences are marked. For example, in NSW "... Far West and Orana (39.2%) in the north-west interior, and New England and North West (42.4%) in the north of the State were the regions with the lowest attainment rates..." These rates may be compared to that of North Sydney and Hornsby, where the rate was 69.3%.

What these figures mean is that for every 100 persons in the NSW population between the ages of 20 and 64, there were 30 more in North Sydney/ Hornsby with non-school qualifications than there were in the NSW Orana Region. This is a dramatic difference and it can be readily argued that this difference, which exists to significant degrees in other states and territories as well, means that the pool of expertise and skills that the agricultural sector in Australia can call upon locally is significantly smaller than is available to industry elsewhere across the state.

What the ABS Report also shows is that, while one in every two persons in Australia between the ages of 20 and 64 had a post-school qualification, only 1.2% of the non-school qualifications held were in agriculture, the lowest percentage of any industrial category. Given the proximity of agriculture with country regions, one would have expected a higher percentage than this. The low percentage raises questions about the agricultural industry's level of support for rural education and training, and the availability of suitable courses and other aspects of rural educational provision, such as access to appropriate learning facilities.

As a contrast, however, the ABS Report found that vocational education was far more popular than university education in regional areas: "Vocational qualifications outnumbered university level qualifications by two to one in the regional areas of

Australia." Such results are reflective of the more dispersed nature of technical and vocational education provision across country regions and if, as these results seem to be indicating, the agricultural sector is continuing to rely upon skills and knowledge developed from this educational source, it needs to take steps to ensure that the provision of vocational education and training is strengthened, not diminished.

By way of concluding this section, the ABS reports clearly show that country regions have the lowest overall non-school education levels and that when qualifications are held, they tend to be lower than university level. How to boost both the volume and academic standing of non-school agricultural education in Australia is, therefore, a major challenge. What is obvious, however, is that TAFE-type qualifications are both popular and more widely available than those offered by universities and similar institutions. Whatever action is taken, therefore, should bear the matter of access to TAFE in mind. And local agricultural industries should be encouraged to be more education conscious than they currently appear to be. With respect to TAFE, micro colleges with multi-purpose facilities and a range of mobile facilities such as mobile welding trucks and mobile classrooms should be considered. Wherever possible, the use of such facilities should be integrated with existing schools to diminish the duplication of administrative arrangements, and to provide low cost access to services such as power and water. In many cases, instructors can be drawn from within the local community.

CONCLUDING REMARKS

To end, let us turn to the case of Dubbo in the Central West of NSW. The current bureaucratic arrangements in public education in NSW have a remote regional office being responsible for delivery to schools within a far-flung region and an even more remote central office being responsible for curriculum, funding, policy and administration. Dubbo is serviced by at least seven public and private pre-schools plus a range of day-care providers, twelve public and private primary schools, three public and four private secondary schools, a large TAFE College, the Western College of Adult Education, a conservatorium of music, a campus of Charles Sturt University and a campus of The University of Sydney (School of Rural Health), a number of registered private training providers, in-house training in some firms and institutions such as the Western Plains Zoo, a specialist distance education provider to schools and a specialist distance education provider for TAFE (OTEN), and distance education is also provided at the tertiary level by a number of other universities. That amounts to quite a lot of educational provision!

Bearing in mind the Prime Minister's recent statements at Tenterfield on the need for greater efficiency in the administration of government across its various levels in Australia, there is no one individual or organization in Dubbo with any responsibility to pull all of this provision together; to give it a focus; to plan for Dubbo's future, educationally; and to monitor and take responsibility for overall educational performance and its improvement. Under such circumstances, it is difficult to see how the full potential of educational provision in Dubbo can be achieved.

There are many "Dubbos" scattered throughout the State and other parts of Australia. How can their full educational potential be realized within the existing system? It would seem time, then, that our educational administrative arrangements were reviewed and moves made to increase local involvement in country education in particular. In this regard, there may be scope for experimenting with local councils as agents of local educational administration. They are agencies recognized in legislation; are elected democratically; have local administrative apparatus in place; and are responsible directly to their local communities. This cannot be said about existing administrative and bureaucratic arrangements, particularly in the state public sector.

To end, this submission has sought to illustrate that the performance of schools in country areas of NSW and Australia is generally behind that of their metropolitan counterparts. When taking this into consideration with the relatively smaller pool of skills and knowledge existing in regional Australia, it is critical that the agricultural sector seeks to address this deficiency forthwith. If it fails to do so, the base for improving productivity in the sector will fall shy of its potential and country populations will be the poorer for it.

Perce Butterworth. Sydney. October, 2014.

ATTACHMENT ONE

Definition of City and Country Locations

For the purposes of analysis, all schools allocated an Overall NAPLAN Ranking were divided into city and country. "City" in NSW was defined as the area covered by postcodes:

1215-2234 2285-2309 2500-2505 2519-2522 2555-2573 2745-2770 2773-2785

In common parlance, "City" included Metropolitan Sydney as far as Katoomba to the west, The Oaks to the south and the Hawkesbury to the north, plus the central suburban areas of Wollongong and Newcastle. "Country" was defined as those locations falling outside the postcodes listed above.

It should be noted that the national MCEECDYA classification of schools uses three categories, metropolitan, provincial and remote, rather than the two used in this study (see MCEECDYA Schools Geographic Location Classification). However, one must bear in mind that, like the schools in metropolitan areas, the huge bulk of the country schools, provincial or remote, are controlled by either the State/Territory Governments or the Catholic Education System, i.e., the responsibility for the performance of schools, whether they are classified as "city and country" or "metropolitan, provincial and remote" is largely controlled by only a few agencies that should be well cognizant of the variations between schools within their jurisdictions, whichever way the schools are classified.

ATTACHMENT TWO

School Performance in Locations with High Indigenous Populations

There are many locations across New South Wales where the indigenous population is relatively large and these locations are often the focus of special programs to improve the educational performance of indigenous students. Thirty two of these locations were identified and the performance of the local public schools tabulated. These are shown below. For primary schools, Quartile Three ranked between 875 and 1311 and Quartile Four ranked between 1312 and 1748. In the case of secondary schools, these ranges were 382 to 571 for Quartile Three and 572 to 762 for Quartile Four.

School Location	Overall NAPLAN Ranking (Primary)	Overall NAPLAN Ranking (Secondary)
Armidale	1075 (Q3)	510 (Q3)
Bourke	1740 (Q4)	754 (Q4)
Bowraville	1682 (Q4)	495 (Coffs H. – Q3)
Casino	1624 (Q4)	707 (Q4)
Cobar	1697 (Q4)	697 (Q4)
Coffs Harbour	1705 (Q4)	495 (Q3)
Condobolin	1712 (Q4)	737 (Q4)
Coonamble	1722 (Q4)	748 (Q4)
Coraki	1672 (Q4)	570 (Lismore – Q3)
Dubbo West	1684 (Q4)	730 (Q4)
Forbes	1297 (Q3)	633 (Q4)
Grafton	1275 (Q3)	605 (Q4)
Gilgandra	1721 (Q4)	641 (Q4)
Gunnedah	1743 (Q4)	633 (Q4)
Inverell	1560 (Q4)	610 (Q4)
Kempsey West	1736 (Q4)	703 (Q4)
Lismore	1642 (Q4)	570 (Q3)
Moruya	1300 (Q3)	442 (Q3)
Moree	1626 (Q4)	744 (Q4)
Narrandera	1690 (Q4)	592 (Q4)
Narrabri	1305 (Q3)	585 (Q4)
Nowra East	1704 (Q4)	420 (Q3)
Orange East	1650 (Q4)	544 (Q3)
Parkes	1316 (Q4)	620 (Q4)
Raymond Tce.	1572 (Q4)	671 (Q4)
Tamworth West	1722 (Q4)	657 (Q4)
Taree	1376 (Q4)	479 (Q3)
Warren	1688 (Q4)	741 (Q4)
Wellington	1675 (Q4)	742 (Q4)
Wentworth	1695 (Q4)	Combined Prim/Sec
Wilcannia	1748 (Q4)	Combined Prim/Sec
Wyong	1273 (Q3)	631 (Q4)

In the case of primary schools, only six locations out of thirty two were placed in Quartile Three and the remaining rated primary schools (24 schools) fell into Quartile Four.

In the case of secondary schools, only nine locations fell into Quartile Three and the remaining 21 rated secondary schools fell into Quartile Four. No school had a ranking higher than the third quartile. The great bulk of country schools in locations with large indigenous populations, then, fall into the worst performing quartile.