Independent Review into Regional, Rural and Remote Education

A review of the literature 2006-2016 for the development of a discussion paper, a call for submissions and a national program of consultations

Acknowledgement

I want to acknowledge the very significant contributions of Susanne Taylor B Ed (Hons) BA and Philip Townsend PhD in compiling this review of the literature for 2006-2016 relating to students achievements and opportunities and regional, rural and remote contexts. Their extensive knowledge of regional, rural and remote education and their commitment to it made it possible to complete a substantial body of work in a short period of time.

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1 INTRODUCTION AND FRAMING

This Literature Review was undertaken to inform and support the Independent Review of Regional, Rural and Remote Education (IRRRRE) announced by the Australian Government in March 2017, and principally the development of a Discussion Paper to facilitate a call for submissions and a national program of consultations. As such, the literature review is more of a working document than a piece of polished writing. For example, there is brief commentary from time to time which functions as an aide-memoire to the writer of the Discussion Paper.

The IRRRRE was tasked with considering the key issues, challenges and barriers that impact on the learning outcomes of regional, rural and remote students and provide recommendations on innovative and fresh approaches to support improved access and achievement of these students in school and their transition to further study, training and employment.

The terms of reference for the IRRRRE were to investigate:

- The gap in educational achievement between regional, rural and remote students and metropolitan students;
- The key barriers and challenges that impact on the educational outcomes of regional, rural and remote students, including aspirations and access issues;
- The appropriateness and effectiveness of current modes of education delivered to these students, including the use of information and communications technology and the importance of face to face regional, rural and remote education provision;
- The effectiveness of public policies and programs that have been implemented to bridge the divide;
- The gaps and opportunities to help students successfully transition from school to further study, training and employment; and
- Innovative approaches that support regional, rural and remote students to succeed in school and in their transition to further study, training and employment.

The Literature Review focuses predominantly on publications since 2006 and includes relevant peer reviewed articles, reports and grey literature mainly from Australia, the USA and Canada, and then other OECD countries and elsewhere as appropriate. As with all reviews of literature, judgments have been made not only about what to focus on but also on what not to duplicate. For instance, there is already a substantial number of published reports available about regional, rural and remote (RRR) contexts, communities and the people who live, learn and work there such as:

- In 2000 the 'National Inquiry into Rural and Remote Education' by the Human Rights and Equal Opportunity Commission (Human Rights and Equal Opportunity Commission, 2000);
- In 2006 the SiMMER Survey - 'Science, ICT and Mathematics Education in Rural and Regional Australia (Lyons, Cooksey, Panizzon, Parnell, & Pegg, 2006);
- In 2009 the Report on Rural and Regional access to Secondary and Tertiary Education Opportunities by the Senate Standing Committee on Rural and Regional Affairs and Transport (Commonwealth of Australia, 2009);
- A range of reports from the Productivity Commission on topics such as education and employment and Indigenous Australians and resources – see http://www.pc.gov.au/research;
- In 2013, the Report on 'Teaching and learning – maximising our investment in Australian schools' by the Education, Employment and Workplace Relations References Committee (Commonwealth of Australia, 2013);
- The series of reports 2007, 2010 and 2013 on Staff in Australian Schools (SiAS) undertaken by the Australian Council of Educational Research (ACER);
- Reports and publications by the Organisation for Economic Cooperation and Development (including PISA and the Teaching and Learning International Survey) – see http://www.oecd.org/education/;
- In 2015 the Dropping Off The Edge Report by both the Jesuit and Catholic Social Services Australia (Vinson, Rawsthorne, Beavis, & Ericson, 2015); and
- The 2016 Progress in Australian Regions: State of Regional Australia 2016 by the Department of Infrastructure and Regional Development (Commonwealth of Australia, 2016b).

Some are particular to RRR contexts and others have sections on RRR within the body of the reports. Some relate directly to the field of education and some provide context for discussions. There are also numerous relevant state and local reports.

Decisions about what to focus on and include in the review of the literature have been informed by the overall purpose and terms of reference of the IRRRRE, and the time frame and scheduling for it. Attention has been focused on unearthing literature to help illuminate what might be done by way of policy, practice and resourcing to support improved access and achievement of RRR students and their transition to further study, training and employment. In addition to an introduction and framing which includes critical dimensional aspects of RRR, the literature covers the following areas in separate sections:

- Aboriginal and Torres Strait Islander students
- Curriculum and Assessment
- ICT
- School culture and environments
- Students and student engagement
- Teachers and teaching

Each section is presented generally in terms of themes, challenges, barriers, partnerships and opportunities as per the overall purpose of the Review. Note: whilst some literature on communities and families, leadership, resources, business partnerships, philanthropy and systems is included in the sections above, further elaboration on these occurred during the review process.

1.1 Standpoint

Vibrant, productive rural communities are integral to Australia's sustainability and prosperity. Population growth and an increasing preference for urban living linked with the challenges of food security, water supply, energy sufficiency, environmental health and territorial security underpin this position (Barlow, 2007; Diamond, 2005; Homer-Dixon, 2010). Consequently, for rural communities to survive, prosper and be the innovative places and spaces Australia requires, it is essential that those who live and work there have access to high quality education, training and post-school options and pathways.

Secondly, an Appreciative Inquiry (AI) approach has been used to compile this document. The starting point for AI research is what seems to be working or in the words of Kung, Giles, and Hagan (2013), "what appears to be causing a sense of life" (p. 29). AI is not blind to the merits and contributions of exploring problems in depth and detail to gain a better understanding of them. Rather it urges a searching out of what is going on, what is being taken for granted, and what might be done to enliven and energise a situation, a context, an opportunity, and in particular, improvements in the outcomes of regional, rural and remote students.

Thirdly, there are in school and out of school factors as well as the relationships and interactions between them which impact on student outcomes and beyond schooling opportunities and pathways. Sometimes the impact of out of school factors is greater than the in school factors such as discussed in the Schools Workforce Productivity Commission Report, 2012 and the Dropping Off The Edge Report, 2015 (Vinson et al., 2015). This means working at finding ways of illuminating and hopefully reducing, while at the same time, ensuring that what happens 'inside the school fence' optimises learning.

1.2 Some understandings about rural and rurality

In Australia there are numerous terms commonly used to denote locations and associated characteristics that are considered to be 'other than urban'. These include country, regional, the bush, outback, remote, and isolated. More vernacular descriptions such as 'the back of beyond' and 'the sticks' are also used. Naming of non-urban locations occurs in countries other than Australia and especially those with very large land masses, like Africa and the United States of America, or those which are smaller in area terms but have contrasting landforms, such as Britain.

Essentially there are instrumental/quantitative definitions of rural and definitions of a more nuanced and qualitative kind. Quantitative definitions of 'rural' place emphasis on population size and distance from a large centre where there is an extensive range of human services available. Qualitative definitions on the other hand, while recognising that population size and distances are contributing elements to what constitutes 'rural', focus on the cultural and relational dimensions of places and people.

Rural and remote area determinations for schooling provision in Australia are most often based upon a blend of size of population centre and distance from either the capital city or a major regional centre (Jones, 2004). A sociological or qualitative approach on the other hand pays more attention to essences of places and spaces in order to gain an understanding of rural and rurality. Put another way,

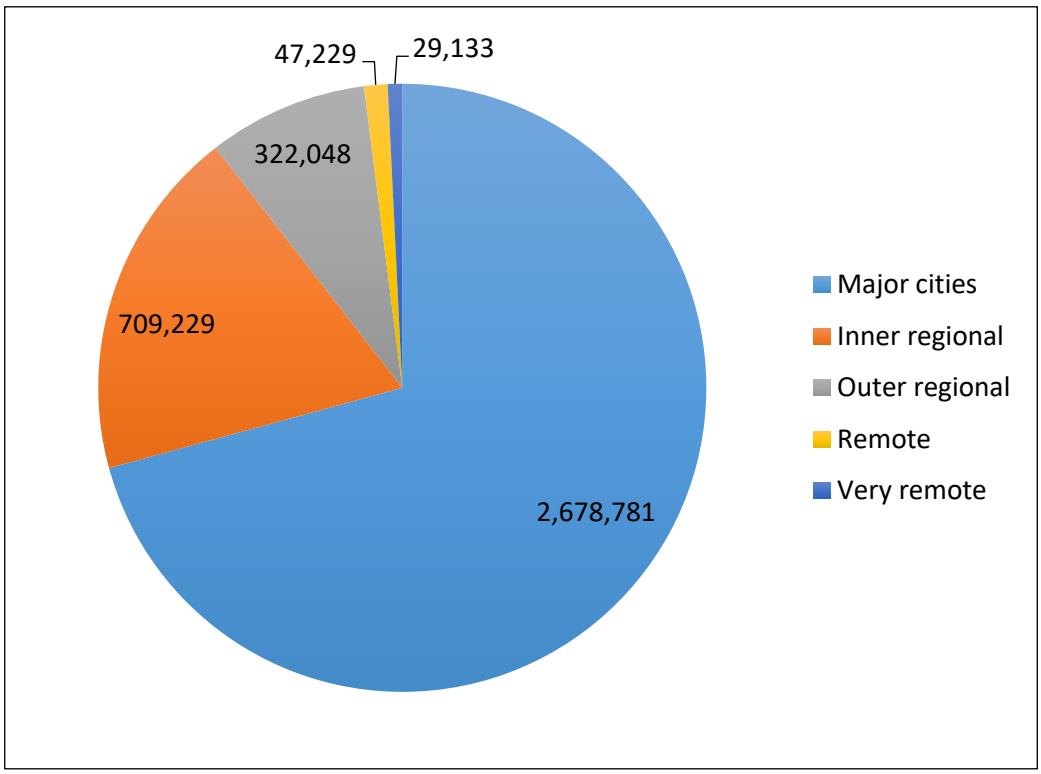
> …the notions of movement, flow from place to place, the ways in which places are connected by histories rather than geographies, and the idea put forward by Deleuze that place is an issue of becoming and identification, all constitute interesting problematics for [an] analysis [and understanding] of rural… (McConaghy, 2002, p. 14)**.**

Emphasising place presents options for incorporating what Mulley (1999) calls the vernacular for shaping conceptions of rurality. Stereotypes and myths about the Australian bush and bush characters, as an instance of the vernacular, have a long history and continue to have some hold on understandings about rurality. For example, *The Advertiser* newspaper (Devlin, 2006), in a feature article to commemorate the Black Tuesday bushfires in South Australia on Eyre Peninsula in 2005, used the banner headline "*Bush spirit shines amid tears, pain*".

1.3 Numbers of students and schools in RRR areas

The Australian Bureau of Statistics has five mainland remoteness categories based on road distances between locations and five different-sized service centres, namely Major Cities, Inner Regional, Outer Regional, Remote Areas and Very Remote Areas (Australian Bureau of Statistics, 2013d).

Figure 1 Number of Full Time Students (FTE) by Geographic location, 2016



Source: Australian Bureau of Statistics 2017a

In 2016 there were 3,798,226 students and 3,786,420 FTE students. The above figure shows that whilst most FTE students are enrolled in schools in major cities, those in other areas account for 29.3 per cent or 1,107,639 FTE students. Of these, Inner Regional and Outer Regional areas totalled 1,031,277 FTE students (27.2%) and for the purposes of this literature review are categorised as 'rural and regional' students. Through combining Remote and Very Remote areas results in a total of 76,362 FTE students (2.0%) and here are called 'remote' students (Australian Bureau of Statistics, 2017a).

There are over 4,200 non- metropolitan schools (Australian Bureau of Statistics, 2013c) ranging in size from 20 or less students to more than 1200 providing education for RRR students. There are also over 4,000 schools (Australian Bureau of Statistics, 2013c) in Australia with 200 or fewer students, the majority of which are in regional, rural and remote locations and many of which are combined primary and secondary schools. As well, there are Distance Education providers in all states and territories.

1.4 Results profile for RRR Students

There are two international tests of school pupils' learning that are receiving increasing attention in Australia and globally: the Programme for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS).

At an international level the Organisation for Economic Co-operation and Development (OECD) noted what they termed an "urban advantage" in student performance in PISA results from 2009 (Organisation for Economic Development and Cooperation, 2013, p. 1). In a more recent document it was reported:

> … children from poor households, ethnic minorities or rural areas are significantly less likely to make the transition from primary to lower secondary school and from lower to upper secondary school, and are more likely to be delayed in their progression through the grade levels.(Organisation for Economic Development and Cooperation, 2016, p. 210).

In the Australian context of PISA, students were classed according to three geolocations: metropolitan, provincial and remote. The report of Australian students' performance on the 2015 assessment indicated that as distance from metropolitan centres increased, scores decreased. Thomson, De Bortoli and Underwood state:

> Students from metropolitan schools achieved significantly higher scores than students from provincial schools or remote schools. Students from provincial schools and students in remote schools did not score significantly different to each other (Thomson, De Bortoli, & Underwood, 2016, p. 56).

Similarly, for TIMSS Australian students demonstrated lower scores with increasing distance from metropolitan centres for Years 4 and 8 levels of Mathematics and Science (Thomson, Wernert, O'Grady, & Rodrigues, 2016, pp. 25-26, 44-45, 63, 82).

The Australian Curriculum, Assessment and Reporting Authority (ACARA) are responsible for the National Assessment Program. One aspect is an annual assessment for students in Years 3, 5, 7 and 9 known as The National Assessment Program – Literacy and Numeracy (NAPLAN). Since 2008 this has been taken as a measure of school pupils' learning outcomes, and a variety of comparisons made between groups of students. The general trend for 2016 is for decreasing attainment with increasing remoteness:

> Across all five achievement domains, there is a consistent pattern in the results for Australia overall. Students from major cities geolocations have the highest mean scale score, followed by students from inner regional geolocations, then students from outer regional geolocations, then students from remote geolocations, and then students from very remote geolocations. … The distributions of students in achievement bands are similar. For Australia overall, the highest percentage of students achieving at or above the national minimum standard attend schools in the major cities and the lowest percentage attend schools in very remote geolocation (ACARA Australian Curriculum Assessment and Reporting Authority, 2016, p. 64).

In terms of successful completion of year 12 or equivalent qualification (at the level of Certificate III or higher) by the age of 19, there is a similar pattern of outcomes as those already reported in this section; a marked decline from 78% for Major Cities to 43% for Very Remote with the difference between Inner Regional and Major Cities being 14% (Mitchell Institute, 2015). In relation to higher education, there is also a decreasing trend with increasing remoteness pertaining to transition to university and also to the proportion of persons aged 25–34 years with a bachelor degree or above. In 2014, the figure for Major City residents was 42.2%, Inner Regional was 21.8%, Outer Regional was 19.5% and Remote and Very Remote was 17.8% (Australia, 2015). For VET participation, rural rates are at least as high as urban in basic level programs and in some instances exceed them. However, at the diploma level, the situation is reversed (Walstab & Lamb, 2008).

Overwhelmingly, the national statistics consistently show there is a powerful and persistent relationship between location and educational outcomes when data for the various measures is aggregated. However, it is also very important to understand that aggregated data smooths outs (and possibly hides) the highs and lows in any data set. Or, as Clark and Avery (1976) argue, “the aggregation problem… [is] the information loss which occurs in the substitution of aggregate, or macro level, data for individual, or micro level, data” (p. 428). Without wanting to minimise the outcomes differences between Major Cities and all other Regions, it is the highs that have the potential to provide innovative and fresh ways to improve education achievements for regional, rural and remote students.

2 ABORIGINAL AND TORRES STRAIT ISLANDER STUDENTS IN REGIONAL, RURAL AND REMOTE SCHOOLS

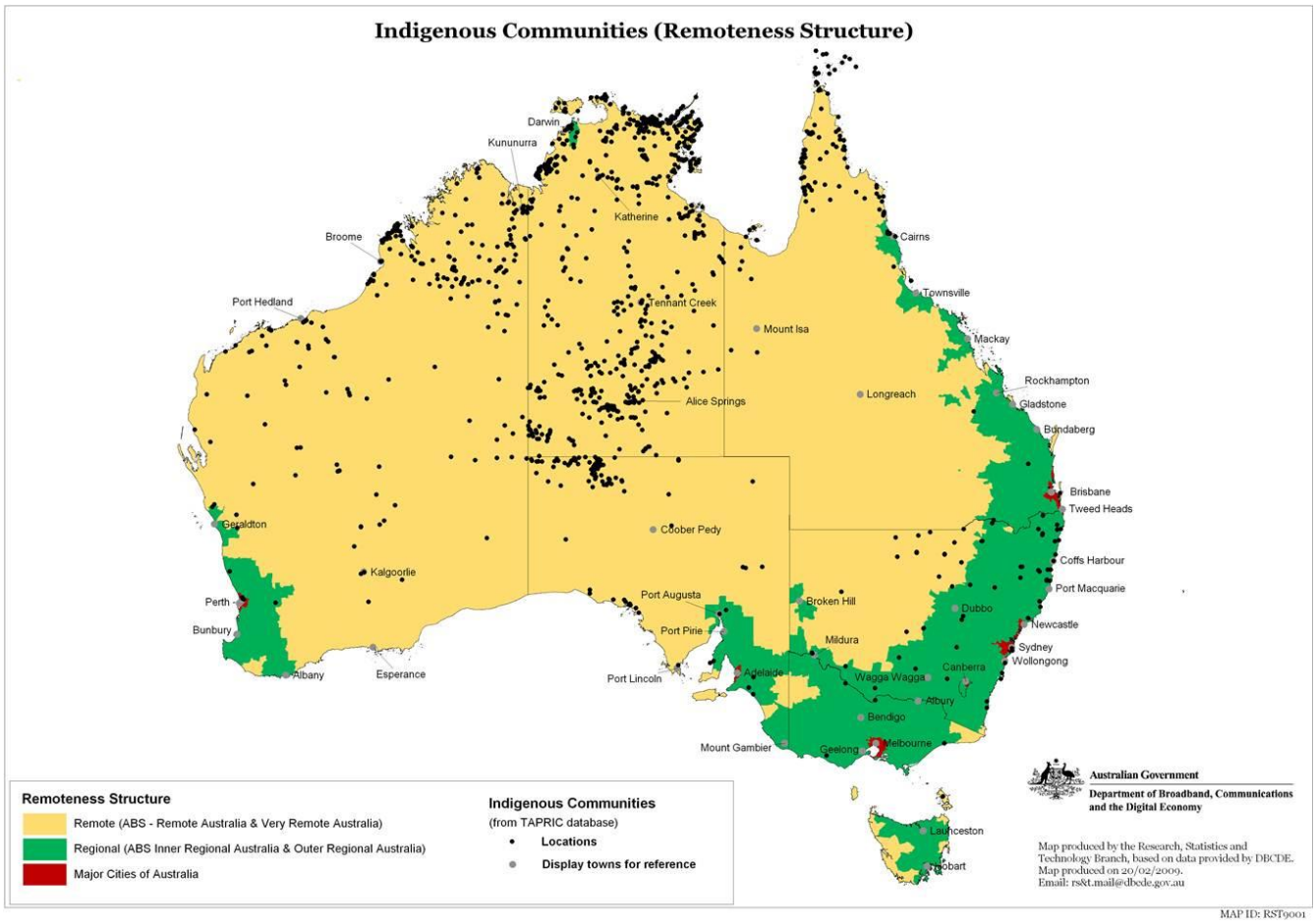
2.1 Introduction

This section focuses on schooling for Aboriginal and Torres Strait Islander students in Australia. Aboriginal and Torres Strait Islander people are the original inhabitants of Australia. The term 'Aboriginal' generally designates First Nations people from mainland Australia and the closest islands, and 'Torres Strait Islander' refers to First Nations people from the islands near the state of Queensland between the continent of Australia and the northern island of New Guinea (Mooney, 2015). The Australian Government's working definition of an Aboriginal or Torres Strait Islander is a person of Aboriginal or Torres Strait Islander descent, who identifies as being Aboriginal or Torres Strait Islander and is accepted as such by the community in which he or she lives (The Australian Institute of Aboriginal and Torres Strait Islander Studies, 2014). The issue of identity is complex and contentious (Carlson, 2016).

2.1.1 Indigenous population by geographic remoteness

Figures from the 2011 census indicated the estimated resident Aboriginal and Torres Strait Islander population of Australia was 669,900 people. Around one-third lived in major cities, about one-fifth lived in inner regional areas and also one-fifth in outer regional areas, another eight per cent lived in remote areas and about 14 per cent in very remote areas; that is 65.2% of Aboriginal and Torres Strait Islander people lived in rural, regional or remote places. In contrast, for non-Indigenous people, 28.7% lived in rural, regional or remote locations, with only 1.2% in remote areas and 0.5% in very remote areas. Of the total Australian population, Aboriginal and Torres Strait Islander people comprised 16.5% of all people living in remote areas, and 45.8% of all people living in very remote areas (Australian Bureau of Statistics, 2013a). The five mainland remoteness categories just mentioned are based on road distances between locations and five different-sized service centres (Australian Bureau of Statistics, 2013d). Living in remote and very remote communities enhances wellbeing for Aboriginal and Torres Strait Islander people with links to these areas because it reinforces kinship ties, provides opportunities to engage in cultural activities, and people remain on their traditional lands with which they feel a deep affinity (Biddle, 2014, p. 67). The combined area categorised as remote or very remote occupies about 85% of the Australian mainland (Australian Bureau of Statistics, 2011) and is shown in yellow on the map (see Figure 2). Throughout this literature review, the term "remote" will be used in a generic way and include the two remoteness areas of 'remote' and 'very remote' unless otherwise specified. The term "very remote" will refer specifically to the designated remoteness area.

Figure 2 Indigenous communities and remoteness boundaries



Source: Department of Broadband, Communications and the Digital Economy (2009)

2.1.2 Aboriginal and Torres Strait Islander school students

In 2016 there were 3,786,420 FTE students in Australian schools (Australian Bureau of Statistics, 2017a) and 206,065 FTE Aboriginal and Torres Strait Islander students (Australian Bureau of Statistics, 2017b) – who thus comprise 5.4% of the FTE school population. National data is available for FTE students by ASGS remoteness categories (Australian Bureau of Statistics, 2017a) but this does not identify numbers of Aboriginal and Torres Strait Islander students. Nevertheless, if data on age by ASGS remoteness categories (Australian Bureau of Statistics, 2014) is used as a proxy, with an assumption of 100% enrolment, then a reasonable estimate of Aboriginal and Torres Strait Islander FTE students by ASGS remoteness categories can be generated. Data according to the set of five ASGS remoteness categories is not available: data for “Inner Regional” and “Outer Regional” is combined as “Regional” and data for “Remote” and “Very Remote” is combined as “Remote”. Data for various age groupings was compiled (that is,

5-15, 5-16, 5-17, 6-15, 6-16, 6-17 year olds) and the total number of students varied. The total closest to that of the Australian Bureau of Statistics number of 206,065 was for the group 5-17 years old, which was 209,261 Aboriginal and Torres Strait Islander children and young people. Hence, data for this group will be used as a proxy for comparison with the national data of FTE students, with an acknowledgement that it will slightly overestimate the numbers and percentage of FTE Aboriginal and Torres Strait Islander students.

Table 1 FTE Aboriginal and Torres Strait Islander Students, 2016

ASGS	Australia	% of Australia	ATSI	% of ASGS
Major Cities	2,678,781	70.7	71,654	2.7
Inner Regional	709,229	18.7		
Outer Regional	322,048	8.5		
Regional	1,031,277	27.2	99,557	9.7
Remote	47,229	1.2		
Very Remote	29,133	0.8		
Remote	76,362	2.0	38,050	49.8
Total	3,786,420		209,261	

This table indicates that Aboriginal and Torres Strait Islander students constitute about 3% of students in Major cities, about 10% of students in "Regional" areas and about 50% of students in "Remote" areas.

2.2 Key elements in the review period

There is an extensive literature regarding schooling and education of Aboriginal and Torres Strait Islander children and young people. A number of policies, reviews and initiatives are highlighted.

2.2.1 Australian Directions in Indigenous Education 2005-2008

This was a policy document designed to cover the four year period up to 2008 and focused on five domains: (1) Early Childhood Education, (2) School and community educational partnerships, (3) School leadership, (4) Quality teaching, (5) Pathways to training, employment and higher education (Australian Education Systems Official Committee, 2006).

2.2.2 National Indigenous Reform Agreement (Closing the Gap)

The Social Justice Report of 2005 sets out a human rights based approach to health which initiated the Close the Gap campaign. This prompted the new Labor government in 2008 to establish the National Indigenous Reform Agreement designed to address the task of Closing

the Gap in Indigenous disadvantage (Council of Australian Governments, 2007). Each year at the opening of parliament the Prime Minister makes a statement to parliament of progress on the goals. The initial six goals included three relating to education. In May 2014, COAG agreed to a seventh target in relation to school attendance. In December 2015 COAG renewed the early childhood education target. Those relating to education are currently:

- ensure 95 per cent of all Indigenous four year-olds are enrolled in early childhood education by 2025
- halve the gap for Indigenous students in reading, writing and numeracy within a decade (by 2018)
- halve the gap for Indigenous people aged 20–24 in Year 12 attainment or equivalent attainment rates by 2020
- close the gap between Indigenous and non-Indigenous school attendance within five years (by the end of 2018) (Australian Institute of Health and Welfare, 2017).

2.2.3 Melbourne Declaration on Educational Goals for Young Australians

This is the foundational document for schooling over the past decade. It contains several specific statements about Aboriginal and Torres Strait Islander school pupils. The Preamble mentions a society "that values Australia's Indigenous cultures as a key part of the nation's history, present and future" (p.4). It went on to state

> In striving for both equity and excellence, there are several areas in which Australian school education needs to make significant improvement. First, Australia has failed to improve educational outcomes for many Indigenous Australians and addressing this issue must be a key priority over the next decade (p.5).

The first goal of the document is that "Australian schooling promotes equity and excellence". In providing details it affirmed:

> "This means that all Australian governments and all school sectors must:
>
> – ensure that schools build on local cultural knowledge and experience of Indigenous students as a foundation for learning, and work in partnership with local communities on all aspects of the schooling process, including to promote high expectations for the learning outcomes of Indigenous students
>
> – ensure that the learning outcomes of Indigenous students improve to match those of other students Gap in educational achievement (p.7).

The second goal is that "All young Australians become successful learners, confident and creative individuals, and active and informed citizens" (p.7). With regard to the latter point the

document stated this would be evidenced by being able to "– understand and acknowledge the value of Indigenous cultures and possess the knowledge, skills and understanding to contribute to, and benefit from, reconciliation between Indigenous and non-Indigenous Australians" (p.9).

The section "A commitment to action" mentioned eight inter-related areas. In the first, called "Developing stronger partnerships" it stated "In particular, the development of partnerships between schools and Indigenous communities, based on cross-cultural respect, is the main way of achieving highly effective schooling for Indigenous students" (p.10). In the third area called "Strengthening early childhood education" it noted "Support for Indigenous children in the early years before school is particularly important to ensure a successful transition to schooling, which may involve a culturally different learning environment" (p.11). In the sixth area called "Promoting world-class curriculum and assessment" there is the following statement: "In addition, a focus on environmental sustainability will be integrated across the curriculum and all students will have the opportunity to access Indigenous content where relevant" (p.14).

The seventh section called "Improving educational outcomes for Indigenous youth and disadvantaged young Australians, especially those from low socioeconomic backgrounds" contains the headline statement: "Australian governments commit to working with all school sectors to 'close the gap' for young Indigenous Australians". The detail goes on to state:

> For Australian schooling to promote equity and excellence, governments and all school sectors must improve educational outcomes for Indigenous youth and disadvantaged young Australians and encourage them, their families and their communities to hold high expectations for their education.
>
> Educational outcomes for Indigenous children and young people are substantially behind those of other students in key areas of enrolment, attendance, participation, literacy, numeracy, retention and completion. Meeting the needs of young Indigenous Australians and promoting high expectations for their educational performance requires strategic investment. Australian schooling needs to engage Indigenous students, their families and communities in all aspects of schooling; increase Indigenous participation in the education workforce at all levels; and support coordinated community services for students and their families that can increase productive participation in schooling.
>
> Students from low socioeconomic backgrounds, those from remote areas, refugees, homeless young people, and students with disabilities often experience educational disadvantage. Targeted support can help disadvantaged young Australians to achieve better educational outcomes.

> Australian governments must support all young Australians to achieve not only equality of opportunity but also more equitable outcomes (p.15).

2.2.4 A spotlight in 2008

Gray and Beresford (2008) suggested there was a 'formidable challenge' in providing educational equity for Aboriginal and Torres Strait Islander children and young people. They pointed out the diversity of size of population centres where Aboriginal and Torres Strait Islander people resided as well as the impact of "the degree of dispossession from land" and colonialist policies and stated "One of the implications of this diversity for education is the inapplicability of universal solutions or programs" (p. 198). They identified the interaction of five factors governing Indigenous education: (1) Educational disadvantage normalised by the legacy of colonialism, (2) Past attempts at educational 'reform' have been embedded in racism, deficit theory and assimilation, (3) The limitations of traditional approaches to public administration highlighted by complexity, (4) The challenges of sustaining reform and (5) The impact of broader ideological currents in Indigenous affairs on education policy and practice.

2.2.5 A review in 2009

In 2009 the outcomes in the four year period of *Australian Directions in Indigenous Education 2005-2008* were reviewed and 14 recommendations presented covering the five domains as well as teacher education and a national education plan (Buckskin et al., 2009)

2.2.6 The Aboriginal and Torres Strait Islander Education Action Plan 2010-2014

The Action Plan included 55 actions across national, systemic and local levels and covered six domains: (1) readiness for school, (2) engagement and connections, (3) attendance, (4) literacy and numeracy, (5) leadership, quality teaching and workforce development and (6) pathways to real post-school options (Ministerial Council for Education, Early Childhood Development and Youth Affairs, 2010).

2.2.7 Closing the school completion gap for Indigenous students

This Resource sheet (Helme & Lamb, 2011) identified three main areas that contributed to increasing engagement, achievement and school completion among Indigenous secondary students: (1) a school culture and leadership that acknowledges and supports Indigenous students and families, (2) school-wide strategies that work to maintain student engagement and improve learning outcomes and (3) student-focused strategies that directly meet the needs of students at risk of low achievement or early leaving.

2.2.8 Review of higher education access and outcomes for Aboriginal and Torres Strait Islander people: Final report

The Review presented 35 recommendations of which numbers 4-9 addressed on "unlocking capacity and empowering choices" for pathways to higher education and numbers 15 and 16 focused on support for students from regional and remote areas. (Behrendt, Larkin, Griew, & Kelly, 2012)

2.2.9 Success in remote schools: A research study of eleven improving remote schools

This report identified seven main themes: (1) leadership is critical; (2) profound understanding of the importance of school–community partnerships; (3) a school culture built on high expectations for all students; (4) coherent whole-school approaches to evidence-based literacy and numeracy teaching; (5) building and sustaining teacher capacity to deliver whole-school practice; (6) empowering, supporting and engaging Aboriginal and Torres Strait Islander students to enhance their learning capacity; and (7) making learning content engaging, accessible and culturally responsive (What Works - The Work Program, 2012). Most of these themes have been incorporated into the areas addressed by this Literature Review.

2.2.10 Evaluation of the Aboriginal and Torres Strait Islander Education Action Plan 2010-2014

The Evaluation noted that the Action Plan had a universal approach and did not take into account the differences in contextual factors between remote schools and other schools, pointing out there were "few actions targeting national and systemic responses to issues associated with remoteness. … School case study information suggest that despite advanced and innovative practices adopted by many remote schools, gaps in literacy and numeracy and attendance outcomes remain significant" (ACIL Allen Consulting, 2014, p. iv). Moreover the Evaluation suggested that future endeavours be based on various principles including "Promote local flexibility: … schools require local flexibility to achieve agreed outcomes" and "Collaborate with parents and communities: sustain the focus on engaging with, and promoting shared decision-making among, parents and families of Aboriginal and Torres Strait Islander students" (p. v).

2.2.11 'Can't be what you can't see': The transition of Aboriginal and Torres Strait Islander students into higher education, Final Report 2014

This Report identified 11 challenges and constraints to transition into higher education and 15 enablers. In particular, collaboration by universities with schools and communities was seen as a key way to raise aspirations about attending university, otherwise 'you can't be what you can't

see'. The Report acknowledged the complex interactions between communities and universities, and noted these can involve cultural, social and political relationships (Kinnane, Wilks, Wilson, Hughes, & Thomas, 2014, p. 80).

2.2.12 Educational Outcomes of Young Indigenous Australians

This research tracked two cohorts from the Longitudinal Survey of Australian Youth (LSAY) – the first aged 15 in 2006 and the second aged 15 in 2009, but did not specifically address RRR issues. The authors modelled scores for the Programme for International Student Assessment (PISA) and then modelled various educational outcomes conditional on PISA, such as school dropout and year 12 completion, intention to attend university, ATAR request, university participation, VET participation. A key finding was reported: "There is no significant difference between the subsequent educational outcomes of Indigenous and non-Indigenous students *once we control for academic achievement at age 15*. This finding is robust across all our educational outcome variables" (Mahuteau, Karmel, Mayromaras, & Zhu, 2015, p. 2). The authors suggested that there would be substantial benefits on education outcomes after age 15 if the difference at age 15 between Indigenous and non-Indigenous students could be minimised. Hence the most effort to assist Indigenous students should be prior to age 15.

2.2.13 National Aboriginal and Torres Strait Islander education strategy 2015

This is a much shorter document than the Aboriginal and Torres Strait Islander Education Action Plan 2010-2014. It has same seven priority areas: (1) leadership, quality teaching and workforce development; (2) culture and identity; (3) partnerships; (4) attendance; (5) transition points including pathways; (6) school and child readiness; and (7) literacy and numeracy (Education Council, 2015).

2.3 Indigenous Primary School Achievement

For Indigenous students, the evidence suggests that a culture of high expectations in schools; strong student-teacher, and community relationships; and support for culture are also particularly important — all underpinned by strong school leadership (Productivity Commission, 2016, p. 2). A significant question was asked in the face of continuing poor results on academic performance (e.g. NAPLAN scores): "If government priorities are already aligned with what the literature suggests should be done to improve Indigenous students' literacy and numeracy achievement, why has there been no progress in closing gaps in achievement?" (p. 83). The background and answers to this can be found in the research outlined next.

2.4 CRC-REP Remote Education Systems project

The Cooperative Research Centre for Remote Economic Participation (CRC-REP) conducted a five-year Remote Education Systems research project, the key learnings of which were published as “Red dirt education” (Guenther, Disbray, & Osborne, 2016). An important question was “What is education for in remote communities?” The answer according to those who live there (as surmised by the authors) is that “education is not primarily about preparing young people for work; rather, it is to ensure that their language, culture and identity remain strong and that they maintain a connection to their land” (p. 51). Another important question was “What is educational success in remote communities?” The response here is that “educational success in remote schools is not primarily about Year 12 completion, retention or NAPLAN scores; rather, it is primarily about parent and community involvement in education” (p. 59).

The authors used the term “red dirt curriculum” as one that fits the context of a school in a remote community, aligns with the aspirations of remote community educators and can be meshed the Australian Curriculum (p. 68). Teachers who work in remote schools need to share in positive relationships with the Aboriginal and Torres Strait Islander staff in schools, along with the students and the students’ parents. “Successful teachers will bring traits such as passion, care, commitment, patience and respect and the ability to listen” (p. 77). One skill that is needful for teachers is training in teaching English as an additional language or dialect (EAL/D): “an important finding from our research points to the need for better trained EAL/D teachers at the pre-service and post-graduate level” (p. 82). One strategy for recruiting non-local teachers is that of community-based pre-service practicums: “These offer opportunities for students who are about to graduate to learn in remote communities and engage with community members before they apply for a position” (p. 83). One proposal offered is that of ‘reverse credentialing’:

> The real problem in remote communities is the lack of skills that non-locals have—that is, the lack of understanding of language, local culture and environment, relationships and protocols—and we believe that a good induction and professional development approach would allow local people to do the training for non-locals. … [This idea is] about providing a locally driven process that ensures non-locals have what they need to work effectively in the remote space (p. 84).

General literature recognises the key role of teachers and this report of learnings from the project emphasised that teachers need to be “contextually and culturally responsive”. The first aspect requires non-local teachers to reflect on who they are and how they can be flexible in the current situation: “Contextually responsive teachers bring a degree of self-reflexivity to their roles in schools and communities, being aware of the differences that present to them within

the context and responding with flexibility" (p. 87). Secondly, non-local teachers need to recognise the importance of language and culture to local people and actively incorporate these into schooling: "Culturally responsive teachers are those who understand their own culture, privilege the culture in which they work, facilitate use of local languages and involve local knowledge in teaching and learning" (p.87).

A variety of possible response by schools and education systems are outlined by the authors. These suggestions have a strong foundation of evidence from Aboriginal and Torres Strait Islander people in remote and very remote contexts and should be valorised in consideration of future changes to policies and practices.

2.5 Closing the Gap Prime Minister's Report 2017

The Report indicated very little progress: "we are only on track to meet one of the seven Closing the Gap targets this year" (Commonwealth of Australia, 2017, p. 4). Four of the seven targets relate to schooling/education:

- Achieve 95 per cent of all Indigenous four year-olds enrolled in early childhood education (by 2025).
- Close the gap between Indigenous and non-Indigenous school attendance within five years (by 2018).
- Halve the gap for Indigenous children in reading, writing and numeracy within a decade (by 2018).
- Halve the gap for Indigenous Australians aged 20-24 in Year 12 attainment or equivalent24 attainment rates (by 2020).

Only the last target is on track.

2.6 Inquiry into educational opportunities for Aboriginal and Torres Strait Islander students

The House of Representatives' Standing Committee on Indigenous Affairs was tasked to make the inquiry. During the 44th parliament there were 61 submissions. An Interim Report was tabled on 4 May 2016 (House of Representatives Standing Committee on Indigenous Affairs, 2016) and the Inquiry lapsed. Under the current parliament it was reactivated and received a further 36 submissions before submissions were closed. The Terms of Reference state:

> The Committee will inquire into and report on key aspects of educational opportunities and outcomes for Aboriginal and Torres Strait Islander students up to school leaving age, including but not limited to:
>
> - access to, participation in and outcomes of pre-schooling

- the provision of boarding school education and its outcomes
- access to, participation in, and benefits of different school models for indigenous students in different parts of Australia
- engagement and achievement of students in remote areas
- impacts on, and support for families and communities whose children experience different models of educational services
- best practice models, both domestically and internationally
- comparisons of school models in the transition to further education and employment outcomes (House of Representatives Standing Committee on Indigenous Affairs, n.d.).

2.7 Summary

Given the wealth of material available and the 2017 Inquiry by the House of Representatives' Standing Committee on Indigenous Affairs, this literature review does not set out sections on barriers or opportunities as these have been detailed in the documents mentioned in key elements in the review period. Given the focus is on RRR contexts, a number of documents need to be prioritised namely Success in remote schools: A research study of eleven improving remote schools (What Works - The Work Program, 2012), sections of the Evaluation of the Aboriginal and Torres Strait Islander Education Action Plan 2010-2014 (ACIL Allen Consulting, 2014) and the CRC-REP Remote Education Systems project (Guenther et al., 2016).

3 CURRICULUM AND ASSESSMENT INNOVATION IN REGIONAL, RURAL AND REMOTE SCHOOLS

3.1 Introduction

According to the Organisation for Economic Co-operation and Development (OECD), innovation is defined as the introduction of "new or significantly improved products, processes, organisation or marketing methods" (Organisation for Economic Development and Cooperation and Eurostat, 2005). Karkkainen (2012, p. 7) defined "curriculum" as follows: "Curriculum specifies what kind of knowledge, skills and values should be taught to students and why is that so, but it may also specify the desired ways of how students should be taught". This definition appears to carry the assumption of teachers being in control and imparting prescribed material to students who receive it passively and reproduce it when obliged so to do. It embodies the 'banking concept' of education – whereby teachers deposit knowledge in students (Freire, 1996). Curriculum commonly refers to an official written program from an authoritative body as distinct from an unwritten program. "Assessment" for the purpose of this literature review is defined as determining "whether or not young Australians are meeting important educational outcomes" (Australian Curriculum Assessment and Reporting Authority, 2016b). A significant question is "What are the "important educational outcomes" that are to be assessed?" This will be addressed later.

Research by OECD indicated that the education sector ranked fifth among 13 employment sectors in terms of having highly innovative jobs. More specifically, the education sector had the largest proportion (48%) of jobs involving innovation in knowledge or methods. "Innovation in knowledge or methods could include innovations in curriculum or assessment practices as well as, for example, changes in research methods in higher education" (Organisation for Economic Co-operation and Development, 2014, p. 1). The breakdown of innovative jobs according to the level of education where the job is sited was higher education: 60%, secondary education: 43% and primary education: 46% (Organisation for Economic Co-operation and Development, 2014, p. 2). This suggests that school teachers show less innovation with secondary students than with primary children.

This section of the review looks at a number of elements in the review period to identify some barriers to innovation regarding curriculum and assessment and to identify a range of possibilities.

3.2 Key elements in the review period

The Australian Labor Party (ALP) campaigned during the national election of 2007 with a

promise of an 'Education Revolution'. At the time of winning the national election, every Australian state and territory government was also Labor. This meant the national government had great political power to pursue its ideas. In 2008 the Council of Australian Governments (COAG) established the National Education Agreement and various National Partnerships about schooling (Council of Australian Governments, 2008). Further significant matters are described below: The Melbourne Declaration on Educational Goals for Young Australians, the Australian Curriculum, Assessment and Reporting Authority (ACARA), the Australian Curriculum, the National Assessment Program Literacy and Numeracy (NAPLAN), the My School website and the Australian Institute for Teaching and School Leadership (AITSL).

3.2.1 Melbourne Declaration and ACARA

The foundation document for schooling over the past decade has been the "Melbourne Declaration on Educational Goals for Young Australians" (Ministerial Council on Education, Employment, Training and Youth Affairs, 2008). This proposed two goals: Goal 1 – Australian schooling promotes equity and excellence and Goal 2 – All young Australians become (1) Successful learners, (2) Confident and creative individuals, (3) Active and informed citizens (pp. 6–9).

In the review period the most significant event regarding curriculum was the introduction of the Australian Curriculum. This was made possible by legislation in 2008 for the establishment of the Australian Curriculum, Assessment and Reporting Authority (ACARA). States and territories, rather than the federal government, are responsible for schooling. However, the federal government also wields power over education through funding arrangements. According to Harris-Hart (2010, p. 310) "Where the Rudd [federal] government could not constitutionally legislate a national curriculum they have legislated the establishment of ACARA to advance their national agenda". The functions of ACARA, as set out in Part 2, Section 6 of the Act ("Australian Curriculum, Assessment and Reporting Authority Act," 2008) are to:

a) develop and administer a national school curriculum, including content of the curriculum and achievement standards, for school subjects specified in the Charter;

b) develop and administer national assessments;

c) collect, manage and analyse student assessment data and other data relating to schools and comparative school performance;

d) facilitate information sharing arrangements between Australian government bodies in relation to the collection, management and analysis of school data;

e) publish information relating to school education, including information relating to comparative school performance;

f) provide school curriculum resource services, educational research services and other related services;

(g) provide information, resources, support and guidance to the teaching profession;

(h) perform such other functions that are conferred on it by, or under, this Act or any other Commonwealth Act; and

(i) perform such other functions that are ancillary or incidental to the functions mentioned in the preceding paragraphs.

3.2.2 Australian Curriculum

ACARA formulated the Australian Curriculum which consists of eight learning areas (English, Mathematics, Science, Health and Physical Education, Humanities and Social Sciences, The Arts, Technologies and Languages), seven general capabilities (Literacy, Numeracy, Information and Communication Technology Capability, Critical and Creative Thinking, Personal and Social Capability, Ethical Understanding, and Intercultural Understanding) and three cross-curriculum priorities (Aboriginal and Torres Strait Islander Histories and Cultures, Asia and Australia's Engagement with Asia and Sustainability) (Australian Curriculum Assessment and Reporting Authority, n.d.).

There is provision for recognition of other curricula. The criteria stipulate that the specified curriculum:

- aligns with the *Melbourne Declaration on Educational Goals for Young Australians;*
- assists students to 'become successful learners, confident and creative individuals, and active and informed citizens';
- meets principles and guidelines in the *Shape of the Australian Curriculum v.4 2012* document; and
- provides for students to learn the curriculum content and achieve standards described in Australian Curriculum.

Three well-established alternative curriculum frameworks have been assessed: International Baccalaureate Primary Years Program (PYP) and Middle Years Program (MYP), Australian Steiner Curriculum Framework and Montessori National Curriculum Framework documents (Australian Curriculum Assessment and Reporting Authority, 2016a).

3.2.3 The National Assessment Program and My School website

As has been indicated in the Introduction to the whole document, ACARA manages the National

Assessment Program. This includes domestic and international testing. The National Assessment Program – Literacy and Numeracy (NAPLAN) occurs annually for students in Years 3, 5, 7 and 9. The two main international tests are Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS). The 'MySchool' website was established in 2010, to enable comparisons of NAPLAN results between schools.

3.2.4 Australian Institute for Teaching and School Leadership

The Australian Institute for Teaching and School Leadership (AITSL) commenced operations in 2010. It took over the work of Teaching Australia which had started in 2005 (Australian Institute for Teaching and School Leadership, 2010; Bourke, 2011). In 2011 AITSL published the Australian Professional Standards for Teachers (Education Services Australia, 2011).

3.3 Barriers

The introduction of the Australian curriculum, the use of NAPLAN and international standardised tests such as TIMSS and PISA, along with the presentation of school information on the MySchool website appear not to have contributed to enhancing innovation in schools across Australia, and has not improved academic educational outcomes in regional, rural and remote schools. A survey of 941 teachers in South Australia and Western Australia (Thompson, 2013, p. 69) indicated that

> 67% of coded responses identified that NAPLAN was not having a positive impact on learning. In particular, teachers perceived that NAPLAN had a narrow focus, lacked relevance to students and their prior learning, lessened collaboration in the classroom and promoted approaches that lessened 'deep' learning. Many comments reported that it increased stress and pressure, did not enable inclusivity or timely feedback and is an exercise in test-taking rather than a task that promotes authentic learning.

This accords with a range of concerns expressed by various authors, one of whom called "for richer forms of accountability located between informed prescription and informed professionalism and local community involvement" (Lingard, 2010, p. 133). Lobascher (2011, p. 14) drew upon the changes in schooling in the USA and UK and noted "Research indicating that high-stakes testing has a negative pedagogical effect is extensive. … The dominant argument is that high-stakes testing discourages teachers from being creative, and instead encourages didactic teach-to-the-test approaches that reduce motivation". Hardy and Boyle (2011, p. 220) suggested that the focus on numbers through NAPLAN and MySchool does not pay attention to the context of students: "This approach erases the complexity of a broader conception of educational practices, and ignores the challenges of attending to the diverse needs of real learners, in real time, and in real places". Klenowski and Wyatt-Smith (2012, p. 76) appealed for the use of "alternative systems of accountability that have been described as more intelligent

and that recognise the complexities of assessment purposes, modes, conditions and contexts". Lingard, Creagh and Vass (2012, p. 326) draw on the work of Power and Frandji and point to the peril that occurs "from decontextualizing schooling from the broader socio-economic, political and cultural settings within which it is located". Among these concerns are emphases on the importance of context and place.

More specific to the focus on rural, regional and remote schools is a survey of leaders of these sites and distance education service providers who indicated that implementing the Australian Curriculum was limited by lack of the following: information, funding, access to curriculum experts, time for teachers to prepare, relief staff, professional development and time for production of resources for distance education (Halsey, Drummond, & van Breda, 2010, p. 2). Similar results were found two years later by Drummond (2012) who noted four factors affecting the implementation of the Australian Curriculum in rural schools: finance, staffing, level of consultation, and time. Roberts (2013) indicated that the metropolitan orientation of the Australian Curriculum along with the individual stance of teachers regarding the role of place-based curricula impacted negatively on the manner in which the Australian Curriculum is put into practice in a rural school.

3.4 Possibilities

3.4.1 Place

The introduction of the Australian Curriculum was not without controversy. Reid (2011, p. 22) emphasised the significance of space and place and cautioned against the prescriptive nature of the Australian Curriculum to insist on sameness. She expressed concern that the Australian Curriculum failed to pay attention to the "particularities of the place where they [teachers and pupils] are teaching, learning and living". Roberts suggested that the Australian Curriculum endorses a move "towards an impersonal and placeless curriculum" (Roberts, 2013, p. 90). He also pointed out that a "separation of curriculum and pedagogy works against place-conscious teaching in that is places knowledge on one pedestal and teaching upon another while suggesting that knowledge is fixed and uncontestable and teaching [is] a set of skills that can be enacted regardless of context" (p. 89).

Some suggest this is a manifestation of a neoliberal, globalized vision which portrays education as characterised by standardisation and placelessness and which simultaneously presents a rural deficit discourse and thus has an embedded assumption that the purpose of schooling is 'learning to leave' and so contributes to rural depopulation (Corbett, 2005, 2006, 2007b, 2009a, 2009b, 2009c, 2010, 2013a, 2013b, 2014a, 2014b, 2015, 2016b; Eppley, 2011; Faircloth, 2009; Forsey, 2015; David A Gruenewald, 2003; David A. Gruenewald, 2003; Gruenewald, 2005; Gruenewald, Koppelman, & Elam, 2007; Gruenewald & Smith, 2014; Kelly, 2009; McInerney,

Smyth, & Down, 2011; G. A. Smith, 2007; Stockard, 2011; Woodrum, 2009). These authors also argue for adopting a foundational premise of place-based learning, which prioritises the particularities of the lives of children and young people, and thus has an ontological fit.

Valourising place-consciousness is inherent in the first goal of the Melbourne Declaration (Ministerial Council on Education, Employment, Training and Youth Affairs, 2008) which states "that all Australian governments and all school sectors must: – provide all students with access to high-quality schooling that is free from discrimination based on … geographic location". Furthermore, the ontological rationale of place-based learning is expressed in the second point " – ensure that schools build on local cultural knowledge and experience of Indigenous students as a foundation for learning and work in partnership with local communities on all aspects of the schooling process …" This clearly asserts that the local context is the foundation of learning. If this is a fundamental principle of schooling for one cohort of students then one would assume that it should inform and shape education for *all* students. Indeed, to deny this *ground* of learning to non-Indigenous students is to deliberately disadvantage them.

3.4.1.1 Examples of curriculum innovation related to place

At the start of the review period, Bartholomaeus (2006) provided three examples of place-based education: community history in an Aboriginal community, an aquaculture course with an associated VET course leading to local employment in response to a request from local industry, and viticulture and wine-making as a bridge to local employment. Farm safety – regarding danger from snakes, drowning in dams and use of farm machinery, tractors and motorcycles – is another aspect of place-based learning which warrants attention (Barr, Saltmarsh, & Klopper, 2009). McInerney, Smyth and Down (2011) discussed place-based education and provided three examples: one school restored a boardwalk in their town in conjunction with local service clubs and prepared artistic and historic displays; another school enrolled students in a TAFE course on community studies and students were involved with disabled children at a special school, residents at an aged care home, a day care centre and a youth refuge; another school established horticulture enterprises in which they sell products to industry and also run a café open to the public. Bartholomaeus (2013) advocated for place-based literacy learning for English with middle school students. She provided two examples of work produced in Aboriginal communities, one from an urban environment and another of creating biographies of local people.

Decisions about the timing of terms and breaks may also take into account local matters. The Northern Territory has historically had a four week break in the middle of the year during the 'Top End' dry season, as this fitted with cultural movements of Aboriginal and Torres Strait Islander people, and fitted with a cooler season in central Australia. A new policy has been advanced which is contrary to place-based principles, and the break will be shortened from

2018 to three weeks on the rationale that a shorter break will not disrupt students' academic learning (Lawford, 2015). However, in keeping with a place-based learning ethos Gunbalanya community will be permitted to start early during the wet season when it is often cut off (Trevaskis, 2012) and Lajamanu school will also have unique times (Northern Territory Government of Australia, 2016).

3.4.2 Assessment

It seems that in the current focus on NAPLAN, TIMSS and PISA the two goals of the Melbourne Declaration have disappeared off the radar. It is important to restate them here (Ministerial Council on Education, Employment, Training and Youth Affairs, 2008, pp. 6-9): Goal 1 – Australian schooling promotes equity and excellence and Goal 2 – All young Australians become (1) Successful learners, (2) Confident and creative individuals, (3) Active and informed citizens. It also seems that most of the seven general capabilities of the Australian Curriculum have not even appeared on the radar of "important educational outcomes" that require formalised assessment (i.e. Literacy, Numeracy, Information and Communication Technology Capability, Critical and Creative Thinking, Personal and Social Capability, Ethical Understanding, and Intercultural Understanding). The focus on assessment has been on literacy and numeracy and a default definition of a "successful learner" can be deduced as someone who produces results at or above the "national minimum standards" in NAPLAN tests.

A critique of current assessment approaches suggested that "the most ambitious and vital aim of schooling [is] for every student to gain at least a year's growth for a year's input" (J. Hattie, 2015a, p. 1). Hattie stated that the focus should be on "interventions with an effect size of at least 0.4, the average expected effect size for one year of progress in school" (2015a, p. 1). He expressed concern that "too often, … curriculum expectations are stipulated in 'years', as if all students in a year cohort are working at the same level" (p. 13) and pointed to the reality that in each year level there is a spread of students' performances. Hattie advocated change to both the curriculum and assessment and claimed that

> it is still possible to ameliorate the worst damages of grouping children as if they were all working at the same achievement levels. We can do this by implementing a levels-based curriculum with levels-based assessments (where students work at their level irrespective of their year in school or age) rather than a year-based curriculum (p. 13).

He stated, "there is little evidence that creating more achievement tests will help much. … as long as they are focused on providing information about student achievement, they will continue to tell us little" (p. 16). He claimed that "thermometer testing" was a poor use of funds.

> Until we see tests as aids to enhance teaching and learning and not primarily as thermometers of how much a student knows now, on this day, on this test, then developing more tests will add little and will remain an expensive distraction (p. 16).

Hattie indicated the purpose of assessment should be on providing information to teachers and school leaders about their impact (p. 16). In a companion work Hattie (2015b, p. 5) claimed "Perhaps most urgent is the need to reframe the narrative away from standards and achievement and to move it towards progression". He proposed a two-by-two matrix illustrating progression and proficiency, and suggested that "optimal schools / students" were those that had both high progress / growth and high proficiency / achievement.

Masters (2017) recently stated a similar view that emphasised progression: "We need to move away from focusing on what grade a child will get at the end of a year, to assessing the progress that students make over time". He pointed out that high scores on tests do not equate with potential progress: "some students "receive high grades on the middling expectations for their age group without being overly stretched or challenged. There is evidence that least year-on-year progress is often made by these students". Masters suggested that successful learning is not indicated by completing easy material "but depends instead on providing every learner with well-targeted, personalised stretch challenges". He recommended monitoring an individual's learning progress over time. This approach does not define learning with regard to year-levels. Rather, "successful learning is defined as the progress or growth that students make over time". These two well-respected authors – Hattie and Masters – have both proposed changes in the purpose of and approach to assessment.

In one jurisdiction Hattie (2015b) made a significant observation with regard to the focus of this literature review regarding RRR schools. He identified a situation where

> it was discovered that the city schools where most country parents sent their children to board were in the 'cruising' zone, whereas their local schools were 'growth' schools. Parents had been conned into thinking the 'better schools in the city' were more effective than their local schools because they viewed high-achieving schools as more powerful than schools that could progress students at a faster rate of learning (pp.8-9).

In other words, children attending city boarding schools were failing to realise an appropriate level of progress but the children in country schools were exceeding projected rates of progress. This suggests that there are significant benefits to local schooling for RRR students. Hattie's next point is about the importance of expectations and he stated, "the greatest influence on learning is the expectations of the students and the teachers. … It should be a major role of schools to assist children in exceeding their expectations" (2015b, p. 11). It may be deduced then that teachers in local RRR schools had high expectations of their students and helped the students

fulfil those high expectations.

Hattie (2015b) further advocated developing new assessment and evaluative tools to provide feedback to teachers, and indicated these should include a set of attitude and achievement attributes. Moreover, he pointed to the need of

> more measures of learning, such as the extent to which students can engage in collaborative problem-solving, deliberate practice, interleaved and distributed practice, elaboration strategies, planning and monitoring, effort management and self-talk, rehearsal and organisation, evaluation and elaboration and the various motivational strategies – the 'how to' aspects of learning (p.13).

Many of these could be aligned with some of the general capabilities of the Australian Curriculum, particularly Information and Communication Technology Capability, Critical and Creative Thinking and Personal and Social Capability.

3.4.2.1 Examples of innovation impacting assessment

The following are examples of innovative approaches that affect assessment that are being implemented in Australian schools (The Educator, 2015, 2016). These schools are not necessarily from RRR locations. However, lessons could be learned and approaches modified to such situations.

1. Canberra Grammar, ACT has a focus on intercultural understanding through engagement with Asia.
2. Glenroy Public School, NSW operates with 'class communities', each with a cross section of Years 3, 4, 5 and 6.
3. International Football School, NSW is a specialised school for elite young sportsmen and women.
4. Ipswich Grammar Qld fosters strength of character.
5. John Monash Science School, VIC uses classes of 50 students and two teachers, and integrates knowledge across arbitrary subject boundaries.
6. Merrylands East Public School, NSW operates without bells or class timetables.
7. Oatley West Public School, NSW prioritises values, student wellbeing and mental health.
8. Templestowe College Lower, VIC has no year levels, so students study at their own ability level with an individualised learning plan.

9. Yass High School, NSW implements integrated learning for cross-curriculum experiences.
10. Hale School, WA has adopted a problem-based blended learning paradigm.
11. Lomandra School, NSW concentrates on developing self-management and self-esteem through extensive off-campus activities.
12. Nossal High School, VIC uses a range of assessment and reporting practices, including peer and self-assessment.
13. Penola Catholic College, VIC provides Content and Language Integrated Learning programs in which several subject areas are integrated and delivered and assessed in a language other than English.
14. Snowy Mountains Grammar School, NSW suspends the usual timetable on one day and students participate in one of 18 'Academies of Excellence' learning with students across all year levels.
15. Wellers Hill State School, QLD operates a bilingual program in which all Year One students study Australian Curriculum in Japanese for half their time at school.

4 INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN REGIONAL, RURAL AND REMOTE SCHOOLS

4.1 Introduction

In the review period a variety of technologies have been used in the provision of schooling. The School of the Air offers schooling to geographically isolated pupils. Historically this has been done through the use of high frequency radio. Now it also uses satellite links (Australian Government, 2016). Common use of the term ICT regarding schooling refers to the use of computing devices or digital technologies. Initially devices were desk-top computers however, increasingly mobile devices are being used – such as laptops, tablets and mobile phones. In some places e-book readers are used in schools.

4.1.1 Advocacy for ICT in education

A range of international agencies and organisations note the broad impact of ICT and endorse the potential of ICT for education generally. Quotes from two organisations are cited below:

> UNESCO considers that ICTs can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development as well as improve education management, governance and administration provided the right mix of policies, technologies and capacities are in place (United Nations Educational Scientific and Cultural Organization, n.d.):
>
> A growing number of projects have shown that mobile technologies provide an excellent medium for extending educational opportunities to learners who may not have access to high-quality schooling (Broadband Commission for Digital Development, 2015, p. 50).

UNESCO advocated the use of mobile technologies for educational purposes: "Given the ubiquity and rapidly expanding functionality of mobile technologies, UNESCO is enthusiastic about their potential to improve and facilitate learning, particularly in communities where educational opportunities are scarce" (United Nations Educational, Scientific and Cultural Organization, 2012). In support of this, UNESCO produced a working paper series on mobile learning, which included 13 books. One was titled "Mobile learning for teachers: Global themes" (M. West, 2012) and included these points:

- Mobile phones can expand educational access
- Mobile phones can support instruction, administration and professional development
- Teachers are crucial to mobile learning efforts.

A second book was titled “Turning on mobile learning: Global themes” (Mark West, 2012b) and noted messages from the literature including:

- Existing education policies have yet to embrace the potential of mobile learning
- Mobile learning can help reach marginalized populations and improve education systems
- Questions of access and equity loom large
- Diverse partnerships are required to sustain and expand mobile learning initiatives.

A third book was titled “Mobile learning and policies: Key issues to consider” (Vosloo, 2012) and pointed to five main areas with regard to teaching, learning and education planning and management: (1) content, (2) learning contexts, (3) curriculum and assessment, (4) professional development and (5) education planning and management.

The New Media Consortium is recognised as a global authority in predicting trends, challenges and technological developments likely to bring changes to educational contexts. A recent report on schooling (Adams Becker, Freeman, Giesinger Hall, Cummins, & Yuhnke, 2016, p. 1) suggested that “Makerspaces and online learning are both expected to be widely adopted … to encourage students to take ownership of their education by creating and provide them with ubiquitous access to digital tools, discussion forums, rich media, and more”. The report also noted “As the number of computer science jobs are expected to proliferate in the next five years, there is a need for students to learn coding and programming skills, which have proven to bolster problem-solving, creativity, and critical thinking skills”.

An Australian study of tertiary students stated, “Laptops, smart phones and tablets devices appear to be dominant technologies being used by students for a range of learning activities” (Murphy, Farley, Lane, Hafeez-Baig, & Carter, 2014, p. 343). Another report on tertiary education in Australia (Adams Becker, Cummins, Davis, & Yuhnke, 2016) pointed to the increasing use of blended learning, with both face-to-face and online approaches. Many institutions are redesigning buildings to provide various learning spaces and upgrading campus Wi-Fi so students can participate in informal collaborative learning on mobile devices.

4.2 Key elements in the review period

During the review period there have been three Regional Telecommunications Reviews (2008, 2012, 2015) that address ICT issues in RRR areas. Currently there is a call for submissions to the Telecommunications Reform Package. Significant global technological advances can be identified with the growth of the Internet / World Wide Web, the use of cloud storage services, and the release of two mobile devices by Apple: the iPhone in 2007, and the iPad in 2010. Mobile phones are ubiquitous; most people have smartphones, many have laptops and tablets.

Regarding mobile network services the following key events occurred: in 2007 the then government approved Optus and Elders to form a service provider, however, in 2008 the new government halted this venture; also in 2008 Telstra closed down Code Division Multiple Access network services; in 2011 Telstra introduces 4G / Long-Term Evolution services; and at the end of 2016 Telstra stopped offering 2G services.

The National Broadband Network (nbn) was announced by the then government in 2009. The initial idea was to connect 90 per cent of all premises with optical fibre (fibre-to-the-premises) and all other premises with wireless and satellite services. Under the current government the strategy changed to 'multi-technology mix'. The implementation of the nbn and satellite services has had problems, particularly for non-metropolitan customers.

The Regional, Rural and Remote Communications Coalition delegation met members of parliament (20-21 March 2017) and presented a call for five key outcomes (Australian Communications Consumer Action Network, 2017):

- A universal service obligation that is technologically neutral and provides access to both voice and data
- Customer service guarantees and reliability measures to underpin the provision of voice and data services, to deliver more accountability from providers and nbn
- Long term public funding for open access mobile network expansion in rural and regional Australia
- Fair and equitable access to Sky Muster for those with genuine a need for the service, and access which reflects the residential, educational and business needs of rural and regional Australia
- Fully resourced capacity building programs that build digital ability, and development of effective problem solving support for regional, rural and remote businesses and consumers.

4.2.1 ICT initiatives in schooling

In 2008 the Australian Federal Government commenced the Digital Education Revolution (DER) (Gillard, 2008). This provided laptops to public school senior secondary pupils, along with improved broadband and increased skills for teachers and students. The use of digital technologies in the RRR context was seen as vital: "Developing digital schools, networked communities and e-learning, which is aligned with DER, is indispensible [sic] for regional, rural and remote Australia" [Courtney & Anderson 2010, p. 8]. Funding has ceased, yet most schools have instigated hire or purchase schemes so individual pupils have access to laptops or tablets across all year levels. Many schools also have class sets of devices. There are many software programs and apps (applications), including social media that can be used for educational

purposes. The Australian Curriculum includes two subjects related to technologies: Design and Technologies and Digital Technologies (Australian Curriculum Assessment and Reporting Authority, n.d.). Along with the Australian Curriculum, the Government established a website with digital resources for teachers called “Scootle”. So too, the Department of Education and Training supports the Australian Broadcasting Corporation educational website called “Splash” through which pupils and parents can access videos, audio clips and games.

4.2.2 Students learning outcomes and ICT

An analysis of global PISA data between 2000 and 2012 indicated that “PISA results show no appreciable improvements in student achievement in reading, mathematics or science in the countries that had invested heavily in ICT for education” (Organisation for Economic Co-operation and Development, 2015, p. 15). This report prompted a deal of discussion internationally.

4.2.3 Teachers’ ICT skills

Of the 19 nations that took part in the 2012 Survey of Adult Skills, Australia was ranked first regarding percentage of education workers with good ICT and problem-solving skills (Organisation for Economic Co-operation and Development, 2016).

The DET funded 13 projects under the Broadband Enabled Education and Skills Services Programme, some of which are specifically addressed to schooling (Department of Education and Training, 2015).

4.3 Barriers

A longitudinal study of Queensland RRR senior high school girls’ attitudes towards ICT not only noted negative perceptions but a range of barriers to use of ICT in RRR schools: “Internet connections were slow; server/network breakdowns were high; technical assistance was poor; teacher expertise and competence was insufficient; computers were old and software dated, which was exacerbated by a long wait for repairs to be completed” (Courtney & Anderson, 2010, p. 8). Attempts at professional development of teachers to enhance the use of ICT in science in rural schools were hampered by lack of school support and online support (Hubber, Chittleborough, Campbell, Jobling, & Tytler, 2010).

4.4 Possibilities

A longitudinal initiative that began in 2002 in small schools in remote villages in Canada was designed to slow people leaving villages and prevent the closure of these small schools as well as enhancing teachers’ professional development and students’ learning (Allaire et al., 2011).

There are now over 120 schools as part of a remote network. Teachers affirmed the benefits of collaboration for them, and indicated there were advantages for students such as increased motivation, deeper understanding, global awareness and friendships that continue from primary to secondary school (p. 125). Parents of the students see the social benefits of the initiative: "Parents who are the most knowledgeable about the [initiative] see it as a growth opportunity for children to become world citizens" (p. 129). This example from Canada could be modified for the Australian RRR context.

According to an OECD report (2015) the increasing use of mobile devices in schools between 2009 and 2012 meant that

> many students no longer had to move to separate computer labs, school libraries or specific locations within the classroom to access computers; rather, computers could be available everywhere, anytime, thus expanding the range of activities and situations in which they could be used.

In a UNESCO report (2015, p. 4) it was stated that teachers can be empowered by "(1) reinforcing institutional capacity of teacher training institutions and schools; (2) continuously developing teachers' pedagogical and digital competencies; and (3) integrating ICT into the curriculum and assessment arrangements". UNESCO (2011) developed an ICT Competency Framework for Teachers.

In addition to a general perspective of using ICT in RRR school contexts, there are particular advantages for some cohorts of students. A literature review covering the period 2002-2012 has identified benefits from the use of ICTs for students with physical disabilities, such as motor, speech, visual, and hearing impairment (Lidström & Hemmingsson, 2014). ICTs can be used "to compensate for the students' difficulties and to practise with the help of the ICT to increase functional capacity" (p. 263). IPads are being used at Aspect Hunter School to support children with autism in achieving maximum educational engagement (The Educator, 2015). Students in rural schools with physical and social challenges should be provided with appropriate ICTs to assist in their educational progress.

ICTs can be used in RRR schools to assist in student teachers' practicals, as it is possible to either live-stream or record classroom interactions for supervising staff from the training institution to watch. A number of benefits are evident: staff don't have to travel to the RRR sites, the pre-service teachers are not "put off" by the presence of the staff member in the classroom and recordings can be used as exemplars to help other student teachers (Romeo, Gronn, McNamara, & Teo, 2012).

4.5 Summary

There are many possible uses for ICT in RRR schools. However, there are two main hindrances: lack of expertise of teachers and restricted bandwidth. An issue that causes great frustration to senior students is the inability to do the work they are set due to filters, firewalls and prohibited sites.

5 SCHOOL CULTURE IN REGIONAL, RURAL AND REMOTE SCHOOLS

5.1 Introduction

This section discusses the literature during the review period (2006-2016) on school culture in regional, rural and remote (RRR) schools. It identifies some barriers to innovation regarding school culture and also identifies a range of possibilities.

5.1.1 Methodology

Searches were conducted using university library search facilities, as well as Google and Google Scholar for documents from 2006 to 2016. The literature search proved difficult- either resulting in too much information that was hard to discern relevance or too little. Initial peer-reviewed literature was searched using under title = "school culture", between the dates 2006 to 2016 resulted in 3,498 articles of which 1,268 were from peer reviewed journals. Paradoxically when the search includes 'rural' in the title, the results were 12 peer-reviewed articles, none of which concerned Australian schools.

However, school culture is deeply connected (both implicitly and explicitly) to much of the literature on schools, especially with regard to school improvement. This makes a search on school culture difficult because although it is included in much literature, it may not be listed as a keyword or in the title (for example other words are generally used such as: successful, connecting, communities, collaborating, improving and leadership). Therefore this review is not an exhaustive study of the literature but rather aims to discuss some of the main themes surrounding school culture as deemed particularly relevant to regional, rural and remote schools in Australia found in the searches above.

5.1.2 What is school culture?

The Merriam Webster dictionary describes culture as "…the set of shared attitudes, values, goals, and practices that characterizes an institution or organization" and "the customary beliefs, social forms, and material traits…the characteristic features of everyday existence… shared by people in a place or time". This suggests that the real aspects of a school's culture are unseen, somewhat elusive and often explained as 'it's just the way we do things here'. The Great Schools Partnership (GSP) Glossary of Education Reform states that school culture is deeply contextual in time and place and shaped by students, community and school leaders and staff. Vescio, Ross and Adams (2008) in their review of literature concerning professional learning communities (PLCs) state that school culture is reflected in the school environment and therefore also encompasses "the physical and emotional safety of students, the orderliness of classrooms and public spaces, or the degree to which a school embraces and celebrates racial,

ethnic, linguistic, or cultural diversity" (GSP, 2013).

Much of the literature surrounding school culture is associated with school improvement (with changing school culture often implicit or explicitly stated as a required part of this improvement) (Organisaton for Economic Cooperation and Development, 2015). Researchers describe this as a type of 'positive culture for purposeful learning' and that it can be mobilised for school improvement (Elmore, 2007; Fullan, 2011, 2016; J. Hattie, 2015a, 2015b; G Masters, 2012). Many researchers argue that school culture is key to improving day-to-day practices (Elmore, 2007) and reduces "in-school difference by resourcing and privileging collaborative expertise" (J. Hattie, 2015a, p. 4). In Harris, Caldwell and Longmuir's (2013) review of literature on trust in school culture, they describe culture as a form of capital that can be mobilised for school improvement stating "when schools have strong social capital as characterized by high trust and frequent interactions between teachers, student achievement scores improve" (Leana in Harris et al., 2013, p. 12).

5.2 Systems and practice

Culture affects structures and structures influence culture. Many (here and overseas) argue that the current educational system is still heavily reliant on an 'isolationist' culture in the way schools operate and teach and this hinders capacity (Elmore, 2007; Fullan, 2011; Harris et al., 2013; J. Hattie, 2015b; G Masters, 2014; Stoll, Bolam, McMahon, & al, 2006; Vescio et al., 2008). However, more recently, a culture of greater collaboration has been seen as more desirable, which requires both structures and cultures to change simultaneously (Organisaton for Economic Cooperation and Development, 2015). For example, teachers need a coordinated block of time in the timetable if they are to meet for a collaborative project. Consequently, there is a push for schools to show that they have a positive culture that supports improved student learning. There are tools that have been developed (such as the National School Improvement Tool) and schools can also hire researchers and advisors to check they are changing their school culture to a more collegial style focussed on improving student learning and informed by data (Australian Council for Educational Research, 2012).

However Elmore (2007) argued that education is complex and "systemic problems are not amenable to piecemeal solutions" (p. 1). He further adds

> Systemic strategies work to the degree that they change not only the visible features of the system, but also the values, beliefs, and expectations of the people who work in the system and their daily practice. (Elmore, 2007, p. 1)

Fullan (2011, 2016) argued that the system that schools sit within is a strong driver of school culture. He argues that evidence shows us that the wrong drivers do not support effective school cultures (Fullan, 2016). According to Fullan (2011), the wrong drivers are: accountability,

individualism, reliance on technology (to solve pedagogical issues) and fragmented policies (p. 5). He argued that the right drivers (capacity building, collaboration, group quality and systemic policy) at the national level are those that foster the intrinsic motivation and energy of all teachers and students and that these drivers will change day-to-day practice for improved student learning (Fullan, 2011, p. 3).

Masters (2014, p. 1) added that "international efforts to understand differences in countries' performances are providing insights into national policy settings that can make a difference (either positively or negatively) to levels of educational quality and equity in a country". Setting the right theoretical underpinnings on policy encourage school reforms that actually work at addressing student outcomes. He adds that evidence shows this is "…noteworthy because greater between school differences tend to be associated with lower overall levels of national performance." (p. 5).

> High-performing school systems work to ensure that resources (money; high quality teachers and leaders) are equitably distributed across all schools. They also work to align and focus all levels of the system on supporting and enhancing the quality of on-the-ground, day-to-day practice (G Masters, 2014, p. 7).

Corbett (2016a) argued that there are additional layers of complexity in the drivers behind education for RRR areas that need further consideration as core elements in any efforts to change school cultures or improve educational outcomes for students in these areas. Firstly, he points out that rural space and places are relatively absent except in deficit discourse regarding education. He then further argues that rural places are becoming increasingly diverse with equally diverse sets of aspirations but that current thinking is that much of the 'rural' fails to "aspire appropriately" and "align aspirations with menus of educational opportunity available in a given time and place" (p. 276). High aspirations "suggest an orientation to the future" (p. 271) but neoliberal metro-centric based "educational apparatus" appears "geared to mobilize its products away from the margins and into the cities" (p. 271). Therefore, rural is marginalized, devalued, disadvantaged and problematic in this discourse. This has created a system where the key philosophical and spatial drivers within education are the wrong drivers in order for RRR areas and education to thrive (Corbett, 2016a).

Harris, Caldwell and Longmuir (2013) argue that implicit to the capital of school culture is trust; just like an engine needs oil, trust lubricates the mobilisation of capital – it is the "lifeblood of success" (Harris et al., 2013, p. 3). They argue there are four types of trust: self trust, relational trust, structural trust and transactional trust of which structural and relational trust in particular are key to school culture. High levels of structural trust within countries can inform other types of trust (Harris et al., 2013, pp. 7-9). Harris, Caldwell and Longmuir note that there is evidence that high stakes testing is a sign of low trust regimes and endangers levels of structural trust as a

broad level, which also affects relational trust in schools.

Trust also "… takes years to develop and a moment to lose" (Walker, Kutsyuruba & Noonan 2011 in Harris et al., 2013, p. 6). There is a strong correlation between trust and school improvement (Bryk & Schneider in Harris et al., 2013, p. 6). Harris et al. (2013) also argue "creating a safe space within schools is key to developing innovative, creative and collaborative practices that directly enhance student achievements" (p. 3). Relational trust is particularly relevant within literature on school culture. Stoll et al. (2006) provided the following example.

> Teachers are unlikely to participate in classroom observation and feedback, mentoring partnerships, discussion about pedagogical issues, curriculum innovation, unless they feel safe. Trust and respect from colleagues is critical (2006, p. 239).

Barley and Beesley in their study of 21 high-performing, high-needs rural schools in central United States also noted that leader and teacher passion was implicit to building positive school culture (Barley & Beesley, 2007). They also noted that there appeared to be a correlation between positive school culture and staff retention in the schools they studied. They argued that all of the rural high performing schools (as defined by literacy and numeracy test results) they investigated had low transient populations thereby allowing time for trust between school and community to build. In addition**,** successful small schools "capitalize on the closer relationships that can be established among smaller faculties and teacher connectedness to the community and their personal investment in the school" (Barley & Beesley, 2007, pp. 9-10).

5.3 The role of leadership in mobilising school cultural capital

Many researchers have argued that leadership is key to moulding and mobilising school culture (Harmon & Schafft, 2009; Harris et al., 2013; J. Hattie, 2015b; Organisaton for Economic Cooperation and Development, 2015; Roberts, Downes, Cooke, Heiner, & Caffery, 2014; Starr & White, 2008; Wildy & Clarke, 2011). Harris et al. (2013) argued that leaders must be perceived as competent.

> A substantial amount of education research appears to align with the view that the development of a culture of trust relies not only on the institutional mechanisms, policies and procedures that a leader implements but also the behaviour and attributes of the school leader " (p.22).

Thus, successful leaders are 'enablers'. They mobilise school culture to improve educational outcomes for students through the use of their own ability to develop reciprocal trust, their ability to strategise and draw on their own passion to develop and release that of others (Harris et al., 2013, pp. 7-8). They make relationship building a priority and they make available organisational elements (e.g. time and space) necessary for this to occur. Or as Fullan states

they “use the group to change the group” (Fullan, 2016). However, he also noted this also takes considerable time (Fullan, 2011).

J. Hattie (2015a) argued that leaders need to be “instructional leaders” rather than “transformational leaders” (p.23-24). He states that we need a system and culture that empowers leaders and teachers to focus on student outcomes. Key to this is to reduce in-school variability through the development of collaborative expertise informed by measuring student progress. He argues that within schools, leaders are key to implementing this and that we need to change from the “lonely professional model” of teacher work to collaborative practice based on student learning (J. Hattie, 2015b, p. 23).

5.4 Regional, rural and remote issues, barriers and innovations

There are many issues that bear relational impact on RRR school culture at global, national, local and within school levels. Many of these issues are also evident in other countries indicating that they are systemic and complex (Organisaton for Economic Cooperation and Development, 2015). Starr and White (2008) in their research involving intensive data collection (via interviews, focus groups, discussion groups and observations) with 76 principals from small rural government schools across rural Victoria, group these into macro, meso and micro impacts.

Many RRR areas in Australia (generally those where the local economy is heavily reliant on agriculture, horticulture, such as dry-land farming areas or traditional industry) are affected by declining economies and populations. Results of this have included growing disparities in RRR areas, and reduced services and amenities. Alston (Alston, 2004a, 2004b), in her studies of sustainability in rural places, argued that the reduction of amenities has been out of proportion to the movement of people, thereby further compounding the issues. Corbett (Corbett, 2016a) and Harmon and Shafft (2009) argued that metro-centric policy does not take into account the needs of RRR areas and hinders RRR development and the provision of education. These issues also result in school consolidation, an exodus of youth and difficulty in attracting and retaining professionals in affected RRR areas and overall in communities with complex, multiple disadvantage levels (Wildy & Clarke, 2011).

Overseas studies in affected rural areas have also argued these issues impact at a macro level (Barley & Beesley, 2007; Calabrese, Hester, Friesen, & Burkhalter, 2010). Calabrese (2010) also points out that these macro level issues result in disaffection and marginisation, thus impacting on the development of drug sub-cultures in low-income areas. Wildy and Clarke (2011) in their literature review of ‘Innovative Strategies in Small and Remote Schools’, argued that in disaffected RRR schools, academic and social achievements of students are uneven and absenteeism and suspension rates are high. Harmon and Shafft (2009) pointed out that the wellbeing of community and students are inextricably linked and therefore place matters

deeply.

Harris, Caldwell and Longmuir (2013) argued that overall constraints to improving school culture include time, context (the additional barriers of distance and isolation and cultural diversity), lack of confidence in community, lack of tenure for school staff, lack of support and lack of trust resulting in resistance of some staff. Trinidad & Broadley (2010) also argued the lack of access to professional development impacts negatively on school culture and improvement. Wildy and Clarke (2011) note that whilst distance in RRR areas can be mitigated using technology, current "broadband access affects the level, frequency and quality of the contact" (p. 7).

Other barriers at the meso level include the continuing centralisation of accountability but decentralisation of administrative compliance work to the local level (Starr & White, 2008; Wildy & Clarke, 2011). This affects all schools but in particular small schools (defined as <100 students) due to issues of critical mass (Wildy & Clarke, 2011). Wildy and Clarke (2011) identified that small schools account for 25% of schools in Western Australia, Queensland, South Australia & Victoria. In addition, "nearly half of NT schools cater for fewer than 100 students" (Wildy & Clarke, 2011, p. 1). The vast majority of these small schools are in RRR areas. Starr and White (2008) argued that administrative requirements have a disproportionate effect on small schools as there is less staff to cover the same reporting requirements.

5.4.1 Leadership and staff retention

As identified in the literature, leadership is key to improving school culture. However, Starr and White argue that there are there are additional barriers for Principals (and teacher/leaders) in RRR areas and in particular, small schools. Both Starr and White (2008) and Wildy and Clarke (2011) found that principals indicate that under-resourcing does not adequately recognise lower critical mass and associated increased costs in small schools. Other barriers are identified as: work intensification, role multiplicity (through combined leadership, administrative and teaching roles), school viability, administrative burden and abandonment of equity policies in education (Starr & White, 2008). In addition they stated that evidence suggests that policy and its associated practice get in the way noting: "…The sense that the system is not set up to assist schools or principals, but rather is there to mandate, appraise, control, and admonish when expectations are not met" (Starr & White, 2008, p. 5).

In addition, they argued that principals in rural communities have high visibility plus additional community demands and this creates "unconventional" circumstances (Starr & White, 2008, p. 3). Role multiplicity coupled with work intensification in a high visibility (high risk) environment means additional barriers result in reduced capacity for schools to change and develop positive school cultures.

Many researchers have noted the high percentage of novice principals in RRR areas, particularly in small RRR schools. Wildy and Clarke (2011) stated:

> The teaching principal is required to meet shifting curricular expectations, to master and apply new technologies, and also to be the leader of learning. The principal of the remote school is required to provide a robust and relevant educational program to meet the needs of students, as do colleagues in larger schools" (p. 8).

As discussed in the section on teachers and teaching, research has shown that many RRR schools have higher rates of staff turnover. This can make maintaining positive school cultures difficult. Lack of tenure, heavy workloads and lack of time all impact on the development of collaborative school cultures (Harris et al., 2013; J. Hattie, 2015b). As discussed previously trust (built over time) is implicit to working relationships, which are key to developing collegial school cultures. Establishing innovative school programs and partnerships takes time, effort and strategy. Often programs disappear when a key leader or staff member leaves (Starr & White, 2008; Wildy & Clarke, 2011). Wildy and Clarke (2011) argued that school culture can affect the retention of teachers but that leaders and particularly novice leaders need additional support and mentoring in embedding collaboration into school cultures so that successful programs endure staff turnover.

Wildy and Clarke note, "the distinctive challenges that beset small schools in rural/remote environments represent what Fullan (2005, p. 53) describes as 'adaptive problems'. These are the kinds of problems for which we do not have ready answers and which take time to deal with" (Wildy & Clarke, 2011, p. 2). However, some schools have managed to adapt to mitigate some of these issues as discussed below.

5.5 Innovations: A culture of collaboration

Wildy and Clarke's (2011) work is an overview of innovative strategies in small RRR schools in Western Australia. Innovation is defined as involving strategies that foster community and parental engagement, promote consistent attendance, provide quality curriculum, work with Information Communications Technology (ICT), attract and retain quality educators, lead school improvement and are capacity building in the school and community (Wildy & Clarke, 2011). Their examples cover innovations between schools and their communities, between multiple schools and within schools (e.g. teaching practice) (Wildy & Clarke, 2011, p. 3). Implicit in all of these are adaptive, collaborative school cultures.

Examples of collaborative culture include the many and varied professional learning communities (PLCs) – a term used to describe collaborative efforts in and between schools (and sometimes the wider community), business and universities and government departments.

Many schools develop PLCs as part of their school culture. Vescio, Ross and Adams reviewed eleven studies (10 American and one English) concerning the impact of PLCs on teaching practice and student learning. Of the studies investigated, those that appeared to not have a focus on student improvement did not change school culture or show gains in student improvement. However, they found that well-developed PLCs have positive impact on both teaching practice and student achievement through collaborative action when informed by student data and focussed on continual teacher improvement for improved student learning.

One example of collaborative practice is the work of Calabrese, Hester, Friesen and Burkhalter (2010), who argued that there is a highly participatory nature required to changing school cultures and that both leaders and teachers need to be empowered to build co-constructed imagined futures. In collaboration between a university and rural district superintendent in mid America, they used appreciative inquiry as the basis for working with a collaborative group from the district schools. The idea was to build trust, social capital and shared vision for the future. They argued that the creation of shared vision connecting with place gives chance for greater respect of place, trust, hope and value of strengths (Calabrese et al., 2010).

In some instances these complex additional rural challenges have also resulted in innovative practice Clustering in a pragmatic example of collaborative school culture that tries to mitigate issues of critical mass (Starr & White, 2008).

> As a result of some seemingly insurmountable challenges, rural communities are moving beyond traditional pathways to deliver educational benefits for their students. These include community involvement, cross-school activities, and extensive use of information and communication technologies (Starr & White, 2008, p. 7).

Clusters of schools (in conjunction sometimes with local business, government and community services) network, cooperate, collaborate and coordinate resources and develop transformative practices towards common goals. However, due to many of the issues discussed above, Starr and White (Starr & White, 2008) argued that better ways to support this are required for these practices to become more widespread and embedded in RRR school cultures.

Overseas clustering examples include Federation schools In the UK (these are led by one principal) and Cybercells (for teacher and student education) in Canada. Distance can be somewhat mitigated by telephone, email, teleconferencing and centralised meetings.

> Anecdotal evidence and research show the benefits of clustering especially for remote and small schools. From the results of a large-scale study of clustering small schools in England, success is likely to be achievable when schools worked together guided by an explicit rationale, and the schools were still respected as independent entities (Jones, 2009). Clustering brings many benefits to small schools, such as making available to students a wider range of equipment, resources and expertise. Clustering fosters a broad sense of community, and reduces the insular nature of being part of a small school. (Wildy & Clarke, 2011, p. 6)

Trinidad and Broadley (2010) argued that improvements in school culture can be supported through ICT (for information, networking and professional development) and co-practice for both students and teachers. They investigated two projects to Australian RRR schools that were using ICT in different ways to mitigate barriers of isolation and distance. Through the use of video conferencing networks and Web 2.0 technologies, leaders and teacher were able to access resources and connect to a virtual PLC and online cluster programs. They argued, "connecting via ICT allows the "outside world" to view and value the community and that it promotes place learning for choice and it builds pride and importance in a cultural context" (Trinidad & Broadley, 2010, p. 25).

Researchers also argued that rural Leadership must be critical of place (Corbett, 2016a; Harmon & Schafft, 2009; Starr & White, 2008; Wildy & Clarke, 2011). Wildy and Clarke (2011) noted that many of the innovations they reviewed were partnerships between local business, community and school and state "to be developed and implemented successfully there needs to be active interest, communication with and support from both the school and local community" (p. 4). An example is the Aquaculture Program at Cowell Area School (CAS). Able to take advantage of local environment and industry, this mature program initiated by a group of oyster growers (but now with international links) is embedded in the culture of the school and is significant because of its longevity. They, like many rural schools also have links to local community via resource sharing, such as the community library on the school site (Cowell Area School, 2016). However, Wildy and Clarke (2011) argued that many of the programs such as this one have not been externally systematically evaluated. This inhibits the determination of what is actually working within the program, its cost effectiveness and consideration for wider implementation.

Wildy and Clarke argued that evidence from the 44 innovative strategies they reviewed that have been implemented across many small RRR school (both in Australia and overseas) have common characteristics:

- **Partnerships and networks**: vertically and horizontally within schools, between schools and with local community, business and other agencies and embedded as part of the culture of the school.

- **Quality teachers and leaders:** Integral to effective strategies for attracting and retaining quality teachers and administrators to rural and remote locations is the adoption of a 'Rural Lens' in both pre-service preparation and ongoing development (as discussed in Teachers and Teaching).
- **Effective pedagogies:** Principals and teachers in small and remote schools who are effective leaders of learning use pedagogies that are grounded in place, informed by data with expectation of ongoing development embedded in the school culture.
- **Leadership and responsibility:** Distributed leadership (both within and external to the school) to garner social capital appears to support positive school culture and was evident in many of the innovations discussed. (adapted from Wildy & Clarke, 2011, pp. 106-111)

5.6 Where to from here?

Wildy and Clarke (2011) warn that a common feature of the innovations and strategies described in their review of innovation in small RRR schools is the absence of systematic evaluation and note that without sound evaluation, it is not possible to determine what works (Wildy & Clarke, 2011). So even though their review noted over 44 innovations (in hundreds of RRR schools), they could only feel confident in recommending eleven. Many of the successful innovations they could not recommend were initiated within schools and their local communities (sometime referred to as 'bottom up' innovations). Some have endured to become part of the improved school culture and indeed are followed keenly by industry partners (e.g. aquaculture at Cowell). Whilst lack of evaluation does not mean the program is not successful, it inhibits the determination of what is actually working within the program, its cost effectiveness and consideration for wider implementation (Wildy & Clarke, 2011).

School culture is situated both within macro systems and within local community culture. School culture is now inextricably linked to school improvement. It takes time to move to more open, collaborative school cultures deemed necessary in the search for school improvement. But like all social endeavours, it starts with conversations that build trusting relationships directed by common purpose and goals. The need to set systemic policy to ensure the system is driven by the 'right drivers' to ensure that positive collaborative cultures within schools is evident (Fullan, 2016; Organisaton for Economic Cooperation and Development, 2015).

> This concerted effort may embrace individuals, communities, associations and organizations, systems and sectors, governments at different levels as well as industry and commerce. Whatever the arrangement, we argue that trust and openness between parties is the basis of partnerships because they are the levers of cooperative action and social capital (Wildy & Clarke, 2011, p. 110).

Evidence shows that school culture is often resistant to 'top down' imposed change. Place informs culture which informs day-to-day practice thereby indicating that policy must be flexible enough to take account of local contexts. People need to be empowered, to enable ownership of day-to-day practice. Leadership is key to informing school practice and creating positive collegial school environments where innovative practice and partnerships that improve student outcomes can be created.

The interactions between the issues discussed here and in other parts of the literature review (such as teachers and teaching) is apparent when considering the drivers for improvement. The sustainability of rural space and place is all of Australia's responsibility. Education can be a main driver of sustainability and yet equality of provision in RRR areas is very much absent from national policy (Corbett, 2016a). Many researchers argue that driven by the morality of equity, evidence indicates that RRR needs a collective voice at a national level in order to effectively progress education for all.

6 STUDENTS AND STUDENT ENGAGEMENT IN REGIONAL, RURAL AND REMOTE SCHOOLS

6.1 Introduction

Australia has a legal requirement for children and young people to attend school from five years of age (in Tasmania) or six years of age (other jurisdictions), through until they complete Year 10 (usually about 15 or 16 years of age) and then be involved in full-time education, training or employment until 17 years of age (Australian Institute of Health and Welfare, 2015).

A comprehensive handbook of research on student engagement was produced in 2012 which addressed five areas: (1) What is student engagement?, (2) Engagement as linked to motivational variables, (3) Engagement and contextual influences, (4) Student engagement: Determinants and student outcomes and (5) Measurement issues, instruments and approaches (Christenson, Reschly, & Wylie, 2012). At the start of the book the editors pointed to several areas of consensus:

- Student engagement helps understanding of dropout and promotion of school completion
- Students who are engaged put in effort, aim at goals, persist, and enjoy challenging themselves
- Student engagement is positively linked with good academic, social, and emotional learning outcomes
- Student engagement is a multidimensional construct
- Context is important and student engagement is influenced by school, family, and peers
- There is an interplay between student engagement and student motivation on outcomes of learning
- Use of student engagement measures can affect decision-making in schools
- A range of strategies can be used to enhance student engagement (pp.v-vi).

At the end of the book they presented a definition:

> Student engagement refers to the student's active participation in academic and co-curricular or school-related activities, and commitment to educational goals and learning. Engaged students find learning meaningful, and are invested in their learning and future. It is a multidimensional construct that consists of behavioral (including academic), cognitive, and affective subtypes. Student engagement drives learning; requires energy and effort; is affected by multiple contextual influences; and can be achieved for all learners (pp. 816-817).

One study from the UK pointed to the importance of social relationships as an impetus for teenagers to attend school: "For young people from small rural communities, secondary school clearly provides a big collection of peers and the promise of 'seeing mates' may be a significant factor in the motivation of these students to attend school in the first place" (Gristy, 2012, p. 238). The author proposed that if school management supports positive peer relationships then "well-being improves and perhaps academic standards rise" (p. 226).

Research about African American teenagers from low-income rural communities in the USA indicated that behavioural and psychological engagement in middle school affected the resilience of these young people: "behavioral engagement was a promotive factor as it predicted higher achievement among girls [while] psychological engagement served a promotive function as it predicted higher achievement for girls and boys" (Irvin, 2012, p. 187). The author noted that "improving students' opportunities and rewards for such participation are steps school practitioners could undertake to bolster behavioural and psychological engagement" and such practices could include "proactive classroom management, interactive teaching, and cooperative learning" (p. 188).

A survey in the USA of rural high school teachers' self-efficacy in student engagement, instructional practices, and classroom management indicated that with regard to student engagement there was no significant difference found between female and male teachers, nor between the different levels of education of teachers, nor between the number of years of teaching experience (Shoulders & Krei, 2015). This suggested that teachers had positive views of their efficacy regarding student engagement. However, the voices of students and their perceptions are absent from this study.

Janosz (2012, p. 699) summarised the work of numerous authors and stated:

> that to increase motivation and engagement, we must privilege age-appropriate interventions, educational environments, and learning situations that respond to fundamental individual needs: to feel secure and respected, be active and autonomous, experience success, feel competent and have control over the outcome (success) of a learning task or situation, be related to others, understand the meaning and value of the effort demanded, etc.

This review will briefly refer to the following aspects that may deserve particular attention in the Australian RRR context: transitions within schooling including boarding, cohorts of students and pathways beyond schooling.

These diverse headings encompass a vast array of elements that impact upon students and their engagement with schooling and post-schooling options. Given the short timeframe for the compilation of the literature review and the limited length of the document, no attempt has been made to collate a systematic or comprehensive literature review. A scan of relevant educational websites along with database searches with appropriate terms indicated an overwhelming number of potential documents.

6.2 Transitions within schooling

6.2.1 Primary to secondary

It is out of the scope of this Review to include the transition of children into formal schooling at ages five or six. Most jurisdictions now have a transition after Year 6 from Primary School to either Middle School or High School. This change is recognised as a stressful time for children as they are leaving all that is familiar (friends, teachers, places and routines) and going into new physical environments and organisational cultures. Children often feel lonely, vulnerable, and bewildered (Pazos, DePalma, & Membiela, 2012). Young people may also face a second aspect of transition from Middle school to Senior Secondary School, at which stage “social relationships appear to have dominated the students’ school transition experience”. These include peer relationships and teacher-student relationships. “The issue of social relationships was the central transition theme for all students”(Pereira & Pooley, 2007, p. 166). For some RRR children the move from primary to secondary schooling may mean a physical change of the site of schooling. There are at least four options.

6.2.1.1 Child attends nearby secondary

If the new site is in reasonable proximity to the home it could involve parents (individually or car-pooling) travelling and dropping off their children, or it could mean children catch a different school bus. These strategies may keep a family household stable, but usually increase travel time and cost. Local school bus routes are important in providing access to schooling. There are associated issues regarding cost of numbers of buses, sourcing and payment for

drivers, length of routes (in distance and time), actual roads taken, transfers and numbers of children collected (Bögl, Doerner, & Parragh, 2015; Fügenschuh & Martin, 2006; R. J. Halsey, 2011; Prasetyo, Muhamad, & Fauzi, 2011; Silva, Sarubbi, Silva, Porto, & Nunes, 2015; Van Ristell, Quddus, Enoch, Wang, & Hardy, 2015; Wilson, Marshall, Wilson, & Krizek, 2010).

6.2.1.2 Family leaves area and relocates so child attends as day student

If there is no middle school or high school in the immediate area, some families might relocate the whole family so their children can be day students at a larger centre. This keeps a family together, but adds significant expense to buy or rent accommodation, and it may mean a change of livelihood or career for the parents.

6.2.1.3 Child leaves and stays with relatives or friends and attends as a day student

Children may leave their own family and live somewhere else with relatives or friends and be a day student. In these situations the children stay with known people, so there is a degree of familiarity for the children, and the hosts understand the children's background and can easily liaise with the children's parents.

6.2.1.4 Child leaves and attends as a boarding student

Other children may leave their own family and become boarding students at a school in a new place. This adds additional stress on the child as the people managing the boarding facilities are usually not known to the children. The matter of boarding schools is discussed in the following section.

6.2.2 Boarding

Apart from lack of access to secondary schooling nearby there can be other reasons why RRR families send their children to boarding schools:

- parents are employed interstate or overseas
- sporting or academic commitments for the child
- access to perceived high-quality education
- increased opportunities and options offered by boarding (e.g. specialised courses, sports and other extra-curricular activities)
- Family disruption/lack of stability in home environment (Benveniste, Disbray, & Guenther, 2014).

The Independent Schools Council of Australia (2016) reported 146 boarding schools in 2016 with 16,055 students. The website of a key group recently indicated 21,144 boarding students (Australian Boarding Schools' Association, 2017). The March 2017 newsletter of another group stated "Currently in Australia there are 25,000 boarding students" (Stade, 2017). Hodges,

Sheffield and Ralph (2013, p. 38) reported difficulties in obtaining accurate data on total numbers of boarding students and noted a decrease in total numbers of children attending non-government boarding schools between 1982 and 2007, and suggested that several factors in RRR areas have contributed to this decline:

> increases in resource provision and support in local schools; improvements in technology, resulting in the improved accessibility and quality of distance education and upgraded roads and transport that have made daily travel to local schools a more viable option.

Boarding school can be viewed as an accumulation of capital. Bass (2014, p. 31) presents aspects such as education capital, social capital and cultural capital. However, she cautions "When students are acculturated into the boarding school environment, they risk no longer blending into their families and friendships they formerly held, which may cause their foundational relationships to suffer". This has particular relevance for RRR students whose family and community life are often greatly different to the boarding school culture.

Aspects of the accumulation of capital are commonly presented in advertisements for boarding schools and media reporting (ABC Capricornia, 2017; Stade, 2017). Hodges (2013, p. 33) cautions against an uncritical perspective of boarding schools: "The desire to safeguard a [boarding] school's public standing and to protect its residents appears to have resulted in a closed-door attitude to inquiries … resulting in what might be considered a biased perspective of the boarding school experience". There is now a national authoritative document which sets the Boarding Standard for Australian schools and residences and details matters under six areas: (1) scope and general; (2) governance and management; (3) boarders; (4) staff; (5) parent, family and community engagement; and (6) facilities (Standards Australia, 2015).

Boarding students face difficulties with the transition to secondary schooling and also encounter bullying. A two-year longitudinal study from the end of Year 7 to end of Year 9 compared data between boarding and non-boarding students. Mander, Lester and Cross (2015, p. 137) indicated that the transition to secondary school is more difficult for boarders than non-boarders: "Grade 8 boarding students reported, one school Term after their transition, significantly higher levels of emotional difficulties, depression, anxiety and stress than non-boarding students." Data from the same study showed that by the end of Year 9 boarding students were twice as likely to report frequent victimisation than non-boarding students, (i.e. 20% compared to 10% respectively) (Lester, Mander, & Cross, 2015, p. 144). At the end of Year 9, male boarders were twice as likely as female boarders to report frequent victimisation (i.e. 27% compared to 14% respectively) (Lester et al., 2015, p. 146).

6.2.3 Possibilities

Access to a high school means that transport must be considered so the provision of school buses is important. Subsidising parents directly who provide their own transport to enable their children to attend school should also be considered.

Operating boarding schools is a select business. A detailed examination of the funds and capital involved in boarding schools along with the long-term results of such schooling is needed.

6.3 Cohorts of students

Edgeworth (2011, 2015) suggested that "the Australian rural is … stereotypically tied to images of nation where White culture prevails … rural landscapes are White spaces, where to be ethnically Other is to be 'out of place' (2015, p. 352). She described "the myth of non-indigenous rural Australia as a homogenous ethnic landscape" (p. 351). So too it needs to be recognised that RRR schools also are not monocultural and individual students present with their own particularities, as well as a number of cohorts can be identified. In the higher education sector equity groups include students that:

> are from non-English speaking backgrounds (NESB); have a disability; are women in non-traditional areas; identify as indigenous; are from low SES (socioeconomic status) locations based on postcode of permanent home residence; and are from regional and remote locations based on postcode of permanent home residence (Department of Education and Training, 2012).

Not all these categories are used here. However, attention is briefly drawn to four groups: Aboriginal and Torres Strait Islander students; gifted students; migrant, refugee or asylum seeker students; and students with disabilities.

6.3.1 Aboriginal and Torres Strait Islander students

Aboriginal and Torres Strait Islander students constitute about 3% of students in Major cities, about 10% of students in "Regional" areas and about 50% of students in "Remote" areas. This suggests that particular attention should be given to Aboriginal and Torres Strait Islander students in "Remote" and "Very remote" areas. Therefore, Aboriginal and Torres Strait Islander students are covered in a separate section of this Literature Review (see Section 2).

6.3.2 Gifted students

Lawrence (2009) presented a comprehensive literature review of material on rural gifted education in the USA for the period 1990 to 2006, under five headings: rural values and culture, being gifted, identifying gifted rural children, options for educating gifted rural children, and teaching teachers to teach gifted rural students. She identified four options: having gifted

students from different schools meet regularly at one place throughout the year for specialised activities, schools running their own programs for gifted students, encouraging parents and peers to support gifted students' aspirations, and establishing 'magnet schools' which specialised in advanced subjects in a rural areas to which students from dispersed areas could travel.

Exemplars of innovative enrichment practice for rural and regional gifted students in Australia were provided by Smith and Smith (2009) who emphasised one and two day cross-curriculum workshops with collaborative investigative activities using a range of ICTs in small groups that required a group output for display to the larger group. These activities were coordinated by university staff, and run by teachers from various rural schools. Parents were welcomed at specified times over the course of the workshops.

In regional New South Wales three options for gifted primary students were explored – an opportunity class, a withdrawal program and a virtual classroom (Wood & Zundans-Fraser, 2013). All three options provided ways for students to become involved with others of like mind. The authors recommended that selection for such options be based on multiple criteria and occur throughout a child's progress through primary school, not based on one instance of testing. Enhanced two-way communication between parents and school was advocated. These options often did not receive full support from other teachers at the same school, and there were conflicts between the gifted program and regular program regarding expectations on children. Children needed explicit assistance in being able to describe their perceptions about the curriculum and pedagogy.

One example of a virtual offering for gifted students was the *xsel* program in NSW which commenced in 2010, as an opportunity for regional and rural students to participate in selective high schooling, which caters to highly achieving, academically gifted students: "The program is founded on the belief that our students do not need to leave our country towns, their friends and family and travel to the metropolitan areas to access a selective school" (Furney, McDiarmid, & Bannister, 2014, p. 36). The *xsel* program has been superseded by the founding of Aurora College (also known as The Virtual Secondary School) in 2015 (NSW Department of Education and Communities, 2013, pp. 15-16): "Aurora College allows students in rural and remote areas to remain in their local school and community while studying specialist subjects which their home school cannot currently offer" (NSW Department of Education, n.d.).

In the *xsel* program the on-site facilitator or mentor was seen as a key to the program: "the positive involvement of the xsel support person in the base school, with the xsel student and the program, is a critical success factor for our students" (Furney et al., 2014, p. 39). Hendrix and Degner (2016) investigated the role of these facilitators for gifted students in rural schools

in the USA who were enrolled in online advanced placement courses and found they often offered support disproportionate to the expected mentoring role, usually because of an existing close relationship with the students which had developed over many years. The authors recommended formal training regarding expectations of a facilitator. Similar issues existed in the *xsel* program: "… "students turned in the first instance to their base school teacher for *activating* wrap-around services at the local level" [emphasis in the original] (Furney et al., 2014, p. 39).

6.3.3 Migrant, refugee or asylum seeker students

In the period 2006-2011 there were 432,985 overseas arrivals (Commonwealth of Australia, 2016a); some were migrants and others asylum seekers who sought refugee status. Table 2 indicates the change in numbers of overseas arrivals by remoteness category. About 15% of these resettled to RRR areas.

Table 2 Change in number of overseas arrivals by remoteness category, 2006 - 2011

Remoteness	2006-2011 Change	% of change
Major Cities	371,845	85.9
Inner Regional	30,104	7.0
Outer Regional	22,603	5.2
Remote	5,539	1.3
Very Remote	2,895	0.7
Australia	**432,985**	

It has been suggested that the mining boom may have contributed to in-flow of migrant population to areas away from major cities: "The shifts in migrant population have not been uniform across the country, with areas reliant on mining experiencing the bulk of the growth" (Davie, 2015, p. 32).

One study reported that

> Barriers to educational achievement for refugee young people include teachers' low academic expectations, inconsistent alignment between curriculum, assessment and pedagogy, lack of differentiation of classroom instruction, lack of or insufficient teacher training and preparation, and a view that the 'refugee problem' is the ESL teacher's responsibility. …One can only assume that the educational challenges reported in urban environments will be exacerbated in regional and rural areas (Major, Wilkinson, Langat, & Santoro, 2013, pp. 96, 98)

Mickan (2007) indicated that teaching subjects such as science and home economics includes passing on a host of values and beliefs and thus can be seen as contributing to the socialisation

of refugee students. Schech (2014, p. 607) noted that a problem refugees faced when settling in some rural areas was the lack of school teachers trained in English as a second / foreign language tuition. Edgeworth (2015, p. 357) drew attention to racism directed toward refugee students in rural schools and stated that "Understanding how students are positioned in states of unbelonging through discourses of rural Whiteness has implications for understanding schooling for refugee students in changing times". She pointed out that "constructions of rurality are complicit in producing these practices of unbelonging and details how racist practices can go on to produce exclusions" (2015, p. 358). Similarly, Radford (2016, pp. 2138-2139, 2142) included examples of refugee school children who had been teased and called "terrorists".

Major et al (2013, p. 101) pointed out that refugees both face difficulties and receive benefits when living in rural areas: "Regional and rural locations are currently something of a double-edged sword for refugees". They noted challenges including "the potential for the intensification of racist attitudes in a wider climate of negativity about asylum seekers" but also highlighted

> there is the potential of regional and rural locations to offer fruitful opportunities for the building of bonding and bridging capital through access to social networks and support that may not be available to the same degree in a large urban environment.

They stressed the role that schools in such locations have in affirming the capital already possessed by refugee students: "Schools must develop a culture that represents refugees in positive and empowering ways, based on the strengths and personal-social assets they bring".

6.3.4 Students with a disability

Hussain and Tait (2015, p. 1611) explored perceptions of rural parents with children who had disabilities and found three main themes of concern: "lack of relevant and timely information, perceived inadequacies in interaction with service providers and challenges and barriers to access and use of services". The latter two areas included subthemes about "poor staff attitude, lack of experienced staff and staff turnover, limited rural services and long waiting times and a mismatch between needs of the child with disability and services on offer". An example was given of the irregularity of service visits by a speech pathologist to a school: "the Speech Therapist comes probably once in a blue moon to school" (p. 1613).

The introduction of the Australian National Disability Insurance Scheme (NDIS) may contribute to families with a child having a disability making choices about the services they receive. It has been suggested that this "may position private therapists at the forefront of service provision, especially in rural and remote areas, as they are experienced in the provision of therapy in a fee-

for-service model of practice" (Gallego et al., 2016, p. 225). This may mean that schools in RRR areas may have to negotiate new arrangements with professionals such as occupational therapists, physiotherapists, speech pathologists, and psychologists who operate as private therapists.

A recent study demonstrated the benefit of training on the use of social media for rural young people with disabilities (Raghavendra, Newman, Grace, & Wood, 2015). The authors found "that social media provides a key new opportunity to help them develop relationship, conversation, and literacy skills". They advocated for the use of social media to be taught in schools rather than having it blocked: "These positive benefits call for schools and/or disability services to provide ICT training for young people with disabilities to learn social media use" (p. 1587).

6.3.5 Possibilities

As indicated matters pertaining to Aboriginal and Torres Strait Islander students are considered in a separate section (see section 2). The other three cohorts of students could benefit from increased professional development for staff at their sites. Options for gifted students and those with a disability could be improved by enhanced ICT. Migrant and refugee students need support to deal with trauma from their backgrounds along with racism.

6.4 Pathways beyond schooling

In general most young people take three paths beyond schooling: tertiary education (through either higher education or vocational education and training (VET) institutions), apprenticeships or traineeships, or get a job. Some do not participate in education, employment or training at all (i.e. the NEET group).

2009 data indicated that the more remote a student lived the less likely they were to obtain an Australian Tertiary Admission Rank (ATAR) which enables a person to compete for university entrance: major cities (62%), provincial centres (44%) and remote areas (28%) (Lamb, Jackson, Walstab, & Huo, 2015, p. 44). Robinson (2012, p. 88) argued for an increased role for regional university campuses in shaping aspirations of the populace in their sphere of influence as they flexibly delivered sustainable programs: "rural campuses must act not only as brokers between rural populations and higher education institutions, but as educators of public opinion and shapers of local educational aspirations". In addition she advocates for building on the existing knowledge of RRR residents:

> By insisting upon the importance of the place-based, situated knowledge that rural students bring to the classroom, a curriculum that incorporates place-based education provides an antidote to this [metrocentric] prejudice. … One obvious way to apply the notioin of place-based education in a higher education context, is to draw upon the prior experiential learning … of rural dwellers (Robinson, 2012, p. 89).

Data for 2013 indicated that there is a high uptake of apprenticeships and traineeships in RRR areas: "The proportion of apprenticeships and traineeships … undertaken by 15 to 24 year olds [away from major cities] (40%) was higher than their share of the population in these areas (27%), highlighting the importance of these opportunities in non-metropolitan areas" (Australian Institute of Health and Welfare, 2015, p. 127). However, the VET sector is known for low completion rates: "rural and regional students have higher completion deficits than urban students" (Fieger, 2015).

Work-based learning (WBL) can be more appealing to some young people than academic school programs, develops skills that are in demand in the work force and may provide a relatively smooth transition to work by connection with employers. Some WBL may be temporary arrangements whereas others are extended regulated programs that lead to industry recognised qualifications such as apprenticeships. Generally, these are available once a person is in their mid to late teens. Some young people combine these with school attendance (Australian Government, 2015a). Others who are not in employment, education or training (NEET) – sometimes termed "youth at risk" – may also participate in WBL.

An OECD report (Kis, 2016) addressed the challenge of making WBL attractive to employers so that they might offer places to young people. Employers seek to run a business and make a profit, so WBL must at least cover costs in offering WBL. Australian employers who engage an apprentice belonging to a nominated equity group receive a financial incentive. Nominated equity groups include Aboriginal and Torres Strait Islander people, job seekers with severe barriers to employment, school-based apprentices, apprentices working in a rural or regional area, or apprentices with disabilities, and others (Australian Government, 2015b). "However, providing direct financial incentives to employers who hire youth at risk as apprentices (e.g. subsidies or tax breaks) is not the answer". Rather, other ways to support WBL should be sought, "these include adjusting the parameters of apprenticeship schemes, programmes that prepare youth at risk for apprenticeship, and initiatives that support youth at risk during apprenticeships" (Kis, 2016, p. 8). Another OECD report indicated "The main parameters affecting the cost–benefit ratio are apprentice wages, amount of training provided at the workplace, apprenticeship duration, and the manner in which firms integrate apprentices into the production process (to perform both skilled and unskilled tasks)" (Mühlemann, 2016).

Corbett (2007a) highlighted the notion that schooling in RRR areas is premised on "learning to

leave". A significant question is Are the three pathways mentioned above pathways for leaving RRR areas? McMahon and Rixon (2007, p. 47) investigated the career aspirations of rural and remote Years 6 and 7 school children in Queensland and found children knew "what would make them good it, who and what could influence their decision about it, and how they had found out and would find out more information". The authors further pointed out that "many of these young people will leave their rural community to obtain employment or the education and training needed to undertake their preferred occupations". In another study high school students identified five influences on or obstacles to rural students' aspirations and expectations: finances, apprehension and fear, attachment to home, limited work opportunities, and limited educational opportunities (Alloway & Dalley-Trim, 2009). Students referred to "the personal and emotional issues associated with the anxieties of moving to the city, and the powerful sense of loss of family and friends which this implies" (p. 58). Perlgut (2017) recently argued for an increased role by not-for-profit community education providers in the VET sector – such as Community Colleges Australia – in RRR areas. The engagement of young people, particularly post-schooling, in RRR areas is one that deserves increased attention (Davie, 2015).

6.4.1 Possibilities

The three common pathways beyond schooling – tertiary, apprenticeships / traineeships and employment – need to be reframed so they are not perceived as pathways away from RRR locations. Advances in ICT affect each of these areas and entrepreneurial approaches may also enable young people to continue to be actively engaged in their own RRR communities.

6.5 Summary

This section considered notions of engagement and looked at three particular areas: transitions within schooling, cohorts of students, and pathways beyond schooling. Other areas such as attendance and personalised learning plans can be discussed regarding teachers and teaching. The use of ICT and integrated subjects can be thought of regarding curriculum and assessment. The place of vernacular instruction and learning of culture are particular relevant to Aboriginal and Torres Strait Islander students. Work based learning and entrepreneurial aspects may be explored when discussing partnerships with family, business and community.

7 TEACHERS AND TEACHING IN REGIONAL, RURAL AND REMOTE SCHOOLS.

7.1 Introduction

This section discusses the literature on teachers and teaching in regional, rural and remote (RRR) schools. It discusses a number of elements in the review period (2006-2016), identifies some barriers regarding teachers and teaching in RRR schools and also identifies a range of possibilities.

7.2 Current issues and practises

Teachers are required to register with a teacher authority in the state they wish to teach in. In 2011 the Australian Institute for Teaching and School Leadership (AITSL) published the Australian Professional Standards for Teachers (Education Services Australia, 2011). It provides a framework indicating expected levels of career practice (graduate, proficient, highly accomplished and lead) (AITSL, 2014). Teachers provide evidence against the standards to advance through the levels. In 2016 Ministers approved the implementation of revised standards for accreditation of initial teacher preparation (AITSL, 2014). The aim is to "strengthen the accreditation system with a focus on outcomes" with "providers required to demonstrate their program ensures their pre-service teachers possess the knowledge and skills they need to be successful in the classroom by the time they graduate" (AITSL, 2014).

Research has identified that the quality of teachers is one of the main 'in school' impacts on student learning (J. A. C. Hattie, 2009). It therefore stands to reason that in the provision of equitable education for all in Australia, the provision of a high quality teacher workforce is important (Commonwealth of Australia, 2013). And whilst OECD results do indicate we have one of the best workforces of teachers in the world, there are particular barriers of geography, critical mass and the metrocenticity of current programs that make providing and maintaining (through initial teacher education, the provision of staff resources, support and professional development) a high quality teacher workforce in rural and remote areas problematic (Commonwealth of Australia, 2013; Lyons et al., 2006; Productivty Commission, 2012).

Low socio-economic schools in regional, rural and remote (RRR) areas are some of the hardest to staff schools in Australia (Commonwealth of Australia, 2013; Green, 2008; Lyons et al., 2006). Data of the nature and exact numbers of staff shortages in regional, rural and remote schools is difficult to ascertain from the literature surveyed for this review. The Staff in Australian Schools (SiAS) survey (McKenzie, Weldon, Rowley, Murphy, & McMillan, 2014) bases the collection of its

data on the number of unfilled positions as reported by School Principals at a particular time providing only a snapshot. In addition, the report has broader geographic definitions (metropolitan, provincial and remote) in comparison to the Australian Statistical Geography Standard, thus making comparisons with other report findings difficult. However, SIAS (2013) states that 20 per cent of primary and forty per cent of secondary Principals report moderate or major difficulties in filling some staff positions and this is noted as more acute in rural and remote areas (McKenzie et al., 2014, p. 14). PISA also indicates that teacher shortages are also often hidden through the range of measures such as filling the position with a teacher teaching out of their main fields of expertise (Organisaton for Economic Cooperation and Development, 2016; Weldon, 2016).

7.3 Attracting and retaining staff in hard to staff rural and remote schools

Without wanting to diminish the issues of attracting and retaining quality staff in some rural and remote schools, there is some data that tells us that overall, rural schools are staffed by experienced teachers (who stay in the particular geographical area for considerable periods of time). Many of these rural areas are seen as very desirable paces to teach, for example, the schools in the wine-growing region of Clare Valley, two hours north of Adelaide. These regions often have well-established tourism industries, reasonable housing costs (in comparison to major cities) and still provide high accessibility to a range of amenities. There are also schools that are more rural or remote but near desirable natural amenities, for example, coastal fishing and surfing areas that also provide additional attractive lifestyle elements that attracts teachers to move to the region. In addition to being accepted by the community, these sorts of lifestyle benefits of rural locations are some of the main reasons teachers stay (Lock, Budgen, Lunay, & Oakley, 2012; Lyons et al., 2006). Many of these schools have staff profiles and turnover rates more similar to that of metropolitan schools (Lyons et al., 2006).

However, in general, the further out you go, the harder it becomes to attract and retain staff. ‘Hard to staff’ regional, rural and remote schools have more challenging environments both personally and professionally, access to fewer educational and personal amenities, less satisfactory living environments and additional difficulties in accessing required support networks and professional development (Productivty Commission, 2012, p. 92). The SiAS (2014) identifies that early career teachers (those teaching for <5 years) make up 22 percent of the primary and 18 percent of the secondary teacher workforce but 45 percent and 30 percent respectively in remote schools. These figures have risen in comparison to previous surveys. Studies identify other barriers (especially for graduate teachers in starting and developing their careers in rural areas) as geographic, social, cultural and professional isolation (e.g. moving away from family, friends and metropolitan based facilities), limited availability of housing and higher costs associated with day-to-day living (Lock et al., 2012; Plunkett & Dyson, 2011).

Whilst some attrition in a workforce is both healthy and necessary, high losses of new graduates and early career teachers is not (Plunkett & Dyson, 2011). It also results in higher staff turnover. Many early career teachers are young and of those in the youngest age group (25 or less), less than half are in ongoing/permanent positions. Whilst overall casualization of the teacher workforce is increasing, a survey of recent teaching graduates teaching in rural Australia showed that 69 per cent of the teachers would like to continue in their current school for at least three years or more (Plunkett & Dyson, 2011). This indicates that many early career teachers are looking for "a reasonable period of stability in their initial years of teaching" (Plunkett & Dyson, 2011, p. 39). And whilst attachment to students and community is a main factor in teachers' choice to remain, contractual arrangements hinder this development (from both the teachers' point of view and that of the school community) (Green, 2008; Lyons et al., 2006; Plunkett & Dyson, 2011).

Other issues include that teachers pay has a relatively flat structure that does not adequately recognise or address the contexts of 'hard to staff' schools (Commonwealth of Australia, 2013). In addition, many industry specialists (such as math and science related) can obtain higher rates of remuneration in other industries (Productivty Commission, 2012). SiAS indicates that teachers in remote areas report lower levels of job satisfaction and are more likely to be unsure of their teaching intentions for the future and that regardless of any incentives this has remained relatively unchanged over the last ten years (McKenzie et al., 2014, p. 102) .

SiAS also indicates that the two largest factors contributing to a young teacher's decision to leave teaching in the near future are heavy workloads and insufficient reward and recognition McKenzie et al. (2014, pp. 104-116). Requirements to teach out of field, especially as a young, early career teacher may add to the heavy workload and additional stresses of moving to and teaching in regional, rural and remote areas (Weldon, 2016). Both SiMMER (Lyons et al., 2006) and Weldon (Weldon, 2016) had similar findings that whilst qualification levels were similar between metropolitan and rural areas, rural and especially remote secondary school teachers were two to three times more likely to be required to teach outside their subject areas. Clearly this has implications for both teachers and students

Currently there is a range of incentives available to teachers to move and work in RRR schools. For example, Western Australia offers additional allowances of up to $20,870 a year, relocation and housing expenses and additional leave. Some schemes do offer permanency after several years teaching in hard to staff rural and remote schools. And although SiMMER found that among the main motivational reasons for teachers taking rural and remote positions was availability of employment and Education Department placement (generally through scholarship and incentive schemes), there were still considerable persistent shortages for hard to staff schools and/or for particular curriculum areas (Commonwealth of Australia, 2013; Lyons et al.,

2006; Productivty Commission, 2012). Overall the literature indicates that incentive schemes require further investigation and consideration, including the possibility of further funding being required to enhance the effectiveness of the programs (Commonwealth of Australia, 2013; Productivty Commission, 2012; Ross, 2015).

7.4 Addressing teacher quality through initial teacher preparation and professional development

"Today's classrooms and schools place more demands on teachers and other school workers than in the past." (Productivty Commission, 2012, p. 5). Teachers acquire and develop skills and knowledge through a combination of pre-service training (instruction and practicum) and employment (professional development).

7.4.1 Teacher preparation

Much of the literature notes the lack of rural focus in both pre-service and ongoing teacher training and that graduates are in particular ill prepared for teaching in low socio-economic schools in regional, rural and remote areas (Productivty Commission, 2012, p. 13).

It is ironic that there appears to be an oversupply of teaching students in University courses but an undersupply of quality teachers in rural and remote areas and this seems to be one of the structural consequences/barriers of market-led higher education funding and provision. There appears from the literature a systemic financial imbalance between servicing high numbers of teacher students whilst still having shortages of teacher in regional, rural and remote hard to staff schools. This, combined with the 'metrocentric' nature of current systems affects the quality of teacher training preparation for regional, rural and remote hard to staff schools (Commonwealth of Australia, 2013; Productivty Commission, 2012).

In addition barriers to student teachers' consideration of teaching in rural areas are negative ideas about rural teaching, personal and professional isolation (e.g. moving away from their usual social support base and metropolitan based facilities), loss of income during practicums couple with the additional costs of rural practicums, additional burdens of travel and higher day-to-day living costs and limited learning, contact and experience with multi-age/multi-grade classrooms (Hudson & Hudson, 2008; Lock et al., 2012; White & Kline, 2012). Campbell and Yates (2011) found that student teachers' 'metrocentricity' (the students' identification with a 'city' habitus) was a strong predictor of the student's views of and interest in teaching in rural areas. This was regardless of where the student was from (Campbell & Yates, 2011).

Lock, Budgen, Lunay and Oakley (2012) interviewed twenty-three teachers teaching in small remote schools in Western Australia. Most were early career teachers under thirty years of age. The factors which impacted on them included lack of training in planning for and managing the

learning and behaviour management needs of students in diverse multi grade classrooms (for example in a remote schools split into three groups covering year one to year ten), and where there are often a higher proportion of children with special needs or where English is a second language. Other issues noted were culturally related (for example, cultural awareness, culturally appropriate curriculum and working with Aboriginal Education Workers) and on a more personal level (for example the need to organise grocery and back up water supplies for a term at a time) to strategies for dealing with the 24/7 nature of visibility in small communities. The research found that the vast majority of these issues feed into increased levels of stress and workloads, resulting in 'burnout' (Lock et al., 2012).

Numerous researchers comment on the lack of awareness of the benefits of rural teaching among pre-service teachers and have argued that this can be addressed by providing information in conjunction with rural experience (Green, 2008; Hudson & Hudson, 2008; Kline, White, & Lock, 2013).

7.4.2 Rural based professional experience

A costly but important part of teacher degrees are the professional experience placements. It is an important consideration because an oversupply of teaching students at Universities creates problems in covering the cost, availability and quality of appropriately lengthy practicums throughout the degree program. It appears that schools are inundated with requests for teacher students' placement opportunities and Universities struggle to provide appropriate placements and supervisor/mentors to oversee the student's practicum (Commonwealth of Australia, 2013). This is particularly relevant to metropolitan Universities providing rural and remote practicums. Students attending rural practicums often require extra support and mentoring as for many, it is their first trip away from family and their urban environment , thus placing additional administrative and supervisory costs above usual requirements (R. J. Halsey, 2009; Productivty Commission, 2012).

Professional placements are an important part of initial teacher preparation but it is difficult to ascertain from available literature, the extent of support offered for teacher students to complete a practicum away from where they currently live and attend University. Even if students identify as wanting to 'try out' rural teaching, the costs can be prohibitive as they often lose income from employment whilst having additional costs of moving and living in a rural areas to cover (R. J. Halsey, 2009). There are however, instances were funding is provided to offset at least some of the additional costs of a RRR placement compared with a city placement. For example, the Department of Education in Western Australia offers a practicum subsidy allowance of up to $290 per week to assist student teachers with remote based practicums. Another is the Extended Rural Placements Program at Flinders University funded by the Thyne Reid Foundation and allocates up to $5,000 for a full term placement in a RRR school.

White and Kline (2012) argue that graduates need to be “community ready, school ready and classroom ready” (p.13). This requires specific rurally focussed higher education curriculum complemented by quality, mentored rural and remote based practicums implemented in support with both schools and communities. The consequent high degree of relationship building between State Education Departments, Universities, host schools and their communities, places additional administrative and financial burdens for those involved. This needs to be taken into account when planning for the sustainability of teacher practicum programs in rural and remote areas.

Rural field trips and practicums positively impact on students’ knowledge of, range of contextual skills and propensity to teaching in rural and remote areas (Sharplin, 2010; White & Reid, 2008). Enhancing the provision of these is integral to addressing graduates propensity for and readiness to teach in rural and remote areas (Hudson & Hudson, 2008; Kline et al., 2013; Lock, 2008; Productivty Commission, 2012; White & Reid, 2008). There is also a need to provide increased financial support to aid students to attend rural and remote practicums (Halsey 2009).

Overall, many note how the distinct lack of a positive ‘rural lens’ within current University based training and in the professional development on offer feeds into an education system that also lacks emphasis on other ways of seeing and being in rural spaces, thus perpetuating the current deficit modes of thought (Wallace & Boylan, 2009). The SiMMER study (2006) revealed that "the majority of Australian universities have no explicit focus on rural education in their teacher education programs; have random and ad hoc rural practicum opportunities and no obvious link to any of the various financial incentives across Australia to encourage graduates to work in rural areas (Lyons et al., 2006, p. iv).

The 2008-2010 Australian Research Council Study TERRAnova included twenty case studies of schools where the recruitment and retention of teachers appeared to be successful (Reid et al., 2012). Together, these show the capacity of collaborative models of practice between schools, communities and Universities. Drawing on the TERRAnova study, the 2010-2012 RRRTEC study discusses how within initial teacher training there is a need to prepare rural and regional teachers to be community ready, school ready and classroom ready (White & Kline, 2012) and has produced a range of higher education curriculum and practicum resources placed on a central data repository (www.rrrtec.net.au). As part of the success measures of the program it noted that there has been a number of Universities that had indicated interest in the program and its resources, suggesting this may provide further opportunity as a national platform (White & Kline, 2012). Other collaborations between Universities (such as the TERR Network in Western Australia) sought to build on the theoretical framework provided by RRRTEC to develop a student teacher remote school program (Trinidad, Sharplin, Ledger, & Broadley, 2014). Overall, it appears that although there is evidence of some collaborative programs, Trinidad et al 2014

found that “eleven out of 39 Australian Universities provided a dedicated course focussed on rural education” (p.3).

There is also evidence that recruiting graduates from rural and remote areas (e.g. ‘grow your own’ programs have had some successes both in education and in the health sector (Productivty Commission, 2012; Urbis, 2008). There is also evidence from Australia and Canada that shows student attendance rates increase in schools where there is a higher number of Indigenous teaching graduates employed (Productivty Commission, 2012, p. 283). However, evidence of how this directly impacts on student outcomes is mixed. AITSL (2015) has suggested that a range of flexible entry requirements to teacher training be considered, especially for equity groups and Indigenous and Torres Strait Islander students. However, lowering tertiary entrance scores to do this is a controversial topic in the literature.

7.4.3 Ongoing professional development

The availability of context related and culturally appropriate professional development is also an issue in relation to teachers and teaching in RRR schools (Commonwealth of Australia, 2013; Lock et al., 2012; Lyons et al., 2006; McKenzie et al., 2014). SiMMER (Lyons et al., 2006) found there were inequalities of access to professional development for regional, rural and remote teachers, especially in relation to catering for Indigenous students and for catering with a wider range of diverse needs (e.g. both students with multiple special needs and student identified as gifted and talented. The contractual nature of the workforce combined with high turnover rates and lack of release time in rural and remote schools impacts on professional development (Commonwealth of Australia, 2013).

Lock et al (2012) found that some teachers were missing out on professional development because they had started part way through the year. In addition, although most of the teachers interviewed had some preparation for rural and remote settings, it did not go far enough. McKenzie et al (2014, p. 72) also notes around a third of teachers receiving professional learning in the area of ‘teaching Aboriginal and Torres Strait Islander students’ state that it provided no perceived benefit to them.

One of the key attributes of effective teachers is knowing their subject very well and having effective strategies to teach it. Teachers teaching out of their field of expertise is more likely to occur the further out you go from urban areas, in lower SES schools and is more likely to be done by early career teachers. This is a structural impact on quality of teaching that is also relatively consistent across the sectors (Government, Catholic and Independent) (Commonwealth of Australia, 2013; Weldon, 2016). There is a lack of data on the extent to which teachers gain additional formal qualification to teach in out of field subjects and that there appears little incentive to do so, other than when wanting to apply for another position

(Weldon, 2016).

7.5 Where to from here?

Research indicates that a combination of financial incentives and programs that address teachers' understandings of rural contexts and cultures are integral to successfully addressing teacher shortage in rural and remote schools. Developing relationships between schools and community also impacts on teacher retention (Productivty Commission, 2012). This indicates that the issue of attracting and retaining teachers is interconnected to a range of other areas such as those discussed in other parts of this literature review.

As Green (2008) argues:

> A crucial point to emerge from the research undertaken in R(T)EP is the critical significance of context, and relatedly of issues of location and community, and the need to reckon contextual considerations into account in all aspects and instances of policy and pedagogy, particularly with regard to rural schooling. Properly understood, context is not an 'add-on', but rather a first-order factor to be drawn into policy and pedagogic proposals from the very outset (p.6).

Lock et al (2012) found that teachers' reasons for applying and staying in schools in remote areas included an interest in working with children in a remote setting, a desire for personal challenge, word of mouth or invitation to apply; a desire to make a contribution, job satisfaction, the beauty of the natural environment and being inspired by practicum experience while at university (p. 6). With this in mind, research (Kline et al., 2013) also indicated that collaborative programs between Universities, schools and communities could positively influence a student teacher to consider rural teaching.

Examples of increased collaborative projects include the 2009-2012 Australian Learning and Teaching Council (ALTC) funded project called Renewing Rural and Remote Teacher Education Curriculum (RRRTEC). It developed information and resources for teacher educators, schools and teacher students and was a collaboration between Monash University, Deakin University (VIC), Charles Sturt University (NSW), and Edith Cowan University (WA). Based on previous research it produced teacher preparation curriculum resource modules and a range of other resources available through a dedicated website for teacher educators, principals, mentors and others supporting new teachers in rural schools (available at www.rrrtec.net.au). It is intended to provide a platform for ongoing collaborative work to improve rural and remote professional experiences (White & Kline, 2012).

Another different type of example is in New South Wales where an 'indenture' style program (that was a collaboration between the NSW Department of Education and the University of New England) showed a degree of success in placing five teaching graduates (three of which were in

rural and remote areas) into three year teaching contracts in schools with high Indigenous populations. Harrington (2013) indicates that integral to the program was an increased degree of school and community contact and collaboration with Indigenous elders during their teacher preparation. In addition the study indicated that streamlining placement with eventual permanent positions might also improve retention (Harrington, 2013).

Tailoring individual incentive packages where successful applicants can choose from a range of incentives to best meet their needs may be an option. There is case study evidence that mentoring schemes aid in retention of teachers. (Productivty Commission, 2012, p. 278). Hattie (2015a, p. 30) suggests a system similar to that of a two-year hospital registrar position integrated as a key part of pre-service teacher preparation. Given that the vast majority of teachers indicated that stress and high workloads was a major factor in considering leaving rural and remote areas, supporting reduced workloads for early career teachers may also improve retention. For example, currently in New South Wales, beginning teachers who are either permanent or on long term contract and employed from the very beginning of the year are entitled to a reduced teaching load and mentoring (NSW Department of Education, 2016). Other areas to consider include reducing requirements to teach out of field in the first two years of teaching (Weldon, 2016).

Overall, whilst there is always room for improvement, the teacher workforce preparation and its use of effective teaching strategies in Australia are considered to be some of the best in the world (Organisaton for Economic Cooperation and Development, 2016). Australia is highly urbanised yet also one of the least populated countries in the world, thus creating issues with critical mass in rural and remote areas (Australian Bureau of Statistics, 2013b). The issues of attracting and retaining quality teaching staff in rural and remote areas is not new or unique to Australia and is shared by other countries like Canada, the USA and Scotland (Lock, 2008; Organisaton for Economic Cooperation and Development, 2013; Ross, 2015). However, the literature agrees that the range of current incentive schemes do not adequately address the disincentives for moving (Commonwealth of Australia, 2013; Green, 2008; Lock et al., 2012; Lyons et al., 2006; Mazurski, Finn, Goodall, & Wan, 2016; Plunkett & Dyson, 2011; Productivty Commission, 2012). Additional funding will be required to provide the combination of improved incentives and other suggested practices discussed above that show promise to increase the rural focus in initial teacher training and ongoing improved access to support rural and remote professional teacher networks and relevant professional development (Commonwealth of Australia, 2013; Lyons et al., 2006; Productivty Commission, 2012). Given Australia's responsibility to provide equitable education for all and that quality teaching can have significant impact on student outcomes, it is worth the investment (Ross, 2015).

In addition, many researchers indicate that in addressing issues such as attracting and retaining quality teachers, it is evident that a much broader, multi-pronged approach is needed. There is distinct interconnectedness between many of the areas identified in this literature review, where merely trying to address one issue (such as attracting teachers) without addressing other issues (such as school –community connections) would not lead to the change required to improve outcomes. Overall, researchers indicate that all of these issues are linked to a distinct absence of or lack of visibility of 'rural' in education policy. In order to address this, SiMMER (Lyons et al., 2006, pp. 56-60) suggests that building on the National Framework for Rural and Remote Education to develop a National Rural Education Strategy (similar to that of the National Rural Health Strategy) would provide a collaborative working model for action and harness the potential of collaborative networks. SiMMER suggests this would be consistent with Government policy and would create a national agenda for improving outcomes of students in RRR areas.

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