



Early years English language acquisition and instructional approaches for Aboriginal students with home languages other than English:
A systematic review of the Australian and international literature

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The Centre for Child Development and Education

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GLOSSARY

Table 1. Definition of terms used in this review

<i>Key terms</i>	<i>Definition</i>
L1	A person's first language or 'mother-tongue'.
L2	A second language being learned; typically English in this review and often the society's dominant language.
Bilingual	Oral language proficiency in two languages
Biliterate	Written language proficiency in two languages
Bilingual Education	Instruction in two languages (de Courcey, 2005).
Bilingual 50/50 Education	L1 and English are used equally in all aspects of schooling (FaCS, 2002; McKay, 1999).
Bilingual Maintenance Education	Most students are English language learners from the same language background. They get a significant amount of instruction in L1, to develop academic proficiency in both languages and to maintain the mother-tongue (Hakuta, 1998).
Bilingual Transitional or Bilingual Staircase Education	Early literacy and instruction primarily in L1 with a progressive shift to 100% English (McKay, 1999; Hakuta, 1998; UNESCO, 2008).
Bilingual Transitional: Early/Late Exit Education	In early exit transition models all instruction is in L2 by Y2 or 3. Late exit is used for models where some instruction is in L1 up to Y6 (Hu, 2008).
Both-Ways Education	Delivers a 2-way exchange of culture, language and learning as well as community involvement in teaching and decision making (McKay, 1999; Batten, 1998).
Culturally Responsive	Uses cultural knowledge and frames of reference to make learning more relevant and effective (Klump, 2005).
English as a second language (ESL) Education	Students in a separate group learn English language skills necessary to operate in a mainstream classroom (Guglielmi, 2009).
Structured Immersion	English language learners are taught in English only with some allowance made for their language level. No L1 support (Hakuta, 1998).
Standard Australian English (SAuE)	The standard form of English spoken in Australia.
Aboriginal English (AE)	Dialectically distinct versions of English spoken by Indigenous people throughout Australia. They include distinct phonological, grammatical and lexical features.
Kriol (Creole)	English-based Creoles spoken across many parts of Northern Australia. Despite similarities to English in vocabulary, they have a distinct syntactic structure and grammar, and are considered languages in their own right. In some areas Kriol has been spoken by up to four generations of Indigenous people.

INTRODUCTION

The confluence of socio-economic, political, cultural, linguistic and educational developments in the Northern Territory (NT) over the past several decades has seen the issue of school education in Aboriginal¹ languages become an increasingly contested aspect of Indigenous education and public policy. Some, but not all of the larger Aboriginal language speaking communities consider it vital for their children to commence their schooling with a transitional period of formal instruction in their mother tongue for the maintenance of their heritage language and the central role this plays in children's positive cultural identification and the preservation of their traditional culture and knowledge systems.

At the same time, there is evidence from Australian and International studies showing that children from Indigenous language backgrounds who commence their first full-time year of primary schooling with some proficiency in English (or other equivalent official language) are advantaged in terms of their effective participation and success in the formal education system as well as within their own communities and wider society.

The desired outcomes of Indigenous language maintenance, English language acquisition, engagement with school learning, and improving the educational achievement of Indigenous students are all endorsed in current NT and national Indigenous education policy frameworks. However, there remain differing views as to when, how and at what cost these outcomes can be most effectively achieved (MCEETYA, 2006; DET 2008; Simpson et al 2009; Devlin, 2009).

TERMS OF REFERENCE

This systematic review of the literature on the evidence for different instructional approaches in supporting early English acquisition and the school learning outcomes of Indigenous children was commissioned by the NT Department of Education and Training (DET) in July 2009 with the following terms of reference:

The Menzies School of Health Research will complete a systematic review of the national and international literature on evidence-based practice in early years English language acquisition. This will include:

- a) **Explicit reference to learners living in 'English as a Foreign Language' context.**
- b) **Home languages that are predominantly oral rather than print-based and limited use of the target language outside of school.**
- c) **Consideration of Queensland, Western Australian and South Australian systems and programs and contexts.**

The report of this study will also include recommendations for enhancing the NT's English language programs (and systemic support structures for implementation) for students with home languages other than English, particularly for those living in a range of very remote Indigenous contexts.

¹ The terms 'Aboriginal' and 'Indigenous' are both used in this review to refer collectively to people who identify as being of Australian Aboriginal and/or Torres Strait Islander descent. The term 'Aboriginal' has traditionally been the locally preferred term for Indigenous people in the Northern Territory. However, in recent years the term 'Indigenous' has been increasingly used – particularly in official and academic publications. This has been influenced by its usage in international law and 'Indigenous' is now the preferred term of both the Australian and Northern Territory Governments. According to the Australian Human Rights Commission (2009) both of these terms are acceptable for referring to Australia's original inhabitants and acknowledging their distinct cultural identities whether they live in urban, regional or remote areas of Australia.

EXECUTIVE SUMMARY

Remote and very remote Australian Indigenous children form a higher proportion of the student cohort in the Northern Territory by comparison to neighbouring Queensland, Western Australia or South Australia. While these jurisdictions share many of the socio-demographic, geographic, linguistic and cultural contexts of the Northern Territory's remote and Indigenous population they have generally lower rates of risk factors such as over-crowded housing. Children in very remote NT communities have less exposure to spoken English outside of school than their inter-state counterparts due to the much lower proportions of adults who speak English at home or who have 10 or more years of school education (McKenzie, 2010).

Improving Indigenous educational outcomes is a national priority and a key feature of the '*Closing the Gap*' strategy endorsed by all Australian governments. This is supported by evidence that improving outcomes of early years learning is critical to subsequent trajectories of education, life-long learning and overcoming socio-economic disadvantage. Early childhood and primary school English language acquisition is predictive of subsequent outcomes of English oracy, school attendance and participation. Children's proficiency in their home language is also considered important to their identity, self esteem and cultural continuity. Most of the descriptive and theoretically based literature is premised on the necessity of healthy and appropriate early language and concept development in first language.

This review has focused on the national and international evidence most relevant to the contextual features of greatest challenge to an effective service delivery model in remote Indigenous settings. These include: a) predominantly oral-based home languages; b) English as a foreign language; c) minority and disadvantaged populations and d) high levels of geographic remoteness (where, typically, English is not the language of everyday discourse).

The publicly available policy and program documents and curriculum materials from Queensland, Western Australia and South Australia indicate that a variety of language instructional approaches are presently in use within and across these jurisdictions. Whilst there is a considerable descriptive literature on educational approaches in the Australian Indigenous context, there are relatively few evaluative studies and only three of those reviewed dealt specifically with the issue of an oral based language and acquisition of print literacy.

Both the national and international literatures on the topic are characterized by a scarcity of high quality quantitatively based studies. The first step of the review was therefore to identify those studies having a sufficient level of evidence to meaningfully evaluate the efficacy, effectiveness and characteristics of instructional approaches which have been shown to be successful in enabling early years English language acquisition and other learning outcomes.

From the studies reviewed, the main factors influencing remote Indigenous children's successful early learning outcomes, including proficiency in English and maintenance of Indigenous languages across all instructional approaches are:

- a) children commencing school with some proficiency in English;
- b) culturally responsive schools, curricula and teaching;
- c) strong school-community partnerships which support regular attendance and engagement with school learning;
- d) schools and communities having clearly articulated aspirations for their children's literacy and language development;
- e) quality teaching;
- f) high expectations of students (at school and at home);
- g) learning environments which acknowledge and promote self-esteem, self-efficacy and positive racial and cultural identification; and
- h) community and family factors such as adequate nutrition and housing.

While several instructional approaches are described in the literature, those with evidence of benefits for student learning and the acquisition of English by students from Indigenous home language backgrounds base may be categorized into three broad groups: a) Bilingual 50:50 or maintenance; b) Culturally responsive transitional bilingual; and c) culturally responsive with strong ESL support. The intended outcomes, benefits and limitations of each of these instructional approaches is summarised below in Table 2.

Table 2. Benefits and limitations of main instructional approaches reviewed

<i>Instructional approach</i>	<i>Intended Outcome</i>	<i>Benefits</i>	<i>Limitations</i>
a) Bilingual 50:50 or maintenance	<ul style="list-style-type: none"> ▪ Oracy in both languages. ▪ Literacy in both languages. ▪ Cultural & language maintenance 	<ul style="list-style-type: none"> ▪ Increased retention and school completions ▪ L1 students 'catch up' to native L2 speakers in their academic outcomes by year 6 ▪ Meta-cognitive benefits of functional bilingualism (i.e. produces additive benefits) 	<ul style="list-style-type: none"> ▪ Availability of suitably trained staff ▪ Availability of community resources & educational materials in Indigenous L1 languages ▪ Limited number of Indigenous language L1 speakers available to support this approach in schools
b) Culturally responsive transitional bilingual	<ul style="list-style-type: none"> ▪ Oracy in both languages ▪ Literacy in English. ▪ Ewawtcri(rpi wci g o clpvgcpeg . 	<ul style="list-style-type: none"> ▪ Students 'catch up' to native L2 speakers' academic outcomes by year 6 if given ongoing support in L1. 	<ul style="list-style-type: none"> ▪ Ceasing L1 support too abruptly or prematurely results in subtractive effects ▪ Assessment of literacy and capacity to identify transition points in curriculum and cognitive challenge (year 1, 4, 6/7, 10) ▪ Maintaining discipline- specific knowledge
c) Culturally responsive with strong ESL support	<ul style="list-style-type: none"> ▪ Oracy and Literacy in English. ▪ Cultural maintenance 	<ul style="list-style-type: none"> ▪ Cultural responsiveness of schools has wider benefits for attendance, student self-esteem, self-efficacy and positive racial identification. 	<ul style="list-style-type: none"> ▪ Language delays or underdeveloped acquisition in first language (L1) poses risks to further L1 and L2 acquisition and can negatively impact on other outcomes of school learning.

The evidence reviewed indicates that the first two instructional approaches listed in Table 2 can be *effective* in achieving their intended outcomes in specific community/school learning contexts providing the following implementation conditions are present:

1. There is committed support from the community and its Indigenous leadership for this instructional approach for the initial years of school education.
2. There is a sufficient number of instructionally and culturally competent staff, including first language speakers, to properly implement the approach.
3. The school leadership team is committed and able to take a proactive role in engaging community and family resources to support the implementation of the approach.
4. The school's ethos and learning programs aim to promote positive and active representation of children's (and families') first language and cultural heritage.
5. Suitably adaptable and culturally responsive curriculum, teaching and learning resource materials are available or could be produced at reasonable cost (where literacy in L1 is an expected outcome).
6. There is a system-level commitment to professional support of the approach to the specific community/school.

In communities where these circumstances do not prevail, the literature suggests that 'English as a Second Language (ESL) strategies' are the best approach to achieve improvement in student educational and language outcomes and to support community retention of Indigenous languages and culture - providing that they are delivered within a culturally responsive framework.

The availability of instructionally competent teachers of English as a second or foreign language is critically important to the success of classroom practice and student outcomes in bi- and multilingual communities. It is also important to have sufficient first language speaking teachers and teacher assistants with a thorough understanding of the differentiated instruction required for the success of culturally responsive ESL practice, particularly when working in a multilingual classroom.

Given the proportional increase in students from Kriol and Aboriginal English speaking families, more attention is needed within schools to acknowledge these as discrete languages or dialects of Australian English rather than deficient forms of Standard Australian English (SAuE). There is evidence such students benefit from explicit scaffolded instruction to understand the differences between these language forms and to become proficient in SAuE.

The Department of Education and Training should support NT schools and educators in developing and implementing a framework for culturally responsive schooling for Indigenous students. A potentially useful working model which could inform the further development of such resources for NT schools, teachers and communities is the Alaskan Standards for Culturally Responsive Schooling developed by the Assembly of Alaska Native Educators (Assembly of Alaska Native Educators, 1998; 1999; 2001).

RECOMMENDATIONS

The following recommendations have been formulated on the basis of the review to: a) develop the evidence base required to implement quality practice; b) improve the Department's strategic position for considered policy formulation that places importance on nurturing L1 development and English in the early years; and c) inform risk management. With this in mind it is recommended that the Department should:

1. Ascertain the current and projected numbers of Indigenous language, Kriol and Aboriginal English speakers commencing formal schooling in the NT each year.
2. With regard to the new national curriculum, identify the age appropriate assessments required for assessing the ESL/EFL needs and outcomes of Indigenous first language speakers including competence in their first language.
3. Identify the minimum pre-service and in-service competencies and understandings of teachers and Indigenous teacher assistants working with Indigenous language speaking students and families including Kriols and Aboriginal English.
4. Establish a register of teachers and teaching assistants in the NT who are qualified, experienced and linguistically able to provide and support instruction in a) English as a second language; b) home language learning; and c) English as a foreign language. This should be informed by recommendation 2 and integrated with teacher registration and standards (and Assistant teacher standards) to ensure consistency.
5. Conduct an audit of the curriculum materials and resources presently available and needed to enable culturally responsive school practice to support students' engagement with school learning and the development of their English language proficiency. The audit should consider their alignment with the new national curriculum.
6. Identify the minimum provision at the system, school and classroom levels required to meet necessary factors for success for existing and potential programs with the possible need for ongoing reviews of:
 - a. English as a second language teachers
 - b. Resources to support interpreter services and home language learners
 - c. The appropriate staffing allocations and equity funding loadings for schools tailored to their specific instructional and language acquisition requirements
 - d. Literacy production services including those provided through Indigenous language centres and the NT library services

7. Undertake annual monitoring of school and community perceptions of the level of school-community engagement through the Accountability Performance Improvement Framework (APIF) and the evaluation processes of the Transforming Indigenous Education initiative.
8. Adopt a consistent set of ‘standard’ definitions and terminology in describing the instructional approaches and language acquisition concepts in multilingual teaching for all departmental material.
9. Consider the commissioning of formative research and in-depth case studies to inform specific policy and practice issues such as:
 - a. The best strategies for improving instructional practice
 - b. Success factors associated with better learning outcomes
 - c. English and first language competencies of children as they commence school
 - d. Identification of language acquisition delays and disorders and appropriate interventions
 - e. Processes to improve school-community engagement
 - f. Improving teacher retention and instructional continuity
 - g. In-community staff support and professional training

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1. BACKGROUND

a) The current NT context

The academic, policy and political debate about bilingual vs. other instructional methods in remote NT Indigenous schools made national headlines in 2008 when the then NT Minister for Education, the Hon Marion Scrymgour, announced that all NT schools were required to have English as the medium of instruction in the first four hours of the school day and that Indigenous language and culture programs should be taught only in the afternoon school session (Scrymgour, 2008). However, the early origins of the debate can be traced back to the time of the introduction of bilingual programs in four remote NT schools in 1973 (Harris, 1995). By 1995 the number of schools offering bilingual programs was 22 but this has since reduced to 9 schools (DET, 2009).

At the time of the *Learning Lessons* report, it was noted that bilingual schools, or some of them, were achieving positive outcomes in comparison with comparable schools (Collins and Lea, 1999). However, the report also commented on the range and quality of instructional practices which were encompassed under the rubric of bilingual education "... depending on the experience and skills of the teachers available at any one time, and the school leadership support for bilingual education".

System level policy, professional support and resourcing for bilingual education has also fluctuated from over the years with notably reduced support over recent years (Devlin, 2009). Policy changes cited in support of this assertion include that from 1973 two models of bilingual program were implemented under an explicit bilingual policy. Then in 2005 the commitment was renewed with introduction of the term "Two-way learning" but limited to 10 schools. In 2008 the "bilingual" terminology was removed and replaced with "language maintenance and revitalisation". Devlin points out that these culture and language programs delivered in the afternoon session of are not bilingual programs as they do not reflect policy about the main language(s) of instruction. In terms of resourcing he notes that from 1973-78 there was dedicated funding for professional consultative teams including annual conferences for developing practice wisdom. From 1978-86 there was no funding available for new programs and a progressive reduction in staffing and funding for existing programs. In 2008 bilingual schools were reported to receive around 20% additional funding on a per-capita student basis in contrast to like schools (Scrymgour, 2008).

The implementation of the "*Four Hours of English*" policy brought new community speculation about the NT government's apparent intent to 'wind back' or completely dismantle bilingual education. Devlin (2009, 2010 a, b) has challenged the quality of the data used to justify this policy. The policy also brought criticism from the Human Rights and Equal Opportunities Commissioner (HERIOC) and the Central Land Council (CLC) regarding its legal and human rights implications in terms of Australia's international obligations to maintain the education rights of its Indigenous peoples (Calma, 2009; CLC, 2009). Australia is a signatory to the United

Nations Convention on the Rights of the Child (UN General Assembly, 1989) and the United Nations Declaration on the Rights of Indigenous Peoples (UN General Assembly, 2007) which both have articles outlining the obligations of States in supporting the education of children of Indigenous origin (Boxes 1 and 2 below).

Box 1.

United Nations Declaration of the Rights of the Child (1987)

Article

30

In those States in which ethnic, religious or linguistic minorities or persons of indigenous origin exist, a child belonging to such a minority or who is indigenous shall not be denied the right, in community with other members of his or her group, to enjoy his or her own culture, to profess and practise his or her own religion, or to use his or her own language.

Box 2.

United Nations Declaration of the Rights of Indigenous Peoples (2007)

Article 13

1. Indigenous peoples have the right to revitalize, use, develop and transmit to future generations their histories, languages, oral traditions, philosophies, writing systems and literatures, and to designate and retain their own names for communities, places and persons.
2. States shall take effective measures to ensure that this right is protected and also to ensure that indigenous peoples can understand and be understood in political, legal and administrative proceedings, where necessary through the provision of interpretation or by other appropriate means.

Article 14

1. Indigenous peoples have the right to establish and control their educational systems and institutions providing education in their own languages, in a manner appropriate to their cultural methods of teaching and learning.
2. Indigenous individuals, particularly children, have the right to all levels and forms of education of the State without discrimination.
3. States shall, in conjunction with indigenous peoples, take effective measures, in order for indigenous individuals, particularly children, including those living outside their communities, to have access, when possible, to an education in their own culture and provided in their own language.

Given the community sensitivities around these issues in the NT, it is important they are considered in the context of socio-demographic, cultural and educational settings in which they presently need to be addressed. The NT Department of Education (DET) currently administers some 150 government schools with total enrolments of approximately 33,000 students and employs over 3,700 full-time teachers and support staff. According to the 2009 DET Annual Report 40.5% of students enrolled in Transition to Year 12 identified as Indigenous compared with the national average of 4.4 per cent. Just over 60% of the NT Indigenous students were identified as being from non-English speaking family backgrounds (DET, 2009).

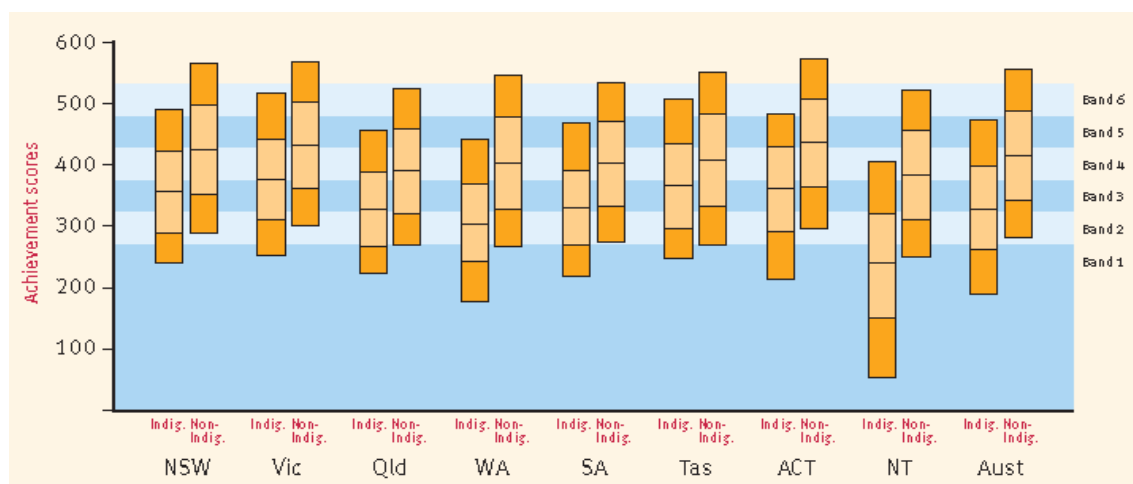
The scale of the task in addressing the Aboriginal language and English acquisition needs of Indigenous children in the NT is illustrated by data from the 2009 Australian Early Development Index (AEDI) national census of 5 year old children enrolled in their first year of full-time formal schooling (CCCH and TICH, 2009; Silburn et al 2010). Of the 1,306 NT Indigenous children assessed, around 76% (i.e. 995 children) were reported to have language backgrounds

other than English (LBOTE). Furthermore, 363 of these children were considered by teachers (and other Indigenous school staff) to have little or no proficiency in English on their entry to school. Noting that more than one language other than English may have been spoken in the home, the main languages reported to be spoken by these children were Aboriginal English (n=188), Kriol (n=165), Arrernte (n=74), Djambarrpuyngu (n=71), other Yolngu Matha (n=73), Walpiri (n=71), Alyawarr (n=57) and some 20 other traditional Indigenous languages spoken by a total of 269 children (CCCH and TICH, 2009). In addition, Indigenous children from remote and very remote communities are much more likely than Indigenous children living in outer regional areas to come from LBOTE backgrounds, to not be proficient in English and to have developmental vulnerabilities (Silburn et al, 2010). In many very remote communities, for example Ngukurr, there is a mixture of language groups who use Kriol as a lingua franca. In many remote Indigenous communities there are few opportunities for children to be exposed to English besides school and television.

The 2009 National Assessment Program for Literacy and Numeracy (NAPLAN) results provide a sobering report on the current standards of literacy and numeracy of NT Indigenous students relative to those of their NT non-Indigenous counterparts as well as their Indigenous and non-Indigenous counterparts elsewhere in Australia (Table 3 below). These data indicate that just 39.9% of year 3 Indigenous students in the NT had English reading proficiency at or above the national minimum standard in comparison with 75% of Indigenous year 3 children living elsewhere in Australia. There is a 50% point difference between NT Indigenous and non-Indigenous students in meeting national minimum standards in English reading proficiency (39.9% vs. 89.9%). This is more than two-and-a-half times greater than the 19.4% gap between all Australian Indigenous and non-Indigenous students (75.1% vs. 94.5%). NAPLAN scores in remote Indigenous communities are much lower even than these figures, and are strongly correlated to the proportion of English speaking households (as well as median income) in the community (McKenzie, 2010).

While the NT has made some progress in expanding the provision of primary education and created new opportunities for pre-school and educational playgroup experience in remote and very remote areas of the Territory, the available data on school attendance and educational achievement – particularly for Indigenous children living in remote and very remote communities – reveal substantial and continuing levels of under-achievement relative to national benchmarks (Ladwig and Sara, 2009). More particularly, the gap of Indigenous students on the NAPLAN measures of literacy and numeracy appears to widen the longer students remain in school during their years of compulsory school attendance (MCEEDYA, 2009).

Table 3. NAPLAN National Assessment Program for Literacy and Numeracy (MCEEDYA, 2009): Achievement of Year 3 Students in Reading, by Indigenous Status by State and Territory



	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Indigenous Mean scale score / (S.D.)	355.6 (77.4)	375.3 (79.2)	327.9 (72.1)	304.4 (79.2)	329.5 (77.2)	365.4 (82.4)	361.6 (79.7)	239.4 (105.1)	327.4 (88.2)
Non-Indigenous Mean scale score / (S.D.)	425.0 (84.5)	431.0 (81.5)	390.0 (78.2)	403.8 (85.1)	401.6 (79.0)	408.2 (86.3)	435.7 (83.6)	383.2 (84.6)	415.0 (83.8)

State/ Territory	Indigenous status	Below national minimum standard (%)		At national minimum standard (%)	Above national minimum standard (%)				At or above national minimum standard (%)
		Exempt	Band 1	Band 2	Band 3	Band 4	Band 5	Band 6 and above	
NSW	Indigenous	2.0	12.2	23.2	24.6	20.0	11.3	6.7	85.8
	Non-Indigenous	1.3	2.7	8.8	16.4	22.6	21.5	26.6	96.0
Vic	Indigenous	5.7	7.1	17.2	25.1	21.5	13.3	10.2	87.2
	Non-Indigenous	2.5	1.8	7.1	15.5	23.1	22.5	27.7	95.8
Qld	Indigenous	2.5	20.4	29.6	23.3	14.6	6.6	2.9	77.1
	Non-Indigenous	1.8	5.1	15.3	22.4	23.8	17.9	13.6	93.1
WA	Indigenous	1.1	32.6	29.0	18.9	11.4	5.1	1.9	66.3
	Non-Indigenous	1.3	5.3	12.5	18.9	22.8	19.6	19.6	93.4
SA	Indigenous	2.2	20.3	27.7	24.1	15.0	7.2	3.5	77.6
	Non-Indigenous	1.7	4.1	12.3	20.3	24.7	19.9	17.1	94.2
Tas	Indigenous	2.9	10.2	22.3	22.4	20.3	12.4	9.5	87.0
	Non-Indigenous	1.3	5.0	11.8	18.3	22.2	20.1	21.2	93.6
ACT	Indigenous	3.9	12.5	17.5	22.2	23.7	14.7	5.5	83.5
	Non-Indigenous	2.9	2.1	6.8	13.9	21.7	22.6	30.0	95.1
NT	Indigenous	1.4	58.7	21.0	10.1	5.8	1.9	1.1	39.9
	Non-Indigenous	2.0	8.1	15.9	21.5	22.8	16.4	13.3	89.9
Aust	Indigenous	2.2	22.7	25.5	21.7	15.5	8.0	4.4	75.1
	Non-Indigenous	1.8	3.4	10.4	18.0	23.1	20.7	22.7	94.8

(Source: NAPLAN, 2009)

b) Cross jurisdictional comparisons

The Northern Territory approach described above can be compared with current departmental approaches to support Indigenous early years literacy and language learning in Western Australia, Queensland, South Australia and New South Wales. The first three of these jurisdictions share some of the socio-demographic, geographic, linguistic and cultural contexts of the Northern Territory's remote and Indigenous population but with a much lower prevalence of risk factors (McKenzie, 2010). NSW was included in this comparison given the size and diversity of its Indigenous student population. The publicly available documents from these jurisdictions were reviewed with reference to supplementary information obtained through personal correspondence with relevant departmental officers and a review of systemic policy and strategic documents, endorsed or supported programs and approaches, and curriculum materials.

Systemic Policy and Strategic Documents

All of these government school systems have policy and/or strategy documents outlining their early-years programs, their targeted outcomes, and documented responses to the Council of Australian Governments' '*Closing the Gap*' reform agenda. Many of these policy documents focus on literacy and numeracy levels, attendance, retention, training pathways and workforce development. In Queensland, the '*Partners for Success*' (DETA, 2005) strategy contains a sub-strategy for Torres Strait Islands and Cape York entitled '*Bound for Success*' (DETA, 2005). This parallel policy focuses on the unique challenges of remoteness and socio-demographic needs of Aboriginal and Torres Strait Island populations in achieving academic parity. '*Bound for Success*' also contains an alternative curriculum and pedagogy for early years language instruction including the support of L1 language nests.

South Australia, New South Wales and until recently, Western Australia have system-level strategic plans which articulate the aspirational outcomes for students and staff. A number of these strategic plans clearly identify the importance of identity and cultural or linguistic (dialectical) recognition in improving outcomes. Further, most strategies or policies advocate the role of Indigenous communities and families as partners in the education and decision making for education of their children.

The Western Australian Department of Education and Training (WADET) '*Aboriginal Literacy Strategy*' (ALS) consists of a systematic and structured set of strategies for 'two-way', bi-dialectical, ESL and English as a Second Dialect (ESD) approaches in 2 hour explicit instruction blocks. A review not yet published and awaiting corporate endorsement, finds that students are more comfortable with the 2 hour structured session and that teachers believe that the ALS can improve outcomes when implemented adequately. There are two additional elements to the ALS in WADET schools, '*ABC of Two-way Literacy and Learning*' (WADET, 1998) and '*Indigenous Language Speaking Students Program*' (Australian Government funded). The '*ABC of Two-way Learning*' faces the difficulty of insufficient qualified staff to meet the present demand for the delivery of 'two-way' professional learning.

South Australia's *'Aboriginal Education Strategy'* (DECS, 2005) sits within the context of a comprehensive, whole of government *'Cultural Inclusion Framework'* which includes assessment tools (SA Department of the Premier and Cabinet, 2006). In other jurisdictions, culturally inclusive approaches for schooling, including use of Indigenous languages, are embedded in Indigenous Perspectives across the curriculum (see below discussion of these). In addition, the states reviewed have previously subscribed to the *'Indigenous Education Strategic Initiatives Program'* (IESIP) which required schools to implement programs within the prescribed culturally inclusive guidelines. This program has ceased but other funding programs, such as *'ESL for Indigenous Language Speaking Student's'* or the *'Supplementary Recurrent Assistance'*, have similar requirements.

Endorsed or Supported Programs and Approaches

While the Northern Territory, Western Australia and South Australia all employ teacher linguists, teachers and Indigenous teacher assistants with varying levels of training in bilingual or ESL instructional approaches, these jurisdictions differ in the extent to which schools are supported or required to provide bilingual, bidialectic or ESL instruction. Both the Northern Territory and Western Australian government education systems have requirements for schools to provide a defined daily period of explicit English language instruction. In the Northern Territory the first four hours of classroom instruction is required to be delivered in English (DET, 2008).

In Queensland the *'Foundations for Success'* program is delivered in remote communities (largely Cape York and Torres Strait Islands) having high proportions of Indigenous language speakers (particularly Aboriginal English and Kriol). This program has a culturally inclusive philosophy and recognises that successful early learning is reliant on a strong relationship between school and community. It places particular emphasis on valuing home languages and culture whilst creating play-based learning environments to support children's developing awareness of Standard Australian English (SAuE) as a second or additional language. The program is delivered through team teaching by teachers working with Indigenous language speaking teacher assistants. While there is no requirement for ESL training of teacher assistants, Education Queensland provides support for these staff to undertake Certificate 3 and Bachelor of Education training through Tropical North Queensland TAFE and James Cook University whilst based within their communities through their Remote Area Teacher Education Program (DEA Qld, 2008).

There is no support for or employment of bilingual teachers in Queensland or Western Australia. However, in South Australia preschool bilingual officers can support children with an Aboriginal language background although DECS officers suggest that demand is greater than the supply of appropriately trained staff.

A common concern of all of these education systems is how to meet the need for training and to effectively support staff in ESL and ESD strategies. WA DET has proactively sought to increase

access to ESL and ESD professional learning through its *'ABC of Two-Way Literacy and Learning'* project since the introduction of the *'WA Aboriginal Literacy Strategy'* - particularly for Aboriginal English and Kriol speakers. These programs emphasise and recommend that ESL and ESD outcomes are accelerated when students' first languages are recognised and built on. This emphasises the importance for school staff to find out about the home languages of their students. The decentralisation of services in all of the jurisdictions has presented additional challenges such as undersupply of trained staff in the provision of professional learning for educators in very widely dispersed remote schools.

Curriculum Materials

Curriculum documents across the jurisdictions represent the role Indigenous languages including Aboriginal English and Kriol, in SAuE acquisition in a range of ways. Policy documents also give varied treatment to the recognition of home language, Aboriginal English and Kriol in supported or promoted instructional approaches. The South Australian *'Curriculum Standards and Accountability Framework'* gives very strong recognition to Indigenous languages and the types of learning programs appropriate for their instruction: first language maintenance, second language learning, language revival and language awareness. New South Wales curriculum documents recognise Aboriginal Englishes as valuable bases for two-way and bi-dialectal English programs. The Queensland *'Embedding Aboriginal and Torres Strait Islander Perspectives in Schools'* gives similar emphasis to recognising that teachers require a solid knowledge of children's home language in order to provide explicit and well differentiated instruction in SAuE. The Northern Territory Curriculum Framework (NTCF) has both an English as a Second Language section and a specific *'Indigenous Languages and Culture'* element. The ESL section describes and guides teaching for a range of contexts including explicit reference to students who with an Indigenous language, Kriol or Aboriginal English. The Indigenous Languages and Culture element has three main components: culture including specific content areas; language maintenance and language revitalisation. The NTCF has a companion guide for teachers in the Early Years called *Strong Beginnings: An explicit guide to Quality Practice in the Early Years*. This document draws heavily on the high quality pedagogy and strategies previously taught through "ESL in the Mainstream", an accredited professional development program.

c) International comparisons

The political, cultural and educational concerns underpinning the debate about NT school policy regarding bilingual education and other instructional approaches to the early acquisition of English have parallels in other countries. These parallels are strongly related to the focus on the human rights base as opposed to the practicalities or feasibility of various language approaches.

In view of the increased global awareness of the value of the world's linguistic and cultural diversity and concern about the rate at which languages and cultures are being lost, the world's nations have committed to the goals of UNESCO's *'Education for All'* and to the need for

improved quality of education and expanded educational opportunity for marginalised and underserved groups – including language minority groups whose opportunities for participation are challenged by socially dominant languages and cultures (UNESCO, 2006).

‘Education for All’ highlights the importance of education in promoting respect for linguistic and cultural rights and peaceful co-existence in multicultural and multilingual societies. While UNESCO has long advocated the explicit inclusion of local languages in formal education systems, the increased pace of globalisation, wider availability of new information technologies and spread of democratic ideals has led it to now also emphasize the need for students to be proficient in international and regional languages to gain access to wider society and to participate meaningfully in their world (UNESCO, 1953 & 2008).

A number of important comparisons made in the 2008 UNESCO report are include here to draw parallels and to contrast policy and program approaches in contexts that share some similar socio-demographic features as the Northern Territory. Both Mali and Peru provide bilingual programs that aim to maintain minority (and Indigenous) languages, whilst Papua New Guinea (PNG) with 430 indigenous languages provides early years education in the vernacular. The educational outcomes under these policies and programs followed over 10 years (PNG) and 20 years (Mali) showed improved academic performance in the dominant or majority language (UNESCO, 2008).

These findings from these countries highlight the impact of long term political commitment and sustained support for policy to take effect. Although political support is often indicative of financial resourcing, in the three case studies of Mali, Peru and PNG, programs are sustained largely through central government and other external funding sources. The UNESCO report notes that political impact is often in the privilege, power or preference given to the majority second language and this in some instances has been found to have detrimental effects on the socio-economic and engagement of other minority populations .

Ongoing, active community involvement in program implementation and review has also been a critical success factor in the instructional language reforms in complex contexts such as Papua New Guinea. New Zealand having only one Indigenous language, in contrast with the Australian Indigenous population, has limited comparative value. However, given New Zealand’s similar history of colonisation, and strong academic and political ties with Australia, it is of relevance to note its “rights-based” approach to biculturalism and bilingual education. The continuing high level of government support for this instructional approach in New Zealand appears to have come from a public understanding of the need to close the gap between Maori and Pakeha educational outcomes (May, 2005).

In the USA there have been long-standing issues about the learning of English by its minority Hispanic, Native American and ethnic immigrant populations dating back to the time of colonisation and continuing through the periods of mass European migration following World Wars 1 and II, and the more recent arrivals from the Spanish speaking Americas. Federal rights-

based legislation such as the “*Equal Opportunities Act of 1974*” (US Congress, 1974) and the “*No Child Left Behind Act of 2001*”(US Congress, 2001) has been used as an instrument of reform leading to substantial increases in funding to States, school systems and schools to improve opportunities for effective participation in school learning, as well as improving the educational outcomes of all students with special learning needs, including LBOTE students and students with disabilities.

A recent (2009) US Supreme Court judgement concerning a earlier class action against the State of Arizona for failing to meet its obligations in making adequate provision for schools to meet the English Language Learning (ELL) needs of students with family language backgrounds other than English offers an instructive comparison with the NT situation and the demand for evidence based policy and accountability (Supreme Court of the United States, 2009). The educational contexts of Arizona and the NT clearly have many differences e.g. their respective educational systems, legislative frameworks, proportion of LBOTE students, as well as the opportunities for children to use and be exposed to English in everyday discourse. However, the details of the case offer some insights into how legislative driven reform has led to increased resourcing, and changes in instructional practices, to better address the learning needs of LBOTE students. The Arizona case arose when a group of ELL students and their parents filed a class-action in the US Federal District Court in 2000. This alleged that Arizona, its State Board of Education, and the Superintendent of Public Instruction were providing inadequate bilingual ELL instruction in the school district of Nogales and this was in violation of the federal *Equal Opportunities Act of 1974* (US Congress, 1974).¹ It was argued that the amount of State funding to the school district to meet the special needs of ELL students was arbitrary and not related to the actual costs of bilingual ELL instruction. The initial court ruling found the State of Arizona was in contempt of the *Equal Opportunities Act of 1974* (ibid) and ordered that an annual incremental increase be made in the allocation of resources for ELL instruction. The State of Arizona then established an “*English Language Learners Task Force*” to develop and adopt research-based models of Structured English Immersion (SEI) programs for use by school districts and charter schools (School Board Of Arizona, 2006)². The Task Force’s recommendations cited documented academic support for SEI being more effective than bilingual education. It also included data from the Arizona State Department of Education showing that students in SEI programs out-performed bilingual instruction students in 24 out of 24 comparisons between like schools (Arizona Department of Education, 2004). Furthermore, these data showed mean literacy performance levels of SEI students was just 3 months ahead of their bilingual instruction

¹ The main form of ELL provided in the Nogales School District when the class action was initially filed was ‘*Bilingual Education*’. This involves core content areas being taught in a student’s native language while English instruction is provided in separate language classes.

² ‘*Sheltered English Immersion*’ or ‘*Structured English Immersion*’ is an English acquisition process for young children in which nearly all classroom instruction is in English but with the curriculum and presentation designed for children who are learning the language.....Although teachers may use a minimal amount of the child’s native language when necessary, no subject shall be taught in any language other than English, and children in this program learn to read and write solely in English” (Ariz. Rev. Stat. §(5)).

counterparts in the 3rd grade, this increased to a 12 month academic advantage by the time these students had reached the 7th and 8th grades (ibid).

In 2006 the State of Arizona legislated increased funding for ELL instruction and required all school districts and schools to select one of the SEI models recommended by its *English Language Learners Task Force* (Arizona Department of Education, 2006). In practical terms, this meant changing from a predominantly bilingual education approach to a structured English immersion approach for all ELL instruction. The State of Arizona then appealed to the Federal Court to have the original contempt order removed on the grounds that the State Education Department had instituted significant curriculum improvements in ELL practice and performance standards, including significantly increased funding for ELL. The 2009 Supreme Court decision on this appeal acknowledged the improved circumstances for ELL students but remanded the case back to the Federal District Court for further evidentiary proceedings to determine whether the provisions mandated for the Nogales School District should also apply to the entire State, and also ruled that the requirements of the original Federal District Court ruling should continue to apply (Supreme Court of the United States, 2009).

d) Standards-based accountability in education

Emphasis on measurable educational outcomes and ‘standards-based accountability’ has been a defining feature of educational reform in Australia and most developed countries in recent years. This has seen the introduction of national approaches to the monitoring of student competencies in literacy and numeracy as well as greater transparency of government services in reporting population and school level results. The increased cultural and language diversity of the school-aged population in countries such as Australia, the UK and USA has also necessitated policy and school practice and differential resourcing to address issues of educational equity e.g. for children from disadvantaged families, children from language backgrounds other than English, children with sensory or developmental disabilities. Whereas educational equity used to be defined in terms of equality of opportunity, current policy now seeks to achieve greater equality in the outcomes of education, also called substantive equity (WA Department of Premier & Cabinet, 2006).

The greater emphasis on accountability in professional practice in health, education and other areas of public sector management has brought with it the notion of ‘evidence-based practice’ (EBP) as a means of ensuring the quality, efficiency and effectiveness of policy, programs and services in achieving desired individual and population outcomes. This has its origins in ‘evidence based-medicine’ (EBM) first advocated by the UK epidemiologist Cochrane who suggested that “...because resources would always be limited, they should be used to provide forms of health care which had been shown in properly designed evaluations to be most effective” (Cochrane, 1972). Medicine has had a long history where practice was based on loose bodies of knowledge, or simply lore that drew upon the experiences of generations of practitioners, with much of it having little, or no, scientific evidence on which to justify various practices. Much of the rapid recent advances in medicine and health care can be attributed of the

wide-spread adoption of EBM. It has been of value in protecting the public from the risks of unfounded 'treatments' as well as identifying risks associated with 'established' as well as unfounded 'treatments'. Put simply, it has shown the value of identifying what actually does work so it can be improved and promoted.

Evidence based practice has also become a major influence in education over the same period. In a similar fashion it has been suggested that the limited progress in improving educational outcomes can, in part, be attributed to instructional practices derived from the unconnected experience of thousands of individual teachers, each 're-inventing the wheel' and failing to adapt their practices in the light of the cumulative scientific evidence regarding 'what works'. Opponents of this view suggest that the EBP model is entirely inappropriate for knowing whether a particular teaching method works, as this will depend on a host of specific contextual factors, not least of which are those to do with the style, personality and beliefs of the teacher and the specific needs of the particular children. However, modern evaluation theory stresses the need to consider the various types of evidence which are appropriate to their intended purpose for evaluating programs and practices with different populations and in differing practice settings.

Rather than reaching policy conclusions and deciding actions on the basis of the evaluation of single studies or programs, evidence-based policy and practice now generally assumes that it is necessary to aggregate results from a range of different evaluations through systematic reviews in order to produce reliable and comprehensive evidence. This entails locating the evidence, critically appraising its relevance, consistency, quality and value, then synthesizing and disseminating the conclusions with recommendations (or requirements) for improving practice.

Some systematic reviews include meta-analyses using special statistical methods to summarize the results of independent studies in terms of their relative and combined effect sizes. However, this requires suitable data to be available from several high-quality studies which include well-specified programs as well as comparable measures of the critical outcome(s) of interest. Where the reviewed studies meet these methodological requirements, their data can be combined to provide more precise estimates of the comparative or combined effects of programs or interventions than those evident from the individual studies.

Unfortunately the number and comparability of the available studies regarding the relative benefits of different instructional approaches to the early years English acquisition of Australian and other Indigenous children having Indigenous languages as their first (or second) language was insufficient for statistically based methods of meta-analysis. The greater majority of the papers reviewed had levels of evidence appropriate to their intended purposes of knowledge production (e.g. descriptive research informing theory building and testing), and program development (e.g. formative aspects of instructional program development and un-controlled studies of the outcomes of different instructional approaches). While such studies are valuable in informing whether policies, programs, curricula, and instructional approaches are consistent with

current pedagogical, linguistic and neuro-developmental theory, they do not generally provide the level of empirical evidence required for program accountability purposes.

e) Evidence standards used for this review

For heuristic purposes we chose to follow the recommendations of the Society for Prevention Research standards of evidence for identifying which interventions are efficacious, which are effective, and which are ready for dissemination (Society for Prevention Research, 2009). These standards recognise that new approaches or interventions are generally first evaluated by their originators or others under optimal conditions, such as having ample resources and well-trained and carefully supervised teaching and other support personnel. However, intervention approaches worthy of dissemination must also be effective under real-world conditions. It is necessary therefore to distinguish between efficacy research and effectiveness research. “*Efficacy*” refers to the beneficial effects under optimal conditions of delivery, whereas “*Effectiveness*” refers to effects of an approach, program or policy under real-world conditions (Flay, 1986; Kellam and Langevin, 2003). For example, a researcher may test a school-based program with highly trained and supervised research staff delivering the intervention under optimal conditions. By contrast, regular classroom teachers, with many competing demands on their time and attention every day, may deliver the intervention under less than optimal conditions once it is disseminated (Hansen and Dusenbury, 2001).

Few existing programs and pedagogical approaches in Australian schools would meet all of these exacting standards given the current stage of applied translational educational research in this country (see box 3 overleaf). Nevertheless, they are instructive in pointing to the kinds of educational research and data which are needed to ensure that the identification and funding of new and existing educational initiatives is guided by the best standards of evidence based practice.

Box 3.**Criteria for Efficacy, Effectiveness and Dissemination (SPR, 2009)**

An **efficacious intervention** will have been tested in at least two rigorous trials that:-

1. involved defined samples from defined populations;
2. used psychometrically sound measures and data collection procedures;
3. analysed their data with rigorous statistical approaches;
4. showed consistent positive effects (without serious adverse unintended effects); and
5. reported at least one significant long-term follow-up.

An **effective intervention** will not only meet all standards for efficacious interventions, but also will have:-

1. manuals, appropriate training, and technical support available to allow third parties to adopt and implement the intervention;
2. been evaluated under real-world conditions in studies that included sound measurement of the level of implementation and engagement of the target audience (in both the intervention and control conditions); indicated the practical importance of intervention outcome effects; and
3. clearly demonstrated to whom intervention findings can be generalized.

An **intervention recognized as ready for broad dissemination** will not only meet all standards for efficacious and effective interventions, but will also provide:

1. evidence of the ability to “go to scale”;
2. clear cost information; and
3. monitoring and evaluation tools so that adopting agencies can monitor or evaluate how well the intervention works in their settings. (Society for Prevention Research (2009): Full document available at www.preventionresearch.org)

2. METHODOLOGY

a) Terminology and scope of the review

For the purpose of this review, ‘early years’ was considered to include the years of early child development from birth to age 8 years. The scope of the review included the available Australian and international literature on schooling and instructional practices supporting the successful engagement of Indigenous children in the early years of school learning – particularly those living in remote and very remote contexts, those for whom English is a foreign language, those whose home languages are predominantly oral rather than print-based, and where there are limited opportunities for children’s exposure to English outside of the school setting.

The review also included studies of current approaches to school engagement, instructional practice, English language acquisition and Indigenous language development of Indigenous children living in remote communities in Queensland, Western Australia and South Australia. ‘English language acquisition’ is defined as the development of proficiency in Standard Australian English (SAuE) in terms of oracy, literacy and numeracy. ‘Indigenous language development’ is defined as the development of the child’s proficiency in their Indigenous language as evident in their oracy, literacy and numeracy in formal school learning. Some of the associated outcomes included in the review are a) the retention of Indigenous languages, b) identification with Indigenous culture; c) maintenance of cultural continuity and community coherence; c) self-esteem, self-efficacy and emotional resilience; d) cognitive development outcomes for learners with more than one language; e) outcomes in school attendance, participation and retention; f) ability to engage with and function in contemporary Australian mainstream culture and g) longer-term employment, vocational and social outcomes.

b) Identification and selection of studies

The first stage in selecting studies for inclusion in the review involved a systematic search of the national and international literature available on the World Wide Web, relevant electronic databases The following education and health databases were used:

Table 4. Education and health databases searched

1) EBSCOHost	7) Science Direct
2) APIAS-Health	8) ERIC
3) Blackwell Synergy	9) A+Education
4) CINAHL(EBSCO)	10) Education Research Complete
5) Cochrane Library	11) Informit
6) PubMed	12) Academic Search Premier

c) Search categories and terms

The Cochrane Review PICO Framework (Schardt et al, 2007) was used to organize and combine the following search categories and terms (see Table 5 below).

Table 5. Search categories and terms

<i>Search category</i>	<i>Search terms</i>
Populations	‘Aboriginal’; ‘Indigenous’, ‘Inuit’; ‘First Nations’; ‘American Indian’; Maori’; ‘child’
Instructional practices	'bilingual', 'English as a foreign language' and 'two way learning', ‘multi-lingual learning’
Language & culture	‘Language preservation’, ‘Cultural maintenance’, ‘Language revitalization’, ‘Culturally responsive’, ‘Traditional indigenous language’
Outcomes	‘English language acquisition’; English language learning’; ‘school engagement’; ‘school attendance’; ‘literacy’; ‘academic achievement’; ‘self-esteem’; ‘cultural identification’.

d) Key sources: A number of references were sourced to access original evidence through international and national experts, including not yet published materials, reports and data. Grey literature such as relevant government or non-government reports was also included where available. All potentially relevant studies identified using the above search strategies were retrieved on the basis of their title, abstract, or descriptors. Four reviewers also independently searched the literature to identify other potentially relevant literature for full review. This included searches of bibliographies and texts to identify other additional studies of potential relevance.

e) Levels of evidence ratings: Each of the available full-text literature items meeting the above inclusion criteria was then rated independently by three of the review authors (SS, GN & JMCK) using the The Standards of Evidence: Criteria for Efficacy, Effectiveness and Dissemination (Society for Prevention Research 2009). This framework was considered to be the most appropriate benchmark for standards of evidence and objectivity for the type of social and educational studies that would not usually be rateable in the medically oriented NHMRC standards for evidence (NHMRC, 1995). Individual ratings were made of whether studies had met each of the 12 SRP evidence criteria to produce an overall evidence score ranging from 0–12. Evidence scores 0-4 were classified as ‘Low’, 5-8 as ‘Medium’ and 9-12 as ‘High’. In those

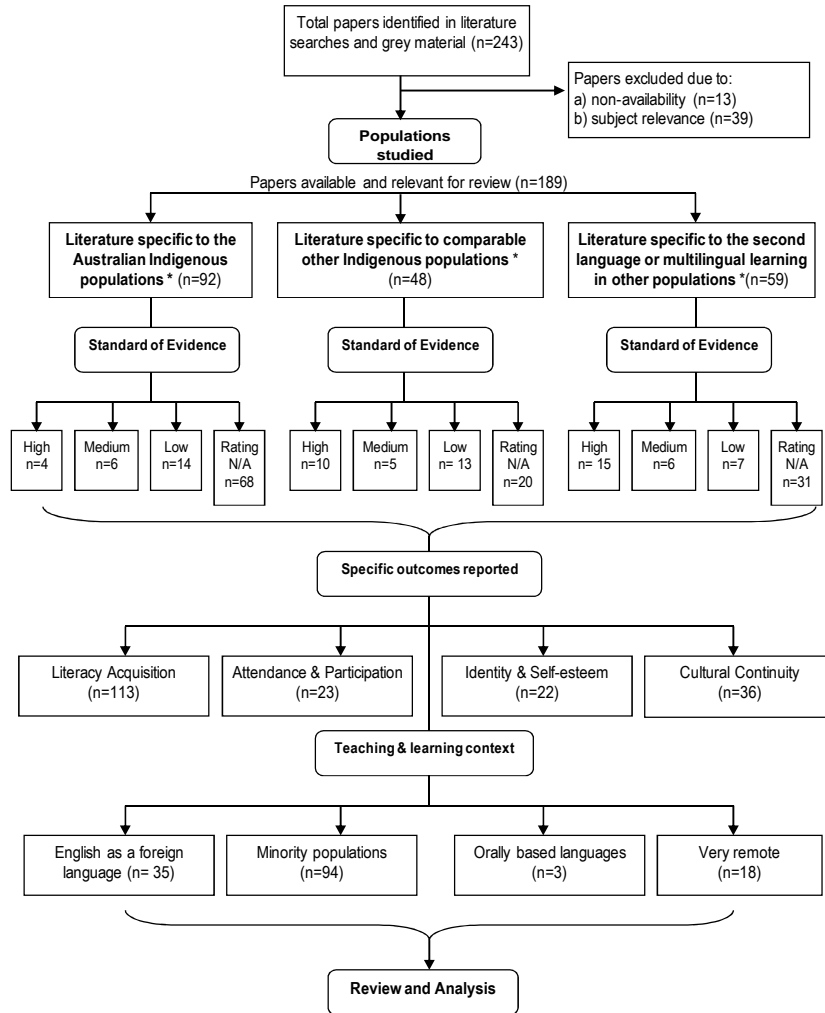
instances where evidence scores differed, ratings were discussed jointly to arrive at a moderated consensus.

f) Data extraction and management: Formal statistical methods of meta-analysis of the data across the literature were not possible due to there being too few of the available empirical studies having sufficient sampling information, comparable outcome measures, adequate description of programs of instruction, or the training and quality assurance processes for assessing instructional adherence or program fidelity. This search and review process yielded a total of 243 eligible studies and reports which were referenced to an Endnote Library, these were then reviewed and categorised as follows:

Table 6. Literature sorting categories

<i>Issue/construct</i>	<i>Categories</i>	<i>Number of papers</i>
Availability & relevance	• Excluded due to unavailability:	13
	• Excluded due to irrelevance	39
Indigenous status	• Australian Indigenous specific	92
	• Other Indigenous	48
	• General 2 nd language learners	59
Nature of report/paper	• Interventions	65
	• Descriptive	75
	• Policy	51
	• Meta-analyses	7
	• Reviews	33
	• Empirical studies	56
	• Case Studies	18
	• Administrative Reports	56
	• Theoretical or commentary	23
Standard of evidence	• High	29
	• Medium	17
	• Low	34
	• Not ratable	119
Outcomes reported:	• Literacy acquisition outcomes	113
	• Attendance and participation	23
	• Identity	21
	• Cultural continuity	36
Target population:	• EFL contexts	35
	• Minority populations	97
	• Oral based language	4
	• Very remote	18

g. QUORM flow chart



[* These population categories are not mutually exclusive]

h) Summary Tables

Table 7. Reviewed studies by evidence type and evidence rating

<i>Evidence</i>	<i>SPR Standard of Evidence Rating</i>			
	No Rating possible	Low (Scores 0-4)	Medium (Scores 5-8)	High (Scores 9-12)
<i>Meta analyses / Reviews</i>	Boughton, 1999b; Mellor, 2004; Ladwig, 2009; Calma, 2009; McTurk, 2008; MCEETYA, 2001b; 2001c; Malin, 2003; Martinez-Roldan, 2004; Ovandao, 1985; Hakuta, 1989; McCain, 2007; Elliott, 2006; de Coursey, 2005; Reyhner, 2003; McCarty 2008	Devlin, 1995; Arnold, 2002; McKinley, 2008; August, 2006;	Hutchins, 2007; Nixon, 2007; US Department of Health, 2004; Janus, (2003); Howard, 2001	Greene, 1998; Apthorp, 2002; Slavin, 2005; Willig, 1985; Cummins, 1989; 2009; Allen, 2007; Ramirez, 1991; Rolstad, 2005; Collier, 2004; Rossell, 1996; Bendes, 2002
<i>Empirical studies</i>	Purdie, 2000; FaCS, 2002; Zubrick, 2004; Disbray, 2008; Frigo, 2004; Harris, 1990; DEET, 2004; Malcolm, 2005; Language Teaching, 2006; WWC, u.d.; Hu, 2008; Wylie, 2006; Wright, 2007; Torrens, 2006; Parker, 2005; Marks, 2007; McCarty, 2003; Rinehart, 2006; Lockard, 2000	Clancy, 2003; Priest, 2008; Freeman, 2008; Molyneux, 2009; DEET, 2004; Lowell, 1998; Hakuta, 2003; Wallace, 2007; Hallet, 2007; McEwan, 2007; Demmert, 2001; Health Canada, 2000; Francis, 1999; Tuafuti, 2005; Trujillo, 2003; ; McCarty, 2003; Moran, 2007a; 2007b; Begg, 2004	Frigo, 2002; Wylie, 2006; Louden, 2005; Rau, 2005; Ball, 2001; Tagoilelagi- Leota, 2005; Lavoie, 2008; McKay, 199; Pearson, 2009; Devlin 2010a; 2010b;	Zubrick, 2004; Thomas, 1997; Guglielmi, 2008; Bialystok, 2005; Kieffer, 2008; Barnett, 2007; Sparks, 2008; Tong, 2008; Marks, 2003; 2007; Parker, 2005; Branum-Martin, 2006; Robinson, 2009; Wright, 2000 Gale 1981 Murtagh 1982
<i>Case Studies</i>	Simpson, L. C., S. . (2000). Dockett, 2006; FaCHSIA, 2006; Batten, 1998; Fleer, 2002; Lee, 1993; Cahill, 2003; Tharp, 1994	Fleer, 2006, Dockett, 2008; Slattery, 1993; Hill, 2002; Klump, 2005; Paciotto, 2004; Tharp, 1994	Fasoli, 2007; Shepherd, 2008; McRae, 2000;	UNESCO, 2008;

[Table 7 is continued on the following page]

Table 7 (Contd.). Reviewed studies by evidence type and evidence rating

<i>Evidence</i>	<i>SPR Standard of Evidence Rating</i>			
	No Rating possible	Low (Scores 0-4)	Medium (Scores 5-8)	High (Scores 9-12)
<i>Reports</i>	Penman, 2006; McRae, 2000; Collins, 1999; Australian Government, 1989; 1988; DEST, 2002; NTGovernment, 2009; NSWGovernment, 2004; Department of Education and the Arts, 2005a; 2005b; 2010; Clancy, 2002; Robinson, 2005; CLC, 2009; Cranston, 2007; WA DPC, 2002; McConvell, 1982; Welford, 2008; NTG, 2007; NTIEC, 2009; Schwab, 2004; White, 2009; SA DPC, 2006; CLC, u.d.; Australian Early Development Index, 2009; DEET, 2009; UNESCO, 1953; 2003; 2006; 2008; Arizona Department of Education, 2004; 2006; MCEEDYA, 2009; Olier, 2002; Thomas, 2006; US Congress, 1974; Wyatt-Smith, 2007; Walker, 2004; Robust, 2000; Clay, 2006; Goto, 2004; Tobias, 1994; Assembly of Alaska Native Educators, 1998; 1999; 2001; Supreme Court US, 2009	NTDET, 2007; Kosonen, 2006;		
<i>Opinion and Comment</i>	Howard, D. (2007; Simpson, 2009; Hanlen, 2007; Malin, 1998; Cleary, 2005; DET, 1998; Buckskin, 2001; Scrymgour, 2008; Nicholls, 2005; Devlin, 2009; Partington, 2000; DEST, 1989; Adams, 1998; NAEC, 1985; Hakuta, 1998; UN, 1989; 2007; Lo Bianco, 2000; McCardle, 2006; Thondhlana, 2000; Greenwood, 2005; Prochner, 2004; May, 2005			

Table 8. Reviewed studies by study type and early learning outcomes

<i>Evidence</i>	<i>Language and literacy in SAuE or other official language</i>	<i>Attendance & Participation</i>	<i>Cultural Identity / Self esteem</i>	<i>Socio-economic determinants</i>
Meta - analyses and Reviews	Mellor, 2004; Devlin, 1995; Hutchins, 2007; MCEETYA, 2001a; 2001c; Malin, 2003; Harris, 1995; Slavin, 2005; Ovando, 1985; Janus, 2003; Wilklig, 1985; Nixon, 2007; Elliott, 2006; Arnold, 2007; de Courcey, 2005; Reyner, 2003; US Department of Health, 2004; Greene, 1998; Aphthorp, 2003; Cummins, 1989; 2009;	MCEETYA, 2001a; 2001c; Malin, 2003; Janus, 2003;	Malin, 2003; Siraj-Blatchford, 2000; Ovando, 1985;	Hutchins, 2007; August, 2006; Arnold, 2007; Hakuta, 1989
Empirical studies	Purdie, 2000; Zubrick, 2004; Frigo, 2004; Molyneux, 2009; Freeman, 2008; DEET, 2004; Robinson, 2009; Malcolm, 2005; Lowell, 1998; Guglielmi, 2008; Thomas, 1997; Kieffer, 2008; Hakuta, 2003; Tagoilelagi-Leota, 2005; Barnett, 2007; Tong, 2008; Branum-Martin, 2006; Sparks, 2008; Wallace, 2007; Loudon, 2005; Bialystok, 2005; August, 2006; Moran, 2007a; 2007b; Demmert, 2001; McEwan, 2007; Rau, 2005; Marks, 2003; 2007; Francis, 1999; Ball, 2001; Lavoie, 2008; McCarty, 2003; Allen, 2007 Gale 1981; Murtagh 1982	Clancy, 2003; Parker, 2005; Wylie, 2006; Guglielmi, 2008;	Purdie, 2000; Boughton, 1999b; Disbray, 2008; FACS, 2002; FACSIA, 2006; Hallet, 2007; Health Canada, 2000; Lavoie, 2008; McCarty, 2003; Priest, 2008; Rinehart, 2006; Trujillo, 2003; Tuafuti, 2005;	FACS, 2002; McEwan, 2007; Marks, 2003; 2007; Moran, 2007; Hallet, 2007; Zubrick, 2004; Guglielmi, 2008; Kieffer, 2008; Wright, 2007
Case Studies	Batten, 1998; Fleer, 2002; Lee, 1993; Cahill, 2003; Slattery, 1993; Klump, 2005; Hill, 2002; UNESCO, 2008; Paciotto, 2004; Goto, 2004; Tharp, 1994;	Dockett, 2006; 2008;	Warrki Jarrinjaku 2002; Batten, 1998; Fasoli, 2007; Fleer, 2006; Shepherd, 2008; Tharp, 1994; Warrki Jarrinjaku, 2002; Simpson, 2000	
Reports	McRae, 2000; Hanlen, 2002; DETA, 2005; Clancy, 2002; Penman, 2006; NTDET, 2007; NTG, 2007; NTIEC, 2009; Schwab, 2004; AEU, 2007; Australian Government, 1988; CLC, ud; Kosonen, 2006; Thondhana, 2000; Assembly of Alaska Native Educators, 1999;	Clay, 2006; Schwab, 2006; Vinson, 2009; NTIEC, 2009; NTG, 2007; McRae, 2000; AEU, 2007;	Assembly of Alaska Native Educators, 1998; 2001; AEU, 2007; CLC, ud; McKinley, 2008; Penman, 2006; Wild, 2007; Robust, 2007;	White, 2009; McRae, 2004; Wild, 2007
Opinion and Comment	Howard, 2008; Malin, 1998; Cleary, 2005; Djayhurrnga, 2003; Nicholls, 2005; Devlin, 2009; Buckskin, 2001; May, 2005;	Adams, 1998; Howard, 2007	Greenwood, 2005; May, 2005; Nicholls, 2005; Simposn, 2009; UN General Assembly, 2007	

Table 9. Reviewed studies by evidence type and implementation context

<i>Evidence</i>	<i>English as a Foreign Language</i>	<i>Minority populations including poverty and disadvantage</i>	<i>Remote and Very Remote</i>	<i>Oral based L1 & Print poor environments</i>
Meta analyses and Reviews	deCoursey, 2005; Devlin, 1995; 2009; Ovando, 1985; Reyner, 2003; Slavin, 2005; Thomas, 1997;	Apthorp, 2002; Arnold, 2007; Allen, 2007; August, 2006; AEU, 2007a; 2007b; Boughton, 1999b; Cummins, 1989; 2009; Greene, 1998; Hutchins, 2007; Malin, 2003; Nixon, 2007; US Department of Health, 2004; Willig, 1985	Harris, 1995;	
Empirical studies	Ball, 2001; Lowell, 1998; Malcolm, 2005; Moran, 2007a; 2007b; Mellor, 2004; Parker, 2005; Tagoilelagi-Leota, 2005; Tharp 1994; Wallace, 2007; Tong, 2008; Murtagh 1982; Gale 1981	Branum-Martin, 2006; Clancy, 2002;2003; Clay, 2006; Demmert, 2001; Disbray, 2008; Francis, 1999; Freeman, 2008; Frigo, 2002; 2004; Guglielmi, 2008; Health Canada, 2000; Kieffer, 2008; Malcolm, 2005; Marks, 2003; 2007; McCarty, 2003; McEwan, 2007; Molyneux, 2009; Priest, 2008; Sparks, 2008; Trujillo, 2003; Tuafuti, 2005; Zubrick, 2004	DEET, 2004; FACS, 2002; Hallet, 2007	Parker, 2005
Case Studies	Cahill, 2003; Fleer, 2002; Klump, 2005; Lavioe 2008; Malcolm 2005; McCarty 2003; McRae 2000;	Batten, 1998; Lee, 1993; Dockett, 2006; 2008; FACSIA, 2006; Fleer, 2006; Hill, 2002; Simpson, 2000; Tharp, 1994; UNESCO, 2008;	Fasoli, 2007; Shepherd, 2008; Slattery, 1993; Warrki Jarrinjaku, 2002;	
Reports	AANE, 2001; DETA, 2005; McRae, 2004; Schwab, 2004;	Australian Government, 1988; AANE, 1998;1999;2001; Goto, 2004; Hanlen, 2002; Kosonen, 2006; McKinley, 2008; NTDET, 2007; Robust, 2000; Vinson, 2009; Wild, 2007;		McRae, 2004
Opinion and Commentary	Cleary, 2005; Howard, 2007; NAEYC, 2005;	Buckskin, 2001; Greenwood, 2005; LoBianco, 2000; Malin, 1998; May, 2005; Simpson, 2009; Thondhlana, 2000; United Nations General Assembly, 2007;	Nicholls, 2005; NTG, 2007; NTIEC, 2009;	McCardle, 2006

Table 10. Reviewed studies by instructional approach

<i>Instructional Approach</i>	<i>Source of evidence</i>
<p>50:50 Culturally responsive or Strong bilingual</p> <p>(Plus Language/ revitalisation)</p>	<p>Frigo 2004; DEET 2004; Fasoli 2007; Lowell 1998; MCEETYA 2001c; Simpson 2000; Warrki Jarrinjaku ACRS Project Team 2002; Dockett 2006 and 2008;</p> <p>Purdie 2000; Hill2006; Thomas1997; Apthorp 2002; Marks 2007; Trujillo 2003; Klump2005; McEwan2007; Tuafuti2005; Ball2001; Assembly of Alaskan Natives 1998 and 1999; Slavin2005;</p> <p>Barnett et al 2007; Hakuta 1998; Kieffer 2008; Hakuta1989; Nixon 2007; Rau 2005; McCarty 2003; Rindhart 2006; Reyhner 2003</p>
<p>50:50 Bilingual</p>	<p>Allen 2007; Laboie 2008; Wright 2007 Parker2005; Guglielmi 2008; Bailystok 2005; Collier 2004; Francis 1999; August 2006; Ovando1985; Wallace 2007; Clark 1998; Murtagh 1982</p>
<p>Transitional bilingual or Staircase bilingual</p>	<p>Devlin 1995; de Courcey, M 2005; NTDET 2007; NSW Government 2004; Devlin 2009; UNESCO 2008; Tomg 2008; Greene1998; Branum-Martin2006 Gale 1981</p>
<p>English as a second language (ESL) or Structured immersion</p>	<p>Schwab 2004; Batten 1998; Mellor 2004; Slattery 1993; Robinson 2009; McRae 2000 McCarty 2008 Sparks 2008; Wright 2000; Kosonen 2006</p>

3. RESULTS

a) Terminology and description of instructional approaches

This systematic review of the Australian and international literature on early years English language acquisition and instructional approaches for Indigenous students with home languages other than English found considerable confusion and inconsistency in the terminology used to describe the various language contexts and educational approaches investigated. To enable sensible judgements to be made about the comparability of the different instructional approaches described we listed the range of definitions provided in reviewed studies and examined the relationships between them. This included studies where the intended meaning of the instructional approach was not explicitly described but could be inferred with confidence from the context and detail available. Even allowing for this level of flexibility, we were only able to locate 30 of the more than 200 papers reviewed which had sufficient detail about the program or instructional approach for the program to be reliably replicated.

Even seemingly clear terminology can be ambiguous. For example in the literature on second language acquisition (SLA) the terms "acquisition" and "learning" are generally used synonymously. However, a distinction is sometimes made where the term "learning" is specifically intended to refer to the more conscious and direct aspects of second language learning, and where "acquisition" is used in referring to the less direct or more subconscious aspects of this process. The term 'dominant language' is used both for the language of the dominant culture and for an individual's first language (Wright et al, 2000). However, the literature is consistent in the use of the term "second language" (L2) to refer to any language learned after the "native", "first language", or "mother tongue" (L1).

We collected a total of eight distinct definitions for 'bilingual education'. This apparently fundamental concept can mean any of the following in the literature:

- Where instruction occurs in two languages (de Coursey, 2005).
- Where oracy and literacy are taught in both languages (Nicholls, 2005). This is also called bilingual 'biliteracy' by some (Simpson et al, 2009).
- Where students are required to learn in both languages for approximately equal amounts of time (Molyneux, 2009). This is called 'Bilingual 50/50' by some such as FaCS (2002) and 'Bilingual developmental' by others (Thomas and Collier, 1997).
- Where instruction commences in L1 and L2 with increasing L2 over time (Guglielmi, 2008; Lavoie, 2008). This is also termed 'Transitional bilingual' (de Coursey, 2005) or 'Staircase bilingual' (FaCS, 2002).

Of particular note is the fact that term ‘Two-Way’ is used with quite distinctly different meanings in the Australian and international literature. The earliest Australian use of the term that we were able to locate was by McConvell (1982). Harris (1990) adopted the term and it has subsequently been widely used, including the adoption of ‘Two-Way Schooling’ by the NT Department of Education and Training in referring to the transfer of culture and knowledge both ways between the community and school. However, even in the Australian context the term ‘Two-Way’ has been used to mean any of the following:

- Education in and about both languages and cultures (Penman, 2006).
- A two-way exchange of culture, language and learning as well as community involvement in teaching and decision making (McKay, 1999; and Batten et al, 1998).
- Two-way schooling which is not necessarily bilingual but which acknowledges the cultures of home and school, recognises the importance of Indigenous languages and encourages traditional learning with community members (FaCS, 2002; DET WA 1998).
- Where instruction commences in L1 and L2 with increasing L2 over time (Simpson et al, 2009) which is equivalent to the term ‘Bilingual Transitional’ (Hakuta, 1998).

In contrast with the Australian use of ‘Two-way’, the defining feature of the ‘Two-Way Bilingual’ programs described in the North American literature is that both of the languages used in the classroom are first languages (L1) for at least a portion of the class. Typically the number of students with each L1 and the amount of time spent using each language are roughly equal. Thus ‘Two-way bilingual’ in Thomas and Collier (1997), Hakuta (1998) or Slavin and Cheung (2006) is a synonym for ‘Two-way immersion’ in Barnett et al (2007) and ‘Two-way dual language’ in Collier and Thomas (2004). These appear to be the only contexts where the term ‘Two-way’ has been used outside Australia.

The term ‘Both-ways’ has been used for some time in the Australian context as a synonym for ‘Two-way’ (Harris, 1990). A web search revealed no contradictory meaning and we therefore recommend that the term ‘Both-Ways Schooling’ be adopted as DET’s preferred terminology for ‘2-way exchange of culture, language and learning as well as community involvement in teaching and decision making’ (McKay, 1999; Batten et al 1998). This is consistent with Batchelor Institute of Indigenous Tertiary Education’s usage.

A similar but less critical issue arises with the acronym SAE. In this country it is widely used in referring to ‘Standard Australian English’ while in the US literature it denotes

‘Standard American English’. This ambiguity is unlikely to seriously mislead the reader since in both contexts it denotes the English of the local dominant culture.

In summary, it is clear that care is needed in evaluating the evidence from the available literature in this field given the differing and ambiguous use of terminology in Australian and other international studies. It is therefore suggested that DET adopt a standard terminology for the key concepts and approaches in multilingual teaching and that their meaning be defined and used consistently in published departmental materials.

The summary definitions of key concepts and terms referred to in this review are listed in the glossary (p iii).

b) Quality and limitations of the reviewed literature

The available literature on early years English language acquisition and instructional approaches for Indigenous students with home languages other than English was divided into two main areas for analysis. The first area comprised research studies of the evidence for the effectiveness and efficacy of instructional methodologies and programs for early years English acquisition. The second area comprised studies which identified specific features of programs and instructional approaches which facilitated successful program outcomes in terms of English language acquisition, academic success and other outcomes of school learning.

A limited number (n=48) of the international studies of early English acquisition and instructional approaches for Indigenous children from non-English speaking backgrounds were appropriate for inclusion in this review given: i) their level-of-evidence rating, and; ii) whether they involved comparable Indigenous populations, comparable remote educational service delivery settings, minority language groups, or had socio-demographic contexts similar to the remote Australian Indigenous context.

The available literature was also found to have significant limitations due to: i) a lack of clearly defined or consistent terminology, and: ii) the paucity of studies reporting good empirical data or providing adequately detailed descriptions of the instructional approaches or programs involved. There are very few comparative or well-controlled studies with study designs and statistical analysis enabling appropriate adjustment for sampling bias or other confounding factors.

A recent critique of several large international meta-analyses, including both pro- and anti-bilingual approaches observed that it is virtually impossible to rigorously control program variables given the settings where the research needs to be conducted (Cummins, 2009). Cummins concluded that for research to reliably instruct policy and theory in the complex field of education, the research paradigm needs to ask: “what does the data and associated theory show?”

Both advocates and opponents of bilingual education agree on the universally poor quality of the available research evidence. There are many misleading comparisons of language group-distinct methodologies or programs delivered in significantly differing contexts, and instances where program comparisons are reported without the same measures of outcomes having been used (Rolstad et al, 2005; Hu, 2008). Further, the extent to which non-SAuE speaking backgrounds impact Australian Indigenous students' outcomes has been ignored in most of the Australian literature in this area (Mellor and Corrigan, 2004).

In the Australian Indigenous context, the bulk of the reported evidence comes from descriptive or quasi-experimental studies, case studies and reviews. There are 24 studies involving particular methodologies or specific approaches for SAuE language acquisition within the Australian Indigenous context. Of these only 15 included direct outcome measures of the efficacy for identified instructional approaches, including three studies reporting to DET system-level data in the Northern Territory context. However, in only three of these (Devlin, 1995; Gale et al, 1981; Murtagh, 1982) was the description of the study methodology considered sufficient for it to be rated for evidence of efficacy by the SPR Standards for Evidence (SPR, 2009).

For the purpose of discussion in this review the studies were grouped by their reported methodology into the following broad instructional approaches: i) Bilingual, ii) Immersion, and iii) English as a Second Language (ESL). The degree to which these approaches are designed to be culturally responsive is another important distinction relevant to their implementation and evaluation of outcomes. The distribution of the reviewed studies meeting the SPR standards of evidence is listed above in summary table 7.

c) English language acquisition approaches in the Australian Indigenous context.

In considering the effectiveness of different language acquisition approaches in the Australian Indigenous context of English as a foreign or additional language, no definitive conclusions are able to be drawn given the limited sample sizes of the available studies and/or their lack of internal or external reliability. Most of the available reports have evaluation design limitations which render comparisons of the outcomes of Northern Territory bilingual and non-bilingual programs inconclusive. These include poorly selected comparison groups and/or a lack of rigorous statistical analysis resulting in studies reporting weakly supported findings (Devlin, 1995).

Nevertheless studies by the NT Department of Employment, Education and Training (DEET, 2004) and academic researchers (Batten et al, 1998; Devlin, 1995; Lee, 1993; McKay, 1997; Gale et al 1981; Murtagh 1982) offer limited but consistent evidence that some NT bilingual education programs have been comparatively effective in improving student academic results.

More recently, the model of bilingual education adopted in the Northern Territory has been termed ‘Two-way’ (DEET, 2004) but there does not appear to be any published official definition of this approach. This raises questions about what is encompassed within the ‘Two-way’ instructional programs delivered in schools and their consistency of delivery across schools. Schools delivering the ‘Two-way’ model of bilingual education have nevertheless been compared with similar schools using outcomes in standardised English reading tests for 3000 students over four years. The Northern Territory Department of Employment, Education and Training (2004) reported that the children in NT bilingual programs had better reading scores in years 5 and 7 and better school retention. There have also been more recent unpublished reports based on analysis of the 2009 NAPLAN data from the ‘My School’ website confirming these patterns (Devlin, 2010a; 2010b). Other Australian studies of the outcomes of bilingual education reported findings consistent with the international literature on opportunities for bilingual learning appearing to contribute to the development of children’s meta-linguistic strategies, especially in the early years (Francis, 1999; Frigo et al, 2004; Gale et al. 1981; Murtagh, 1982). Murtagh also found that children taught in both Kriol and English,, where the languages were clearly differentiated, were better able to separate the languages and had a more positive attitude to speakers of both Kriol and SAuE when compared to Kriol speaking children in an English immersion program.

The available Australian studies of Immersion and ESL approaches provide no rigorous statistical analysis with the exception of the National Accelerated Literacy Program (NALP) (Robinson et al, 2010). However, being a reading remediation program for older students, this research is outside the scope of early childhood language acquisition. The FELIKS (Schwab and Sutherland, 2004), First Steps (Batten et al, 1998) and ILSS (Northern Territory Department of Education and Training, 2007) programs all employ ESL methodologies. No statistically sound evidence was cited to support claims for their effectiveness.

d) English language acquisition approaches with other Indigenous populations

There is evidence in the international literature regarding English language acquisition approaches with other Indigenous populations having contextual factors such as minority population and language status, remoteness, limited exposure to the majority language and socio-economic disadvantage which are similar to the NT remote Indigenous educational context. Twenty two (22) eligible studies were evaluated for particular approaches to instruction. These ranged in methodology from reviews to quasi-experiment trials and case studies. Sixteen (16) of these studies were concerned with the effectiveness of instructional methodologies including a) Transitional; b) 50:50 Bilingual; c) Immersion (L2 or L1 maintenance), and d) ESL programs. Six of these studies were rated as having high levels of evidence with regard to their reported efficacy.

One of the earliest systematic reviews used a “voting” system to conclude that on balance the literature did not show significantly improved outcomes with bilingual education (Rossell and Baker, 1996). Using the same selection of studies, a subsequent meta-analysis reported that bilingual programs produced significant improvement on English tests with a mean effect size equivalent to an extra three months of schooling over a two year period (Greene, 1998).

Other studies have reported effects of ‘subtractive bilingualism’ resulting from some bilingual instructional approaches. An example is Wright’s study of 140 Indigenous (Inuit) children entering school which used an observational (cohort) study design with a 4 year follow up. They found that exclusive English/French instruction had a negative effect on their L1 language skills development, particularly academic skills. Inuit children in English only programs did better than those taught in French; they ascribe this to their greater exposure to English outside of the school. (Wright et al, 2000).

Allen’s (2007) meta-analytic review of several Canadian studies was rated as having a high level of evidence. This found that monolingual Inuktitut and Inuktitut–English bilingual preschoolers were both very strong in L1 in their first four years of schooling. Some studies reported in this review found that increased exposure to English (or French in some communities) through media, wider community interactions and schooling impacted negatively on their conversational and academic use of L1. However, where both languages are well supported in and outside the home, ‘stable bilingualism’ has resulted within larger communities and some smaller communities (Allen, 2007).

Apthorp et al’s (2002) systematic review of studies across a range of Indigenous contexts and was rated as having a high standard of evidence. It analysed the systematic linking of classroom practice with academic learning. The outcomes from two main types of school based intervention assessed were: i) literacy in L1 and then bilingualism, and ii) cultural congruence but not necessarily bilingualism. Positive associations were found between student achievement and particular program characteristics or practices (Apthorp et al, 2002). This is discussed further in section 4b of this review.

e) English language acquisition approaches with non-Indigenous populations

The earliest reported meta-analysis of bilingual approaches with non-Indigenous populations included in this review highlighted the difficulties in attempting to find any convergence of evidence from studies that are very different in design, have differing statistical treatments for establishing effect sizes, employ different assessment tools and report different and often unmeasured outcomes (Willig, 1985). This meta-analysis concluded that studies using appropriate statistical controls reported small to moderate positive effects of bilingual education on standardised tests of reading, language skills, mathematics, and total achievement when administered in English. When tested in L1, positive results were also found in reading, language, mathematics, writing, social

studies, listening comprehension and attitudes toward school and self. The critical factors identified as limiting these effects included the effects of language dominance and environmental language exposure. Such factors are particularly relevant to NT remote Indigenous students and there is a continuing need for these factors to be addressed in future syntheses (ibid).

Twelve of the studies reported in Apthorp et al's systematic review investigated the effectiveness of various approaches to second language (L2) instruction in non-Indigenous populations (Apthorp et al, 2002). Stronger evidence standards were generally found in this body of literature compared to the Indigenous-specific literature. However significant caution is needed in generalising the applicability of these findings to the learning of English in the remote Australian Indigenous educational setting. Although subject to some methodological limitations, four meta-analyses, two reviews and 10 quasi-experimental studies and 17 non-Indigenous studies with medium to high standards of evidence reported findings on instructional effectiveness. The three main instructional approaches described in this context were i) Transitional or 50/50 bilingual; ii) Immersion (L2 or L1 maintenance) and iii) Culturally responsive English as a Second Language (ESL) programs. Ten of the studies reviewed by Apthorp et al also included descriptions of key instructional and school-community contextual features facilitating L2 language acquisition in contexts relevant to the Australian Indigenous context (ibid).

Rolstad et al's 2005 meta-analysis of program effectiveness research with non-Indigenous English language learners (ELL) included 17 studies conducted since Willig's 1985 meta-analysis and used the strategy of including as many studies as possible. They concluded that bilingual education is consistently superior to all-English approaches, and that 50/50 bilingual education programs are superior to transitional bilingual education programs. The meta-analysis reported a modest positive mean effect size (0.23 standard deviations) for bilingual education with non-Indigenous English language learners. However, this approach also produced a large effect (0.86 standard deviations) for outcome measures in the native language (L1). The meta-analysis concluded that bilingual education programs are effective in promoting academic achievement, and that sound educational policy should permit and encourage the development and implementation of bilingual education programs (Rolstad et al, 2005).

A major longitudinal study by Ramirez (1991) compared the relative effectiveness of Structured Immersion, and late and early exit bilingual programs. One measure they studied was the age of reclassification from limited English proficiency (LEP) to full English proficiency as a key measure of English language acquisition (Ramirez, 1991). They found that 72% of early exit, 66% of immersion and 50% of late exit students had been reclassified by the end of year 3. This figure is 80% for late exit students by the end of year 6. Students were also assessed using standardised English language tests. While detailed comparisons of Immersion and early exit approaches showed comparable results

at the end of year 3, at the end of year 1 the Immersion students had better oral language skills while early exit students were better readers. Comparison of these models with late-exit is limited, because none of the study schools provided a mix of all models. At the end of year 6, Late exit students fared best when there was still a high level of both languages being used, and fared poorly when abruptly transitioned to English only instruction. Comparisons between the 3 programs were also made by evaluating their outcomes relative to “normative populations”. Late exit was the only program that showed continued convergence with the population norm beyond year 3. Ramirez et al concluded that "As their growth in these skills is atypical of disadvantaged youth, it provides support for the efficacy of primary language development in facilitating the acquisition of English language skills." The other programs tended to show a plateau effect from about Y3, when they ceased converging with the population norm (ibid).

Thomas and Collier (1997) and Collier and Thomas (2004) both used data on English reading, Spanish reading and other subject tests from a comprehensive longitudinal study that compared 6 program types across 23 US school districts. Their conclusions are based on varying (often small) samples of their total data set, which totalled some 2,000,000 student-years of data including students from 15 home language backgrounds across five school systems. The sample of children included those who entered school with no English, were raised bilingually from birth, and those with English as their first language and a diminishing heritage family language. Their 1997 study reported data from one of the school districts (n=150 students) to demonstrate that bilingual programs are significantly superior to English immersion for English language learners. Data from across 2 States was used to demonstrate that ESL was no more effective than Immersion programs, and that both of these approaches were found to be inferior to bilingual methodologies. Their 2002 comparison of English language learning methodologies used data on over 13,300 children. They found that bilingual schooling for four to seven years was sufficient to achieve academic success at the same level as native English speakers across all subjects (Thomas and Collier, 1997; Collier and Thomas, 2004).

August and Shanahan (2006) studied standardised reading comprehension scores and high school completion rates for a range of English L1 and LBOTE students. In both of these measures the LBOTE students fared significantly worse than their English L1 peers. However, bilingual teaching was found to facilitate English (L2) reading proficiency, with L1 literacy skills transferred to L2 (August and Shanahan, 2006). Barnett et al (2007) compared two-way immersion and English immersion in classes of mixed English and Spanish speaking preschool children in the USA. They found that two-way immersion improved the Spanish language development of both language groups without losses in English language learning (Barnett et al, 2007).

A substantial recent USA study of the reading growth of 17,000 children from various language backgrounds found that LBOTE children with proficiency in English on entry

to school had trajectories of education similar to those of native English speakers (Kieffer, 2008). The trajectories of language minority children with poor English on entry to school diverged from those of native English speakers and showed wide disparity by the 5th grade. Controlling for socio-economic status reduced this from large to moderate effect size. Similar findings with older children have been reported in the evaluation of the *Accelerated Literacy Program* in the NT where the quantitative and qualitative data support the view that such programs are only effective with students who have a sufficient threshold level of English oracy and literacy on program commencement (Robinson et al, 2009).

A recent systematic review of 17 studies which had compared reading results for children in bilingual and English immersion programs in schools where 90% of students were English learners found that student achievement and academic language proficiency in English need not be at the cost of supporting students' emergent bilingualism and biliteracy (Molyneux, 2009). Another meta-analytic review which set high standards for inclusion found there to be too few high quality studies to reach definitive conclusions, but suggested that, on balance, bilingual models appeared to provide better outcomes and that the effect was stronger where literacy instruction was at a different time of day for each language (Slavin et al, 2005).

A review of English immersion programs in China found that academic L1 development can be compromised despite L1 being the student's everyday language (Hu, 2008). A small-scale New Zealand study of Pasifika children's development of language and literacy skills as they made the transition from a 'mother tongue' preschool to an English medium primary school showed some interesting trends (Tagoilelagi-Leota et al, 2005). While L2 skills improved rapidly to close to mainstream within 1 year, these children's L1 oracy skills stagnated or declined. Studies such as these have been cited in support of the theory that a threshold L1 proficiency should be attained before L2 proficiency can be attained or the likely outcome is subtractive bilingualism. They are also cited in support of the view that "...the 'Bilingual Staircase' model has the best theoretical basis and empirical support" (De Courcey, 2005).

4. DISCUSSION

a) Efficacy and effectiveness of the main instructional approaches

It is widely asserted on the basis of pedagogical and developmental theory (Cummins, 2009) that literacy skills gained in L1 facilitate the acquisition of L2 literacy. Apthorp et al's review of the research on bilingual interventions and approaches concluded that there was strong evidence supporting the teaching of Indigenous language and literacy first followed by instruction in English reading and writing with ongoing support for bilingualism (Apthorp et al, 2003). A recent US study with a high evidence rating used confirmatory factor analysis to investigate the language outcomes of n=812 kindergarten children participating in a transitional bilingual classroom program (Branum-Martin et al, 2006). This showed strong evidence for the transferability of L1 (Spanish) phonological awareness to L2 (English). Another well-designed 10 year follow-up study of ESL students investigating L1 predictors of later L2 outcomes found that L1 word decoding, spelling and reading comprehension skills all transferred from L1 to L2 (Sparks, 2008). However the small sample size (n=54) limits the generalizability of the reported conclusions. Another meta-analytic review of the literature on literacy outcomes of second language learners also concluded that bilingual teaching facilitates L2 reading proficiency and that L1 literacy skills transfer to L2 (August, 2006).

Studies of the development of various types of language competence (e.g. contextualised and decontextualised) indicate that L1 and L2 learning can reinforce each other suggesting that bilingual child-rearing and early education can have additive as opposed to subtractive effects (Hakuta et al, 1989). While the home/school linguistic mismatch has often been used to explain poor school outcomes for Hispanic-American students this is contradicted by outcomes observed for Asian-American students – particularly where the languages have different writing systems. For example, a study of 204 children aged 5 and 6 years from a mix of English speaking, Chinese speaking or bilingual backgrounds who had 12 months' exposure to a bilingual instructional program found that phonological awareness transferred across languages for both bilinguals and 2nd language learners (Bialystok 2005). However, that study also showed no overall effect of bilingual instruction on learning to read. Reading performance was found to depend more on the structure of the particular language, proficiency in that language and instructional experience with its writing system. Similar findings have been reported from a 12 year longitudinal study in the USA with a high evidence rating. This followed n=1,800 eighth grade students with Spanish or an Asian language as a first language to establish the causal pathways from L1 proficiency to post high school accomplishments (Guglielmi et al, 2008). Their analysis found a transfer of reading competence for the Spanish subgroup but not for the Asian subgroup thus suggesting that such benefits are limited unless both languages share a common alphabet or writing system.

A recent study of Spanish speaking ELLs assigned to transitional bilingual or structured English immersion programs found students acquired English oracy at a similar rate and that ‘best-practice’ instruction in either model accelerated English oracy acquisition (Tong, 2008). The evidence from studies showing that students commencing school with poor L1 language proficiency also have poor trajectories of L2 development have lead some to conclude that there are benefits in teachers encouraging L1 use between children and with community members and also using L2 as the main language of classroom instruction (Welford, 2008).

b) Key factors facilitating successful learning outcomes

The following key factors that facilitate successful outcomes are drawn from the reviewed literature and have either some measurable standard of evidence rating or are recurrent themes in the findings.

Culturally responsive practice

Better student achievement is clearly associated with learning environments that are culturally safe, responsive and positive (Thomas and Collier, 1997; Apthorp et al, 2002; Cummins, 2009). School and system level ESL, EFL and bilingual programs require a supportive political environment with consistent policy and funding commitments that articulate a clear purpose for those programs. This may include social goals of community advocacy or engagement (Thomas and Collier 1997; Apthorp et al 2002; Reyhner 2003; Tagoilelagi-Leota 2005; Tuafuti and McCaffery, 2005; Allen 2007; McCarty 2008; UNESCO 2008; Cummins 2009).

School structures and operations identified as supporting early childhood literacy and numeracy achievements include: leadership that builds strong family and community partnerships; good teaching practice; attendance and school engagement strategies; and a strong Indigenous presence within the school. Although the socio-cultural aspects of different approaches to language learning are not well researched, there is evidence that the type and availability of L1 academic learning materials can effect the power relations within the school and students’ sense of identity (Cummins, 2009; Wright, 2007).

A longitudinal Indigenous early education study across twelve Australian schools investigated factors enabling effective school community partnerships for improving literacy and numeracy achievement (Frigo et al, 2004). Leading success factors included the school’s acknowledgement of cultural and linguistic diversity (e.g. as evident in teaching strategies which recognise and value home languages and non-SAuE dialects (Aboriginal English and Kriol); and the schools’ use of culturally responsive curricula. Classroom and school practices promoting students’ self-esteem, self-efficacy as learners and healthy cultural identity have also been shown to be important in the achievement of better educational outcomes for Australian Indigenous students (Purdie et al, 2000; Eades 1993). This is supported by teacher awareness of the importance and use of Aboriginal

English as a dialect by Indigenous students (DET WA, 1998); the use of bilingual education where appropriate with an early introduction of English in classroom activities; the availability Indigenous teachers and community members who support Indigenous language development and translation in the classroom; and explicit teaching of English literacy and numeracy competencies.

Dockett et al's (2008) study of Australian Indigenous children's transition to schooling identified that successful programs were more likely to i) actively involve children and families, ii) utilise a range of strategies for involving and engaging positively with families and communities, iii) focus on the development of positive, respectful relationships among all involved, iv) place a high priority on the development of children's skills - particularly in the areas of literacy and numeracy, v) engage children and families in meaningful, relevant and challenging curricula activities, vi) set high expectations, vii) promote a positive sense of Indigenous identity within the school and viii) promote the general wellbeing of children and families.

Much of the grey literature for the Australian context (MCEETYA 2001b; MCEETYA 2001c; MCEETYA 2005) reflects the widely understood importance of supporting key transition points and recognises the benefits of continuity in children's learning and care environments. The IEETY Taskforce (MCEETYA 2005) observes that Australian Indigenous children experience several distinct discontinuities in their early childhood years. Firstly there needs to be an understanding of how the life experiences of children and their developmental pathways across all domains impact learning. This applies in particular to the mental, social, physical, spiritual and emotional development of children living in remote and culturally distinct contexts (MCEETYA 2005). This implies that programs, services and staff need to recognise and support the fluid movement of children (and parents) between languages and cultures.

The Bernard van Leer Foundation's (2003) submission to the United Nations Committee on the Rights of the Child (UN General Assembly, 1989), drew substantially on two long term Indigenous studies in Guatemala and Mexico, to identify factors supporting program effectiveness in improving outcomes for children living in highly socio-economically disadvantaged societies. These include i) supporting Indigenous people to construct and deliver programs that reflect their own vision for children, ii) having culturally and linguistically responsive curricula, iii) using local Indigenous educators, iv) offering bilingual and mother tongue education programs, v) maximising parent and family involvement, vi) decentralised or local decision making and vii) adequate resourcing and political support for viability.

In the USA the national implementation of 'results driven policy' such as the '*No Child Left Behind*' policy has led to suggestions that this can have negative effects due to schools encouraging teachers to 'teach-to-test' at the expense of providing culturally

responsive education (McKinley and Brayboy, 2008). Similar concerns have also been expressed in Australia with regard to the way NAPLAN results may be used to inform Indigenous education policy and practice (Pearson, 2009).

L1 and Multilingual Instruction

Programs that are explicit about bilingual and biliteracy aspirations generally achieve better outcomes than English-only or early exit programs (Cummins, 2009; Ovando and Collier, 1998). In international studies the use of L1 and L2 at the community level is found to reach a balance determined by interlocutors and the situation rather than one language replacing another (Allen, 2007).

The opportunity to learn ‘at year level’ academic work in L1 benefits minority language children in their long term achievement as well as successful acquisition of a second language. Further, L1 cognitive and academic achievement is a predictor of L2 academic success (Thomas and Collier, 1997; Ramirez, 1991). Where L1 instruction is resourced, then instruction in L2 provides children with age and year level appropriate access to the full curriculum. Instruction in L2 through ESL strategies also requires a socio-culturally supportive environment (Thomas and Collier, 1997). Teaching L1 language and literacy first, followed by instruction for English reading and writing and promoting bilingualism improves student achievement (Apthorp et al, 2002).

McCarty (2003) reports on three longitudinal studies. One was of English L1 Navajo children which followed two groups. The first was a group who had acquired literacy in Navajo and then English through a transitional bilingual approach. Their outcomes were compared with a matched group in an English-only program. After four years the bilingual group were found to outperform students in English-only programmes on listening comprehension tests. After an initial decline in their reading scores, the bilingual students’ results improved to close to the national norm. This success was attributed to the program having competent bilingual Navajo staff with high aspirations for students and credibility in the community. Parent engagement in schooling activities increased and students developed positive identities as learners because of their heritage rather than despite it (Holm and Holm, 1995 cited in McCarty, 2003).

A study in Burkina Faso (where French, the official language, was not the mother tongue) found bilingual programs improved student and community participation and teachers’ relationships with their pupils. It included descriptive classroom observation and student examination data collected over several years. The aggregated findings for a large number of schools showed significantly better outcomes for bilingually educated students in the national French examinations compared to the French only schools (Lavoie, 2008).

Children who enter school with a wider vocabulary and familiarity in first language have generally better literacy development (Arnold et al, 2007). Where children do not share the same first language or have a different first language to the teacher (as is the case for

many of the Northern Territory's multilingual learners) the language of instruction can be more problematic (Arnold et al, 2007). In a Malawi study, children who share the same first language as the teacher, even if this is not the language of instruction, perform significantly better (Chilora, 2000; Chilora and Harris, 2001 cited in Arnold et al, 2007).

Presence and engagement of family and community

Dockett et al's (2006) extensive qualitative study on successful transitioning for Indigenous children to school found that Indigenous parents valued a visible Indigenous presence in school; flexibility in the engagement with and respect for families and communities; access to mainstream curricula with access to Indigenous languages and culture; teachers setting high expectations; inclusive practice to reduce children's sense of isolation; the school facilitating access to health services; promoting a positive view of school and children's strengths; attention being given to developing strong relationships between schools, students and families; the school valuing cultural safety and security; and teachers not denigrating Aboriginal English as "bad English" (Dockett et al, 2008).

Over one third of students in Frigo's Australian longitudinal study of Indigenous early education were identified as speaking an Indigenous language, Torres Strait Islander Kriol or Aboriginal English as their first language or main home language. Teacher responses to the use of these languages in the classroom were found to often convey disapproval in direct or indirect ways e.g. labelling Kriol or Aboriginal English as "wrong way". Such behaviours and attitudes can easily be internalised by students and contribute to negative racial and/or cultural identification and affect their attitude to and engagement with school (Frigo et al, 2004; Murtagh 1982).

Mellor and Corrigan (2004) suggests that a significant impediment to building effective school-community relationships is that most teachers have little interaction with their Indigenous communities. This review also found that children learn better when there is some consistency between the cultural environments and expectations of home and school. The use of enrolment and attendance as an indicator of successful school-community partnership is not widely reported in the literature, but has been considered in Northern Territory remote schools. However, attendance also reflects a range of other student, family and community factors – many of which are outside the immediate influence of schools. In the WA Aboriginal Child Health Survey for example, only four of the 15 student, family, community and school factors found by multivariable regression analysis to predict students having 26 days or more days of absence in a school year were school factors. The proportion of Indigenous parents who chose to send their children to particular schools because they know the staff are respectful of Indigenous people and culture has been suggested as another useful measure of parents' trust in the school (Frigo et al, 2004).

One of the main intentions of school devolution in the 1980's was for parents and caregivers to assume greater responsibility for decision making about school content and structures and to enable community needs and aspirations to be better met (MCEETYA, 2001c). Greater autonomy of school leadership and staff in deciding curriculum and pedagogical approaches on the basis of professional expertise has been associated with positive learning outcomes for students (Mellor and Corrigan, 2005). Greater local decision-making autonomy has also been cited as a key factor enabling trust and reciprocity between community and school staff and hence better student learning outcomes (Ovando and Collier, 1985; Mellor and Corrigan, 2004).

The general Australian early childhood education literature demonstrates a clear relationship between school philosophies and practices which are successful in engaging with parents and families and improved student academic outcomes (Shepherd and Walker, 2008; Frigo et al, 2004; Hutchins et al, 2008). These studies and other Indigenous studies suggest that the following factors are important in contributing to Indigenous parent/family inclusion and participation:

- School processes and activities which communicate the school's accessibility and desire to strengthen home-school links (e.g. parent/family days, involvement of family in special assemblies and so on,
- The availability of culturally welcoming places within or adjacent to the school where Indigenous parents, families or community members feel culturally 'safe' and can engage with and support their children's school learning,
- School leadership (i.e. principal or senior staff) working closely with Indigenous Teaching Assistants and Aboriginal and Islander Education Workers (AIEWs) to build relationships with Indigenous community members and parents (e.g. by visiting the homes of families and participating in community activities beyond those initiated by the school,
- Aboriginal Teaching Assistants and AIEWs being acknowledged as significant contributors to the leadership of school and school-community relationships,
- Principals and senior staff being approachable and willing to listen to the concerns of parents and families (e.g. having an 'open door' policy).

Instructional competence

The most comprehensive studies of Australian Indigenous children's English literacy acquisition (Batten et al, 1998; Frigo et al, 2004) identify strongly supportive school environments as those with quality teaching strategies, explicit literacy teaching strategies and appropriately used technology. Teaching that was found to be most effective in the Australian context includes explicit strategies such as:

- teaching the skills of functional literacy,
- immersion in practical experiences using oral language,
- one-on-one guided reading sessions,
- contextually relevant, meaningful and engaging activities and shared experiences;
- revision and repetition;
- shared big books including building vocabulary, sight words and conventions of print knowledge and sequencing and
- explicitly teaching the differences between home and school language use and providing the meta-language (Frigo et al, 2004; Murtagh 1982).

These teaching strategies are dependent on a thorough knowledge of teaching English in an ESL context where socio-cultural aspects of the school are not well understood by the students. Highly competent teachers of English need to be able to explicitly teach for the differences in children's L1 and English at the phonological, morphological, syntax, semantic and socio-cultural levels (Bidot, 1986; Pearson et al, 2009; DEST, 2005b). There is evidence from the Australian context that teachers with poor knowledge of English literacy and how to teach it to young learners are the least effective teachers (Louden et al, 2005). In particular there is a strong need for educators to make explicit their high expectations and support code-switching strategies which if done well are found to accelerate adoption of L2 structures (Frigo et al, 2004; Allen, 2007; Murtagh 1982).

Teacher quality is directly linked to student outcomes and yet much of the teacher training does not specifically address teaching Indigenous children (Mellor and Corrigan, 2004). Several studies highlight the potentially negative effects of the lack of specific cross cultural communication knowledge required in the NT remote Indigenous context. This is often compounded by students' ear health issues (Lowell and Devlin, 1998; Howard, 2007). Although the use of Indigenous teacher assistants is found to ameliorate some of the miscommunication and relationship issues this has limitations for instruction for learning English (Lowell and Devlin, 1998). Teachers' instructional responsiveness and the use of active learning approaches are supported by the more contemporary constructivist educational theories. Several studies have demonstrated co-operative, interactive and discovery learning approaches (also student centred pedagogies) are powerful predictors of long term student success (Wylie, 2001; Thomas and Collier, 1997; Apthorp et al, 2002; Elliott, 2006). Frequent monitoring of student progress and explicit and constructive feedback are found to improve student achievement in a review of Native American and Hawaiian studies (Apthorp et al, 2002).

There is evidence from Canadian programs developing the capacity of Indigenous and non-Indigenous educators within communities which is relevant to Northern Territory schools being culturally responsive. Most of the programs reviewed were underpinned by strong agendas for achieving economic development within Indigenous communities. The First Nations Partnership Program is a model initiative of Meadow Lake Tribal Council in northern Saskatchewan with Victoria University (Canada) which commenced in 1989. This program develops partnerships between individual tribal councils and the university to achieve a community-based, bicultural curriculum guided by a model called Generative Curriculum Model. Results from an evaluation of 7 similar partnerships in the first 10 years of the program yielded the following capacity-building outcomes (Ball and Pence, 2001):

- 77.3% of initial students completed a full two years to achieve a Diploma in Child and Youth Care, compared with a national completion rate of 40% and below among First Nations students in other postsecondary programs,
- 95% of program graduates (students completing one or more years) remained in their own communities,
- 65% of graduates introduced new programs for children, youth and families,
- 13% of graduates joined the staff of existing services,
- 11% of graduates continued on the education career ladder, working towards a university degree.

In particular, the administrators of programs tolerated uncertainty and shared control in their interpersonal engagements. Agreements about the purpose of partnerships and content were reached first by informal clarification and confirmation and then by formal agreements. Long term commitment, perseverance and responsiveness to community needs was required. (Ball and Pence, 2001).

Other work on successfully developing Indigenous educators emphasises the need to offer learning in a mixture of course work and 'internship' type employment within a school over time. The Reaching American Indian Special/Elementary Educators program offered 46 hours course work with an internship of at least 18 months (Lockard, 2000). Enrolling students as a cohort encouraged mutual support and cooperative learning. These factors were also combined with highly contextualized and relevant curriculum to achieve a high retention rate. The primary goal of Lakehead University's Native Teacher Education is to achieve graduates with capacity to develop and deliver high quality bilingual-bicultural programs in First Nations schools with multi- grade classes for students with a Native First Language, English Second Language and English Second Dialect (Lockard et al, 2000). The profile of the educators enrolled in the program required a strong mentoring system to achieve the over 70% completion rate.

Culturally responsive curriculum

The international literature identifies culturally responsive curriculum and materials in the early years as particularly important. Te Whariki is the New Zealand bicultural early childhood curriculum which has been compulsory since 1998. The curriculum reflects a holistic view of child development and is therefore key to preserving Maori culture (Hutchins et al, 2007). A holistic approach to Indigenous early childhood learning is advocated in the Queensland curriculum support document, *Foundations for Success*. This program applies to Aboriginal and Torres Strait Islander children in the year before Preparatory or Year 1 minus 2 years. It aims to “reinforce personal and cultural identities, connect with families and communities, and provide the foundations for children’s successful learning” (Welford, 2008).

Time-on-task and time to develop language competence

The “time-on-task” research demonstrates convincingly that more time on English instruction does not correlate with student outcomes (Cummins, 2009). The successful acquisition of English (or other majority languages) is not compromised by significant instructional time in L1 (Cummins, 2009; Hakuta, 1998). The literature consistently argues that between 4-6 years is required to reach proficiency and parity for English language learners with native speakers. This time is necessary to develop cognitive academic language proficiency and the ability to use a second language for context-reduced and intellectually challenging tasks including literacy (Cummins, 1986, 1989, 1996; Ramirez, 1991). Time and exposure to comprehensible L2 are necessary for second language learners to ‘close the gap’, particularly for activities that are intellectually challenging and socially significant (Cummins, 1981; Krashen, 1996; Thomas and Collier, 1997; Ramirez, 1991). Molyneux (2009) describes a clear pattern of low English proficiency test scores in early years which improve steadily to year-level targets around year 6 (Molyneux, 2009).

Australian studies and grey literature (NTDE, 1999; Purdie et al, 2000; Molyneux, 2009; Penman, 2006) and many international studies (May, 2005; Prochner, 2004; Paciotto, 2004; Health Canada, 2000) identify students’ and parents’ desire that students achieve competence in both languages and subsequently that bilingual programs are extended to higher grades. Ramirez (1991) identified late exit students (typically year 6) who experienced high levels of both L1 and L2 were the only students across a range of early and late exit models to have accelerated progress toward equivalent performance to native speakers (Ramirez, 1991). However, sudden or abrupt program changes to L2 only instruction has a subtractive effect both socially and academically (Wright and Bougie, 2007; Ramirez 1991; Allen, 2007).

Resourcing commensurate with need and community circumstances

August's (1997) systematic review of instructional approaches to support the literacy and language development of children from Indigenous and other minority language backgrounds concluded with the recommendation that greater emphasis be placed on "...finding a set of program components that works for the children in the community of interest, given the community's goals, demographics, and resources". The current equal opportunities litigation in Arizona described in the introduction to this review highlights the need for evidence-based practice and on-going monitoring of student learning and language outcomes to inform the way in which instructional approaches are implemented and resourced to achieve more equitable outcomes. The '*Bothways*' *Children's Services Project* is instructive in its analysis of how access to learning and language support in the Northern Territory is critically influenced by several factors: First, the human resources available are limited by the small size of many communities. Second, the distance from the nearest major service centre can severely limit the opportunities for in-service training, professional networking and access to fundamental health and social services. Third, inconsistent and short funding cycles have negative impacts on service continuity and accrual of expertise. Furthermore, in small communities and services, the time needed to access funding through submission processes is simply often unavailable. Fourth, in remote NT community contexts, the location, ownership and access to infrastructure is an ongoing issue that frequently limits the availability and community utilisation of services. Fifth, the opportunities for in-community training and pathways for Indigenous school staff to obtain further teaching qualifications are limited by the size and remoteness of communities. This presents significant challenges to the customisation of training delivery models to accommodate student or community preferences for on-site or in community delivery. Finally, community well-being, whilst complex to measure, also significantly affects the level of support which community members are able to provide to schools to enable functional and well utilised services (Fasoli et al, 2007).

c) Current understandings of second language acquisition

There is an extensive literature investigating and conceptualizing the theoretical and applied linguistic, psychological, social and neuro-biological processes by which children acquire a second language in addition to their "mother tongue" or native language(s). The majority of the research in this area has focused on English as the second language (L2) due it being the most common language of commerce and science, and the large numbers of people around the world now learning and teaching it.

Much of the early descriptive research in this area focused on identifying the unique linguistic characteristics of a second learned language (L2) and how this may or may not differ from first language learning (L1) and the extent to which the process of language acquisition differs for bilinguals and monolinguals. During the 1980s and 1990s research

investigated linguistic questions along with other aspects of children's cognitive development. Much of this research sought to resolve the long-standing debate as to whether bilingual child-rearing from an early age could have potentially damaging effects on children's longer-term educational outcomes.

More recently the advent of new neuro-imaging techniques such as functional magnetic resonance imaging (fMRI) has enabled real-time experimental studies of brain activity in the functional processing of linguistic and other cognitive tasks by bilingual and monolingual individuals. The general body of evidence which has emerged from the recent research on bilingual child-rearing indicates that from 18-24 months of age there may be some cognitive costs in terms of response time, lower oral proficiency and slow vocabulary development in one or both languages (Hulk and Miller, 2000; Dopke, 2000; Yip and Matthews, 2000). Where these limitations of early vocabulary development persist there can be some risk for compromised pre-literacy skill development and slower progress in reading. However, for the greater majority of bilingually reared children, these early disparities seem to disappear over the child's educational lifetime (Olier and Eilers, 2002).

There is growing evidence indicating that bilingual children demonstrate clear advantages on cognitive and conceptual processing tasks, controlled attention skills, and meta-linguistic awareness (Bailystok, 2005). The ability of bilinguals to think in more than one language suggests the possibility that bilingualism promotes mental flexibility and greater intellectual capacity reserves. This possibility is supported by new understandings of the processes of brain development in the early years and the way in which synaptic connections forming the brain's language processing circuitry become stabilised through repeated 'experience-based' stimulation. This suggests that the more practice children have with disparate and varied experiences, the faster they will learn alternate ways of information and language processing. This is consistent with bilingual children and adults being generally better at learning additional languages than monolinguals.

The outcomes of a national workshop convened jointly by the US National Institutes of Child Health and Human Development and the US Department of Education regarding the current status and future directions of research on childhood bilingualism and second language acquisition provides a comprehensive synthesis and overview of the available evidence (Bailystok, 2008). A key feature of the workshop conclusions was '.... the surprising degree of consensus in the empirical evidence regarding the following issues:

- Bilingual children appear to acquire two language systems from virtually the beginning of the preverbal stage.
- Bilingual language acquisition is like that of a monolingual for the most part. At the same time, it is also evident that there is cross-linguistic transfer of morpho-syntax, albeit restricted in scope and duration.

- Bilingual and monolingual children exhibit similarities in terms of language discrimination and word segmentation, but bilinguals may encounter more delays in speech perception.
- The use of code mixing distinguishes bilingual children from monolingual children and is thought to be salient to an understanding of the formal and functional properties of language acquisition. It also supports the idea that bilinguals adopt two language systems and have the capacity to acquire and access two grammatical systems simultaneously.
- When age is controlled, children who are faster and more accurate in speech processing also have greater vocabularies.” (Bailystok et al, 2005)

The current and emerging research on second language acquisition in early childhood is now focusing on issues such as cross-linguistic fluency, cognitive processing, vocabulary development, the effects of age on proficiency, competence and performance. There is an increasing number of studies using neuroimaging technologies in experimental studies of language and other cognitive functioning. Descriptive research involving case studies as well as controlled studies involving larger sample sizes are needed to better understand the role of the environment and culture in language and literacy development, and how identity, classroom and home environments promote success in second language acquisition and school learning. Finally, there remains a continuing need for the development of validated measures of language development in multilingual contexts to enable early identification and intervention for language delays and/or disorders among children from non-dominant language backgrounds.

d) Evidence-based accountability through performance monitoring

The Productivity Commission’s 2009 report ‘*Strengthening Evidence-based Policy in the Australian Federation*’ stresses the importance of evidence-based accountability in all aspects of contemporary public policy:

“Evidence-based policy requires more than good policy formulation, methodologies and data. It requires institutional frameworks that encourage, disseminate and defend good evaluation, and that make the most of opportunities to learn. Where evidence is incomplete or weak, good processes for learning, and for progressively improving policies, become even more important. Some of the institutional features that can assist include:

- Improving transparency
- Building in and financing evaluation from policy commencement
- Using sequential roll-out, pilots and randomised trials where appropriate
- Establishing channels to disseminate evaluations and share results across jurisdictions
- Strengthening links between evidence and the decision making process.”

(Productivity Commission, 2009).

Whilst the appropriateness and relevance of narrowly defined evidence-based practice in the field of educational research is challenged by some in the literature (Biesta, 2007), current evaluation practice takes a broader approach in seeking to address the political and social complexity of research informing educational policy and program implementation. This is particularly relevant to the challenges presented in developing appropriate and effective methodologies for monitoring performance outcomes in Indigenous education and English language acquisition in the context of socio-economic reforms such as the NT Government's Transforming Indigenous Education initiative or the Council of Australian Government's, *Closing the Gap* reform agenda.

Stern (2004) has described how approaches to organisational and practice evaluation may be categorised with reference to two conceptual dimensions: a) the methodological approach used; and b) the specific evaluation purpose(s). Table 11 below summarises how, depending on the evaluation purpose the relevant methodologies could include: a) *criteria or standards-based* evaluation, which is concerned with judging the success and performance against defined standards; b) *causal inference* evaluation, which seeks to explain how program impacts and success are best achieved; and c) *formative or change-oriented* evaluation, which seeks to bring about improvements both for programs and for those who participate in them.

Table 11: Evaluation methodology and purpose informing evidence based practice

Purposes	Methodology		
	<i>Criteria and standard-based evaluations</i>	<i>Causal inference evaluation</i>	<i>Formative change orientated evaluation</i>
Accountability	Outcome and impact valuations.		
Development	Mainly summative	What 'works'	
Knowledge production		Improving future policy & practice	
Social Improvement			Formative evaluation of programs Empowerment and participative evaluation

(Adapted from Stern, 2004)

Building DET's evidence-base to meet performance accountability requirements as well to inform system- and community-level improvements in policy and practice will require a pro-active organisational approach to assessing and monitoring progress along each of

these dimensions. The selection and further development of instructional programs and policy in Indigenous education and English language acquisition should be informed by on-going process evaluation against well defined objectives and a limited number of case-studies using in-depth, formative methods investigating “how” and “why” practice and policy are or are not working in particular situations and how they might be improved. Finally, for the evidence-base to be truly comprehensive and accountable, it should also include the capacity for regular monitoring and reporting of the community views and aspirations along with school/community level information on student’s academic and language development outcomes.

5. SUMMARY AND CONCLUSIONS

This review identified the following conclusions of relevance to educational policy and practice in the Northern Territory for furthering school effectiveness and to improve the language, educational and social outcomes of Indigenous students whose first language is not SAuE.

a) Limitations of the available literature

The extensive literature on the topic is unfortunately replete with inconsistent terminology, poorly specified methodologies and incomplete descriptions of the language contexts and educational approaches investigated. This presents major challenges in evaluating the comparability of the different instructional approaches reviewed. Both advocates and opponents of bilingual education agree on the generally poor quality of the available research evidence. This is exacerbated by the wide range of instructional methods available and students' varied linguistic and cultural circumstances. Of the 120 studies reviewed only 30 provided sufficiently detailed descriptions of their respective programs or instructional approaches to enable adequate replication. Similarly, while the term 'bilingual education' is used loosely in much of the literature to refer to what is assumed to be a common approach, this review identified no less than eight distinct definitions and meanings of the term. Given the differing and ambiguous use of terminology in Australian and other international studies, it is recommended that DET adopt a 'standard' set of definitions of instructional approaches and concepts which are applicable in bi- and multi-lingual learning contexts and that the use of these terms is promoted through their consistent use in official Departmental publications.

b) Importance of culturally responsive schooling

A consistent feature of the Indigenous literacy and English learning support programs reporting successful outcomes was the fact that they were delivered in a culturally supportive manner and were designed to integrate with the child's entire environment of up-bringing i.e. their involvement with and perceived relevance to family, school and community. Most Australian state and territory education systems have endorsed the Indigenous Education Strategic Initiative Program (IESIP) guidelines for cultural responsive schooling and the need for educators to cater for the breadth of language diversity in the Australian Indigenous population. The IESIP guidelines recognise that successful early learning is reliant on a strong relationship between school and community and highlight the benefits of schools and educators valuing Indigenous home languages and culture whilst creating learning environments which support children in developing proficiency in Standard Australian English (SAuE) as a second or additional language.

At the same time there is wide variability between state and territory education systems and between schools in the proportion of children commencing school whose home

language is a traditional Indigenous language or dialect, a regional Kriol or Aboriginal English. It is therefore not surprising that jurisdictional education systems vary in what they require of schools in making provision for the specific language and learning support needs of their Indigenous students. These considerations highlight the need for differentiation in policy, staffing and resourcing to enable schools to provide language, literacy and learning support which is commensurate with student needs and community preferences.

c) Benefits of early language and cognitive stimulation

There is clear evidence that Indigenous children with some proficiency in English on entry to school have generally better educational outcomes than those with little or no knowledge of English. Similarly, children who commence school with a wider vocabulary and proficiency in their first language have generally better literacy development than students with less well developed early language skills. This, together with the current understandings of how early brain development is influenced by the kinds of stimulation which children experience in their environments of child-rearing, highlights the importance of promoting early language and cognitive stimulation for all children from birth, through infancy and through their pre- and primary school years.

d) Recent understandings of dual-language learning

There is a growing body of high-quality evidence from multi-lingual population studies showing that the optimum time for children to commence second language learning is the same time they begin learning their first language. Current neuro-linguistic and experimentally based cognitive studies suggest that children reared bilingually acquire two language systems from virtually the beginning of the preverbal stage. The processes of bilingual language acquisition are more similar to monolinguals than previously understood. While children reared bilingually do show some initial cross-linguistic transfer of morpho-syntax this is usually limited in its scope and duration. Thus while bilingually reared children experience some initial minor delays in speech perception, these are usually rapidly outgrown. Where these early delays persist this may complicate subsequent language and literacy development.

The commonly held belief that children will become confused if they are exposed to more than one language in their initial years of schooling is now challenged by accumulating evidence from a range of recent studies demonstrating that exposure to two languages from early in childhood has cognitive, social and educational benefits. Recent longitudinal and experimental linguistic studies show that bilingual and monolingual children have similar language discrimination ability and capacity for word segmentation in both languages. The emerging research consensus is that children reared bilingually from an early age adopt two language systems and have the capacity to acquire and access two grammatical systems simultaneously. This suggests that there are distinct

cognitive, language and educational benefits for children to commence second language learning earlier rather than later in their schooling.

e) Efficacy and effectiveness of specific instructional approaches

While the North American research has given much attention to the role which various forms of *bilingual instruction* have had on children's educational and developmental outcomes, relatively little attention has been directed to addressing the role which cultural and socio-economic disadvantage factors play in accounting for these outcomes. However, there are a limited number of Australian and international studies with good levels of evidence which have taken such confounding factors into account. These studies consistently suggest that when bilingual and/or culturally appropriate instructional approaches are delivered under optimal conditions they are *efficacious* in producing statistically significant and educationally meaningful improvements in school retention, attendance and learning outcomes of Indigenous children from traditional language home backgrounds. There are also several US studies with good evidence ratings showing comparable benefits for various forms of *English as a Second Language (ESL)* instruction and *Structured English Immersion*. In these approaches nearly all classroom instruction is in English but the curriculum and its presentation is modified for children who are learning the language. These programs are also usually provided with in-classroom support from first language speaking assistants – particularly in the initial years of schooling.

The high-level evidence demonstrating the efficacy of *bilingual instruction* and *ESL approaches* with Indigenous language speaking children is mostly derived from a small number of high-profile demonstration programs. Only a handful of these have involved Indigenous populations with similar levels of socio-economic disadvantage and/or geographic remoteness to those of remote Indigenous NT communities. These programs are typically well resourced, have strong community support, and are delivered by fully bilingual educators under optimal teaching and learning conditions. It is important therefore to also consider the evidence regarding the *effectiveness* and *sustainability* of these instructional approaches i.e. when they are delivered on a longer-term basis, on a wider scale and under real-world conditions, particularly in very geographically remote and disadvantaged settings. Unfortunately, in both the Australian and non-Australian Indigenous contexts, there is currently little, if any, research evidence to inform the relative *effectiveness* and *sustainability* of these instructional approaches.

f) Factors supporting successful language and learning outcomes

Effective school leadership

School leadership which facilitates improved student outcomes include i) an emphasis on building strong family and community partnerships, ii) ensuring there is visible Indigenous presence within the school which is acknowledged and valued, iii) setting

high expectations for students and staff, iv) supporting good teaching practice, v) developing learning environments that are culturally safe, responsive and positive and vi) having clear attendance and engagement strategies.

Effective instruction

Effective instruction for children from traditional and other Indigenous language backgrounds has some similarities to effective instruction for other populations who are at-risk on entry to school such as children with disabilities or those in severe poverty. The literature highlights two aspects of instructional competence which are consistently shown to be associated with better literacy and language development outcomes in multi-lingual learning settings:

- the skill and success of the teacher in creating classroom environments which facilitate participation and oral interaction; and
- implementing culturally and linguistically responsive pedagogical practice which scaffolds and reinforces English language learning as well as facilitating classroom participation.

There is also empirical support for one-on-one guided reading sessions, contextually relevant and engaging activities and shared experiences; revision and repetition; shared big books activities to build vocabulary, sight word recognition and conventions of print knowledge and sequencing. Explicit teaching of the differences between home and school language usage and meta-linguistic strategies for code-switching languages also appear to benefit second language learning. Co-operative, interactive and discovery learning approaches in early years learning (i.e. student centred pedagogies) are associated with higher levels of student engagement with learning and longer-term student success.

Effective staff training and support

Teaching quality is well known to be the leading school determinant of student outcomes yet there are surprisingly few Australian teacher training programs which specifically address the instructional and cultural competencies required for the teaching of Indigenous children. The literature reviewed consistently emphasises the importance of teacher training in the principles and practices of multi-lingual learning as well as the need for patience, understanding and flexibility and a realistic understanding that it usually takes between four and six years for a child to learn English as a second language at a level that comes anywhere close to that of a child whose first language is English. This and the high rates of teacher turnover in remote NT schools highlight the need for creating incentives and opportunities for local Indigenous school staff to undertake certificate and degree training as teacher assistants and teachers whilst remaining based within their communities.

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Appendix 1: Annotated bibliography of studies reviewed

Adams (1998).

This paper is a discussion of factors affecting Australian Indigenous Students' educational outcomes and possible ways to improve them. It mentions reluctance to include AI history, culture and language as part of curriculum.

Abstract: This paper focuses on factors influencing the effectiveness of educational provision for Indigenous Australian students, considerations for improvement in educational provision, and future prospects for enhancing Indigenous Australian students' achievement. It discusses factors such as Aboriginal and Torres Strait Islander child poverty, the level of educational disadvantage likely to be experienced by these students because of this poverty, and the covert racism and discrimination that is endured by young Indigenous Australians that can often lead to their alienation from the schooling system. Policy documents, developed to give direction to education systems for improvement in educational provision for indigenous Australian students, are looked at, and the future prospects for enhancing the educational achievement for Indigenous Australian students are considered.

No quantitative evidence cited.

Allen (2007).

Abstract: Inuktitut, the Eskimo language spoken in Eastern Canada, is one of the few Canadian indigenous languages with a strong chance of long-term survival because over 90% of Inuit children still learn Inuktitut from birth. In this paper I review existing literature on bilingual Inuit children to explore the prospects for the survival of Inuktitut given the increase in the use of English in these regions. Studies on code mixing and subject realization among simultaneous bilingual children ages 2–4 years show a strong foundation in Inuktitut, regardless of extensive exposure to English in the home. However, three studies of older Inuit children exposed to English through school reveal some stagnation in children's Inuktitut and increasing use of English with age, even in nonschool contexts. I conclude that current choices about language use at the personal, school, and societal levels will determine whether Inuit are able to reach and maintain stable bilingualism, or whether Inuktitut will decline significantly in favour of majority languages.

L2 instruction compared for simultaneous bilinguals and sequential bilinguals where L1 = Inuktitut or English and L2 = English or French and L2 instruction is introduced at different points of schooling. Although the use of Inuktitut as a sole language of communication declines with age, Inuktitut is not typically being replaced by English as a sole language, but rather by a balanced use of both languages depending on the interlocutor and the situation.

High strength of evidence.

Apthorp et al (2003).

The paper is a review of research and reports for interventions / approaches that impact literacy and numeracy outcomes.

It gives a comparison of two main intervention types:

- L1 language literacy then bilingualism and
- promoting cultural congruence (but not necessarily) bilingualism.

There are positive relationships between improved student achievement and the following program characteristics and classroom practices:

- teaching indigenous language and literacy first followed by instruction for English reading and writing and promotion of bilingualism,
- emphasising reading comprehension and peer interactions and frequent monitoring of student progress and
- using culturally congruent materials and instruction in mathematics.

High strength of evidence.

Arnold et al (2007).

This report discusses factors that influence early schooling success particularly for socially and economically disadvantaged children.

Key findings are:

- The language of instruction is a key factor in children's early learning experiences.
- Students whose first language was the same as the teacher's, even if the language of instruction was different, performed significantly better in primary school
- The developmental window of opportunity for rapid language learning closes at about the time children enter school.
- Initial competent communication and fluent reading skills are much easier to accomplish using the child's first language, given the wider vocabulary and familiarity.
- Bilingual programmes (official or unofficial) can be important. This is more difficult, and often impossible, when the learners have different first languages.

No quantitative evidence cited

Assembly of Alaska Native Educators. (1998).

This is a policy paper on appropriate standards for culturally responsive schools. They apply to students, educators, curriculum, schools and communities.

No quantitative evidence cited.

Assembly of Alaska Native Educators. (1999).

This paper presents a framework of indicators for determining knowledge and skills required by culturally responsive teachers.

No quantitative evidence cited.

Assembly of Alaska Native Educators. (2001).

General recommendations are offered to federal and state agencies, school districts, tribal colleges, Native organizations, and linguists to support the effective implementation of the culturally responsive schools guidelines.

Elders are recognized as the primary source of language expertise and cultural knowledge.

No quantitative evidence cited.

August and Shanahan (2006).

This US report gives a review of the literature on literacy in second language learners; only the executive summary is covered in these notes.

Some data is given on reading comprehension scores and high school completion rates for English medium students when English is L2.

The results focus on pedagogy. There is a finding that bilingual teaching facilitates L2 reading proficiency and that L1 literacy skills transfer to L2.

It notes a lack of adequate research into sociocultural influences.

No quantitative evidence cited.

Australian Education Union. (2007a).

This report is the AEU's response to the "Little Children are Sacred" report.

Points raised include the following.

The education matters raised first by the Little Children are Sacred report relate to language and culture. The report argues that teaching in English alone develops 'a failure syndrome' for many students – not understanding concepts, not remembering what was taught in what is, after all, a foreign language. A strong cohort of bilingual and trilingual teachers trained in cross-cultural sensitivities is essential and of prime importance for the NT education system.

Snowden has recently said that there are currently 12 schools, ‘supported by a frail network of three regional linguists to accommodate more than 20 or so active languages’, to struggle along with the successor to the bilingual education program that had been scrapped by the former CLP Government.

Little Children are Sacred points to the Learning Lessons recommendations that call for Indigenous perceptions and viewpoints to be reflected in the curricula, and suggests that they may not have been systematically implemented.

While the NT Government has expressed support for the revitalisation of bilingual education, it has not increased the number of assistant teachers provided to Indigenous schools.

A school offering bilingual education should be allocated one assistant teacher for every class/teacher, while the general allocation is currently 0.5 per class. Without the support of assistant teachers, many non-Indigenous teachers, who speak only English, would be unable to communicate with the children they teach in any meaningful way. Resource allocation and inadequate consultation with local educators has resulted in a departmental decision to designate schools as either a bilingual school or as participating in the Accelerated Literacy (AL) Program, but schools cannot be both.

No quantitative evidence cited.

Australian Education Union. (2007b).

This policy paper notes that AI preschool children do not have equality of access to preschool leaving them educationally disadvantaged from Y1. It argues that 2-3 years of preschool should be available to all AI children.

No quantitative evidence cited.

Ball and Pence (2001).

This report describes a curriculum development program run as a partnership between a university-based team and local Indigenous communities.

They engaged in a co-construction of training curriculum in Early Childhood Care and Development (ECCD).

Each community aimed to create their own curriculum by combining course work provided by the university-based team with culturally specific knowledge and practice provided by community resource people, especially by Elders.

What does it take to work in partnership?

- Administrators addressed a set of attitudes and forms of interpersonal engagement.
- Tolerate high levels of uncertainty and shared control of the program.

- Clarify and confirm informally, and later formally, agreement about the ‘mission’ of the partnership and the core elements of the program.
- Make a long-term commitment and persevere.
- Respond to expressions of community needs regarding program implementation with a high level of flexibility. Post-secondary partners need to be willing to jettison their ‘excess baggage’.
- Become familiar with the priorities, practices, and circumstances of the community, without becoming involved in them.
- Assume an encouraging, non-directive stance while waiting.
- Avoid ‘doing’ when non-action would be more productive of community agency and, ultimately, capacity building.
- Be receptive to what the community brings to the project, although these contributions may come in unfamiliar forms and at unexpected times.

Medium strength of evidence

Barnett et al (2007).

Abstract: An experimental study was conducted comparing the effects of dual language, or two-way immersion (TWI) and monolingual English immersion (EI) preschool education program on children’s learning. Three- and four-year old children were randomly assigned by lottery to either a newly established TWI Spanish/English program or a monolingual English program in the same district. Children in the study were from both Spanish and English home language backgrounds. All classrooms in the study used the High/Scope curriculum, and all met high standards for teacher qualifications, ratio, and class size. The TWI program alternated between English and Spanish weekly by rotating children between two classrooms (and teachers) each week. Programs were compared on measures of children’s growth in language, emergent literacy, and mathematics. Children in both types of classrooms experienced substantial gains in language, literacy, and mathematics. No significant differences between treatment groups were found on English language measures. Among the native Spanish speakers, the TWI program produced large gains in Spanish vocabulary compared to the EI program. Both TWI and EI approaches boosted the learning and development of children including ELL students, as judged by standard score gains. TWI also improved the Spanish language development of English language learners and native English speaking children without losses in English language learning.

This paper describes research based in urban schools. The sample consists of 150 English and 150 Spanish speakers divided equally between programs. Program duration was 200

days. The children were 3 or 4 years old. They were tested in language, emergent literacy and mathematics. All used the same curriculum and highly skilled teachers.

High evidence base

Bendes et al (2002).

Several Quotes are notable in this World Bank report on education.

- "Fifty percent of the world's out-of-school children live in communities where the language of schooling is rarely, if ever, used at home."
- "That children learn better if they understand the language spoken in school would seem an obvious observation- and indeed, it is borne out by study after study."
- "Bilingual programs are most successful where the goal is to make children literate in their first language and also to acquire fluency in the second.."

No quantitative evidence cited.

Biesta (2007).

This is an interesting paper in that it argues against evidence based practice for education. The argument is that the methodology is suited to medicine but not education with its intrinsically political and moral dimensions.

No quantitative evidence cited.

Branum-Martin et al (2006).

The paper studies the question: "Is phonological awareness in L1 the same underlying construct as phonological awareness in L2?"

The sample is 812 kindergarten children from 71 transitional bilingual classrooms in California and Texas.

They used confirmatory factor analysis.

High correlations suggest significant overlap of these constructs & hence transferability of L1 phonological awareness to L2.

Medium strength of evidence

Buckskin (2001).

This paper is opinion and commentary on the state of AI education in the Northern Territory and future directions.

No quantitative evidence cited.

Cahill and Collard (2003).

The paper discusses aspects of the “Deadly Ways to Learn” initiative taking particular care to incorporate Indigenous perspectives.

It reports on the improved bicultural approach in classes as indicated by, for example, much greater involvement of the IEOs.

No quantitative evidence cited.

Central Land Council. (u.d.).

A description of the Warlpiri Education and Training Trust which was set up from mining royalties with the support of the Central Land Council. Activities included bilingual materials production, support for school visits to country, funds to support elders participation in school and cultural activities.

No quantitative evidence cited.

Clancy and Simpson (2002).

The paper reviews some of the issues AI children are faced with in the classroom, in particular concerning culture and language. It also reviews several related studies.

No quantitative evidence cited.

Clay (2006).

This paper discusses the language and cultural discontinuities experienced by (American) Indigenous children transitioning into school and the lack of comprehensive research on transition models. She discusses the role of parents as cultural mediators.

No quantitative evidence cited.

Cleary (2005).

This paper is a parliamentary report on funding program outcomes for remote AI students.

It provides aggregated quantitative, qualitative reporting and case studies.

Culturally responsive curricula that are delivered in environments rich with Indigenous cultures, integrate Indigenous perspectives across learning activities, and utilise Indigenous languages and the preferred learning styles of students wherever possible, are highly important to Indigenous preschool education.

Of all IESIP funded preschool providers, 51% reported an improvement in developing and implementing a culturally responsive curriculum, 46% reported that circumstances remained the same, and 3% reported that their efforts had not been successful.

Partnerships between preschools and their communities were the strongest influence on culturally responsive curricula in 2001.

No relevant quantitative evidence cited.

Collier and Thomas (2004).

This paper follows on from their 1997 paper which was the interim report for this major longitudinal study. Their final 2002 report is unavailable.

Students from 23 school districts in a variety of programs were followed (in some cases at least) K-12. Two million student-years of records and test results for English L2 students were analysed. Additional qualitative data was obtained through interviews at the schools.

The study evaluates effect of a variety of teaching methods on English L2 students throughout their schooling. English reading scores are emphasised but are not the only measure studied.

The effectiveness of various programs was compared over the long term.

This paper appears to argue a point of view; the data still appears likely to support their position if the methodology had been balanced.

Their comparison of "mainstream" and bilingual programs is based on one sample from one district (n=100+50 students). They have data on approximately 200,000 students.

The comparisons between bilingual programs again use selected data from 1 school district (n=6200+5600+1500) without proper justification.

Aggregated longitudinal data from 2 states is presented to demonstrate that ESL programs are no more effective than mainstream and that both are significantly inferior to bilingual methods.

High evidence base but much of the analysis appears unreliable.

Cummins (2009).

This paper gives a critique of the literature assessing evidence on the value of bilingual education. It outlines the complexity and inconsistency of the methodologies followed.

The most significant papers from pro and anti bilingual fields that are assessed are the review of August and Hakuta (1997), Greene's meta analysis (1998), and Rossell and Baker (1996).

High evidence base

deCoursey (2005).

This paper discusses models of bilingual education including Cummins' theory that a threshold L1 proficiency should be attained before L2 proficiency can be attained or the

likely outcome is subtractive bilingualism. It argues that the staircase model has best theoretical and evidence base. It discusses the field's lack of measurement of L2 acquisition, arguing that the main focus is on literacy and course content.

No quantitative evidence cited.

DEET (2004).

This is a substantial report on the status of "Indigenous Language and Culture in Northern Territory Schools".

As part of this report some very interesting comparative data is presented and analysed.

The sample is students from 10 2-Way schools and 10 "like" schools. They combined MAP results over 4 years; a total of about 3000 tests in all. About half the data is for 2-Way students.

Across all years the 2-Way students had better enrolment and participation. Their MAP reading scores were lower than the control group in year 3 but improved more rapidly scoring higher in years 5 and 7 when their English was better established. Results for both cohorts were markedly below the national benchmark across all domains and at every year level.

The report notes that the 2-Way schools are better resourced (by 20-30%) and the matching is on similar student populations.

There are some indications that 2-Way learning improved outcomes and retention.

The report is very broad based making a number of important points about the need for an evidence base and need for improved consistency and quality in the delivery of 2-Way learning.

Low strength of evidence.

Demmert (2001).

The paper is a descriptive outline of research needed in the USA regarding native American Indian education.

No quantitative evidence cited.

Department of Education and the Arts (2005).

This Cape York and Torres Strait Education discussion paper "Bound for Success" is a comprehensive response to a critical problem: the poor educational performance of Indigenous students in Cape York and the Torres Strait.

Some points that arise are:

- create clusters of schools: the college model can produce significant increases in the number of students attending school, and improved outcomes for those students,
- investing in significant community leadership initiatives,
- students need support from their parents or carers and community to help them succeed in secondary education,
- parents and the community are also entitled to clear, consistent and regular reports
- schools in remote communities are best positioned to understand the educational needs and future requirements of their students.

No quantitative evidence cited.

Department of Education and Training, N.T. (2009).

DEET's Indigenous Education Strategy 2006-2009 supersedes Learning Lessons and the Indigenous Languages and Culture Review. The Remote Learning Partnership Agreements provide a mechanism for negotiation around education delivery to meet local needs. The Northern Territory Government will continue to support the Aboriginal and Islander Education Worker (AIEW) program,

They will provide the additional support of a coordinator for the 44 AIEW positions across the Territory. The coordinator will provide professional development and target work on attendance.

There will be provision of 42 additional teachers for teaching English as a second language to 7 and 8 year olds – \$22.41m.

Housing for additional English as a second language teachers – \$17.1m

The Northern Territory Government will negotiate with the Australian Government to expand the English as a Second Language program for Indigenous students (ESL ILSS) to cater for 7 and 8 year olds in addition to the current provision for 6 year olds, and provide housing for the associated teachers. This recognises that many Indigenous students have English as a Second Language and consequently require intensive language support.

It contains commitments to increase the cultural relevance of school and revitalise bilingual education.

No relevant quantitative evidence cited.

Department of Education, Science and Technology (1989).

This is DEST's policy position on Indigenous Education at the time.

The long term goals focused on the involvement of Indigenous people in the decision making and staffing at local schools as well as having input in broader discussions of policy.

No quantitative evidence cited.

Department of Education, Science and Technology (2002).

This is a broad ranging report on indigenous education for federal parliament.

Some relevant conclusions were (paraphrased):

- Culturally responsive programs that integrate Indigenous perspectives and utilise Indigenous languages and the preferred learning styles of students are most effective.
- Strong partnerships between preschools and their communities were the strongest influence on culturally responsive curricula.

No quantitative evidence cited.

Devlin (1995).

The paper is a review of evaluation practices for bilingual schooling in the Northern Territory.

Of interest is the move from quantitative appraisal ('79-'87) to qualitative community based assessment ('88-'93). This may explain why little data is available from the later years.

Some qualitative data from 1984 on literacy/numeracy skills is included and discussed in detail.

Some of the conclusions are weakly supported by the data.

That said there is a pattern in the data of broadly equal achievement when comparing students in bilingual schools with an equivalent cohort in English immersion.

Low strength of evidence

Devlin (2009).

Abstract (Summarised): The starting point for this paper is the sudden change of language policy announced by the former Minister for Education and Training in the Northern Territory on October 14, 2008. Declaring that her aim was to improve literacy and numeracy results in remote schools, Marion Scrymgour decreed that programs were to be conducted in English only for the first four hours of every school day. The reason for this policy shift was said to be the poor comparative performance of remote NT students, particularly those in schools with bilingual programs. As justification for the

policy reversal, an incomplete data document was submitted to the Legislative assembly on November 26 as supporting evidence (NT DET, 2008a).

This paper argues in favour of government decision-making that is based on transparent, valid, reliable and relevant data. It puts forward two main claims. The first is that Northern Territory program evaluations and international research findings have, on balance, indicated the comparative *effectiveness* of bilingual education.....

The second contention is that educators and parents in remote Northern Territory have amply demonstrated that bilingual programs in remote schools have *value* for them,

The claim that attainment in the first language can strongly contribute to proficiency in the second—an idea known in the literature as the interdependence hypothesis—now falls on deaf ears. What is advocated instead is a “time-on-task” notion: the seemingly intuitive idea that maximum exposure to English is now what is needed.....

This paper queries the recent policy shift and critiques the evidence on which it is based.

Evidence base low.

Comment: The evidence base was rated low because the data analysed here is strongly and convincingly criticised. There is now MySchool data available that, to a large extent, supports Devlin’s argument.

Devlin (2010a).

The author used data from the MySchool website to compare NAPLAN results for bilingual schools in the Northern territory with data from a number of "comparable" English only schools. This is a follow up to (Devlin 2009) when he criticised similar data tabled in the NT assembly to support the "4 hours of English" policy. The MySchool data for government schools gives attendance rates of 54% and 60% for English only and bilingual schools respectively.

Medium strength of evidence.

Devlin (2010b).

The author used data from the MySchool website to compare NAPLAN results for bilingual schools in the Northern territory with data from a number of "comparable" English only schools. This is a follow up to (Devlin 2009) when he criticised similar data tabled in the NT assembly to support the "4 hours of English" policy. While there are still serious gaps in the data it appears that the bilingual schools attain comparable or better results in numeracy, grammar/punctuation and reading. They attained about the same result in spelling and the English only schools did better in writing.

Medium strength of evidence.

Dockett et al (2006).

The starting school research project investigated the experiences, expectations and perceptions of children, families and educators as children move to school.

It asked what works to promote a positive transition to school for Indigenous children and their families?

Indigenous educators and parents value:

- Visible Indigenous presence (people and materials),
- Flexible Engagement with and respect for Indigenous families and communities.
- Access to mainstream curricula complemented by access to Indigenous languages and culture.
- High expectation of Indigenous children's capabilities.
- Flexibility – to stop children feeling isolated.
- Access to health services.
- Opportunities to view school and children's strengths positively.

Indigenous parents in this study recognised the need to develop strong relationship between schools, students and their families

The children have to know that it is safe and acceptable to move back and forth between the cultures.

Many Indigenous children speak Aboriginal English rather than standard English, some teachers consider this 'bad' English.

No quantitative evidence cited.

FaCS. (2002).

This is a descriptive study of child rearing practices in traditional communities in the central desert region.

Points made in the study that are worth noting include:

- Many communities endure high levels of disadvantage. There are very few real employment opportunities for the indigenous residents.
- People are also highly mobile and travel from community to community to visit family and conduct business.
- That stronger children learn first culture and language before turning to second language (8-12).

No quantitative evidence cited.

FaCSIA. (2006).

This work is based on focus groups and individual interviews with Torres Strait Islanders.

Many participants expressed views about the need to increase the teaching of culture and language within schools, as well as through community activities. Participants generally place a high value on formal education for their children and directly link it to their future career prospects.

There are concerns on some islands about the quality of education available to their children due to staff inexperience and limited resources.

A key issue in education is language. Most children are taught in English while, for many of them, English is their second language.

There are also difficulties with school books and resources that do not reflect life in the Torres Strait and Northern Peninsula Area regions.

No quantitative evidence cited.

Fasoli et al (2007).

This paper is a series of 6 case studies identifying factors that lead to development, change and sustainability. They were identified as:

- culturally relevant curricula,
- local teachers are best
- the importance of the mother tongue in the early years of education as well as the acquisition of a national language after the early childhood years,
- the meaningful involvement of parents,
- allowance for more local control.

No quantitative evidence cited.

Fleer (2006).

This is an interesting study which gave AI families the opportunity to record and present the cultural factors that they think influence their children's mainstream schooling.

Points they make include:

- Educators' understanding & awareness of some of the cultural norms are not valid in indigenous communities.
- Indigenous language is essential for a child to understand their cultural landscape.

- Children learn differently in different cultures: distinct attitudes exist over children being expected to question or be quiet, to observe passively or imitate and so on.
- There is much more emphasis on a collective view of interrelationships rather than data about individuals.

No quantitative evidence cited.

Fleer and Williams-Kennedy (2002).

This book is a study of literacy development in young AI children. In particular it looks at Indigenous modes of learning and communication and identifies the latter as literacies in their own right including:

- understanding non-verbal body language,
- understanding their natural environment,
- understanding complex social relationships,
- understanding own language and associated dialects.

They point to a number of strategies and approaches to learning that show significant cultural differences. Some that are important for later school experiences are:

- learning is a two-way process
- children learn by doing things together,
- they have obligations to each other; learning is a whole family obligation,
- children are not punished for making mistakes—mistakes are part of learning,
- listening is critical to learning—you do not have to look or appear to be attending to listen and learn,
- asking questions is more an urban way of learning; watching and listening is a more a traditional way,
- learning is about moving around and looking, not sitting still.

No quantitative evidence cited.

Francis (1999).

Abstract: This article reports on an investigation of the development of literacy, bilingualism, and metalinguistic awareness. The particular context of the study (high levels of bilingualism among school-age children) and the particular language contact situation (an indigenous language) offer a vantage point on the interaction between language learning and metalinguistic awareness and take into account the sociolinguistic

imbalances that characterize bilingual communities of this type. The subjects who participated in the study were speakers of Spanish and Nāhuatl from Central Mexico. Assessments of metalinguistic awareness related to different aspects of the children's consciousness of the languages they spoke or understood were compared to a series of assessments of reading comprehension, writing, and oral narrative in both languages. Findings suggest directions for further research along the following lines: metalinguistic awareness is related to different aspects of literacy development in different ways, the key variables being the degree of decontextualization and expressive versus receptive language tasks.

This study is part of a larger language and literacy study in Central Mexico where high levels of bilingualism exist.

School age children (n=45) performing at standard level were selected.

Individuals performed battery of informal non standardised tests and oral language analysis.

Bilingualism seems to make a contribution to metalinguistic awareness. Further research required on which aspects of bilingual development contribute to metalinguistic awareness and literacy.

Low strength of evidence.

Freeman and Bochner (2008).

This is a small study in which the parents of 19 indigenous preschool children participated. They were trained and encouraged to engage with their children at home in a variety of reading activities using supplied materials. It is not explicitly stated, but the study appears to have operated for about 6 months. It is unclear if the study selected for parents who do not speak standard English at home.

The study showed improvement in all measures of reading, as would be expected with no intervention. There was evidence of a narrowing of the gap between the subjects and the "norm" but this was not subjected to significance testing.

Evidence base low.

Friego et al (2004).

Abstract: This paper is a report of further longitudinal research into educational outcomes for younger indigenous students. It draws attention to the importance of a good start, attendance, engagement, supportive teaching strategies, strong links between schools and their communities, and school environments that recognise indigenous cultures. It includes; research design, community profiles, geographical regions, the assessment tools, factors influencing achievement and growth, learning contexts, and conclusion.

This is a longitudinal study to monitor and track improvement in literacy and numeracy up to Y3 in AI students from a variety of language backgrounds. Qualitative data from interviews and quantitative from LLANS assessments were gathered over 3 years.

Factors statistically associated with achievement were:

- remoteness,
- initial achievement (a strong predictor),
- SAuE language background,
- attendance (higher for SAuE users),
- attentiveness and
- cultural and linguistic diversity acknowledged in school.

High strength of evidence.

Gale et al (1981)

The progressive introduction of staircase bilingual education at the remote Indigenous community of Millingimbi provided an opportunity to compare over time the educational outcomes of children taught in English with others who received bilingual instruction.

Testing was over 4 years at year 5, 6 and 7 levels giving results for both instructional models at these year levels. Standard tests were used to evaluate oral English, English reading, English composition and mathematics.

The authors noted several possible confounding factors such as a possible Hawthorne effect, curriculum changes and progressive exposure to English and Western culture outside of the school. Possible confounders acting in the opposite direction are that the Indigenous teachers supporting the bilingual classes had little or no teaching experience at the start of the program and that the L1 curriculum and teaching resources were very limited in the early years of the program.

The study was well conducted and the cohort size, around 20 at each year level, is small but sufficient to achieve statistically significant results in several cases.

Both groups performed equally on English vocabulary tests. Bilingual students had better results on story retelling which increased with year level, but this was not statistically significant at 5% level. The three reading tests, particularly comprehension, showed a similar very significant pattern. At year 5 level the bilingually educated children were significantly behind the English educated children but by year 7 this was reversed. In most cases these results were statistically significant at 5% level. The authors cite this as evidence of L1 to L2 skills transfer.

The year 7 bilingually educated children also scored significantly higher than the English only group in written English composition and several arithmetic tests.

Overall on the ten tests at year 7 level, the English only students performed better on two tests (neither significant) while the bilingually educated students had better scores on eight, five of these at 5% significance level and two at 10%.

High strength of evidence.

Goto et al (2004).

This document, prepared by the First Alaskans Institute's Alaska Native Policy Centre, is an analysis of ISER's *Status of Alaska Natives 2004*. Its purpose is to give an understanding of what the data mean based on analysis by Native people.

The Policy Centre Project Team and participants in the discussions and meetings identified a number of further data needs.

No quantitative evidence cited.

Greene (1998).

This study is an important meta-analysis of the effectiveness of bilingual education for Spanish L1 students in the US.

Only 11 of 75 studies were selected as being of sufficient rigor; of these the samples ranged from 28 to 1400 (treatment plus control). In all cases the treatment/control groups were selected at random or the differences were adjusted for in an acceptable way.

The studies tested for relative improvement in English, English reading (and in some cases Spanish).

All studies used standardised tests in English after at least 1 year. All used rigorous statistical methods.

The results demonstrated improved outcomes for students in bilingual schooling on all measures, with the effect being statistically significant. The effect is quantified as being equivalent to an extra 3 months schooling over a two year period.

Comment: The generalisation to NT remote schools needs to be qualified. Influences that were probably of lesser importance to the studies surveyed, such as cultural differences, teachers' skills (especially fluency in L1) and so on may be significant in the local context.

High evidence base.

Greenwood (2005).

The paper draws on evidence from culturally based health and well-being programs to hypothesise that early childhood programs that support strong culture and language provides a pathway to Indigenous citizenship which is more effective than superficial approaches to school readiness.

No quantitative evidence cited.

Guglielmi (2008).

This paper describes a large longitudinal study over 12 years of 8th grade students in the US with Spanish or an Asian language as a first language.

It gives an analysis of 1800 students who self assessed as having limited English proficiency.

The work studies the relationship between L1 proficiency and a variety of education/career outcomes.

The methodology included latent growth modelling, prospective observational (cohort) study with 12 year follow-up.

It studied the causal path:

L1 proficiency ->

English Reading Growth ->

high school achievement ->

post high school accomplishments.

Note that the start age is ~13 so the results may not apply to early childhood. Analysis found a good fit with the model.

The study noted that the fit was poor for the Asian subgroup. The suggested reason is that the skills transfer is limited unless both languages share an alphabet (or alphabetically based writing). The results are of significance to the theoretical foundations of instructional programs.

High evidence base

Hakuta (1998).

This is a review and commentary on education of language minority children from a US perspective. It discusses the relative merits of ESL and bilingual programs concluding that bilingual programs offer a modest benefit.

No quantitative evidence cited

Hakuta et al (2003).

The study followed 204 children ages 5 & 6 years from a mix of English speaking, Chinese speaking or bilingual children.

The subjects were given 12 months' exposure to a bilingual instructional classroom.

The outcomes measured were bilingualism and learning to read.

Phonological awareness developed in response to language exposure and instruction and once established, transferred across languages for both bilinguals and 2nd language learners. However, decoding ability developed separately for each language as a function of proficiency and instruction in that language and did not transfer to the other language. So there was no overall effect of bilingualism on learning to read: reading performance depended more on the structure of the language, proficiency in that language and instructional experience with that writing system.

Medium strength of evidence.

Hakuta and Garcia (1989).

This paper is a discussion of educational issues regarding language minority students.

It questions whether a child's language status can be separated from their cultural context.

It discusses the various types of language competence (contextualised & decontextualised) and the idea that L1 & L2 learning can reinforce each other rather than compete (additive bilingualism).

They note that the debate over the effectiveness of bilingual programs is usually very restricted; the main input variable is the role of L1 in instruction and the output is usually limited to L2 proficiency (oral, literacy, curriculum). They note that the home/school linguistic mismatch often used to explain poor school outcomes for Hispanic students is contradicted by outcomes for Asian students.

They suggest that learning styles and cultural issues are also important.

No quantitative evidence cited

Hallet et al (2007).

This paper describes research into possible relationships between community level markers of cultural continuity and health and well-being of youth.

The research used a language use survey at community level and previous data on 6 markers of cultural continuity.

The correlation between breakdown in cultural continuity and rates of youth suicide was very strong.

No relevant quantitative evidence cited.

Hanlen (2007).

This paper is a review of the literature on early literacy in the AI context.

Among many interesting points discussed are:

- Children may not have experienced being read to. It is important to evaluate literacy experiences before launching into prepared units of work.
- Link indigenous children's home experiences with their education by including parents and community.
- Hearing deficiencies are common and impinge on the learning of literacy.
- Indigenous cultures are more holistic in nature than Western cultures.
- Social practices are often compartmentalised. When we apply western pedagogies ... it becomes like trying to fit a square peg into a round hole.
- The skills required for Indigenous literacies, including oral literature, are basically the same as those required for contemporary Western literacy practices.
- Languages occupy these spaces. "These languages must be accounted for in Indigenous education".

No quantitative evidence cited.

Harris (1995).

This paper is a historical review of changes in practice in bilingual education in the Northern Territory.

No quantitative evidence cited.

Health Canada (2000).

This report describes the Aboriginal Head Start (AHS) initiative for indigenous Canadians living in urban centres and large northern communities. Aboriginal Head Start projects typically provide half-day pre-school experiences that prepare young Indigenous children for their school years by meeting their spiritual, emotional, intellectual and physical needs. All AHS sites provide programming or activities in each of the six AHS component areas: culture and language; education; health promotion; nutrition; parental involvement; and social support.

Most sites report that their primary languages of instruction are English and at least one Indigenous language. For at least five sites, the primary languages of instruction were French and an Indigenous language. In total, thirty Indigenous languages are used in the presence of the children.

The majority use Indigenous languages (91%) and books (67%) or toys (71%) reflecting Indigenous cultures on a daily basis.

Elders and traditional people are most commonly involved in cultural activities on a daily or weekly basis and parents and caregivers participate in cultural aspects of the program most often on a weekly or monthly basis. Best practices in the Indigenous culture and languages component include complete immersion in the language and culture; use of visual aids and culturally appropriate toys, books and resource materials; involving elders, parents and family; use of music and song; and culturally based curricula.

No quantitative evidence cited

Howard (2007).

The paper discusses conductive hearing loss in Indigenous children and its effect of their schooling.

Often they are also the students who are most disruptive in class and they tend to be less academically successful at school.

Hearing loss makes it more difficult for the affected Indigenous children to acquire language skills, especially when learning English as a second or third language. They may misunderstand what is said. They are often slower to learn concepts. They may distract a group with 'off topic' interjections or they may just maintain a perplexed silence. They often seek to cope with their communication difficulties by avoiding or minimizing their involvement, missing school more often and taking part less.

Classroom based research points to a number of mediating factors:

- the cultural context of the classroom,
- the teachers' perceptions of, and responses to the behaviour of Indigenous children with conductive hearing loss, and
- the levels of background noise in schools.

No quantitative evidence cited

Hu (2008).

This paper is a rather polemic critique of the debate and evidence regarding bilingual education in China, which he sees as being biased towards positive assessments.

He first notes the divergent terminology used in the Chinese literature and the use of assessments of foreign programs with different methodologies but the same label to argue in support of the local programs.

He notes that bilingual programs in China (where students are immersed in an English learning environment for all or part of the day) are more akin to submersion programs

where language minority students are instructed in their L2. (Many programs have the added drawback that the L2 is also L2 to the teacher.)

He argues that L1 acquisition can be compromised in the decontextualised domain despite being the student's everyday language. He notes the poor L2 (English) skills of many of the teachers and also the generally poor quality of program assessment both in China and more broadly.

Limited evidence base.

Hutchins et al (2007)

This paper is a review of Maori L1 immersion programs in New Zealand primary schools (Kohunga).

The review indicated that the majority of Kohunga graduates had gone on to senior school, tertiary education or employment.

Successful programs emphasise indigenous history and culture, are under indigenous control and have respectful indigenous and non-indigenous relationships.

The Generative Curriculum model was developed to combine the experiences and knowledge of both indigenous and non-indigenous participants in order to create practitioners who are able to live and work in both worlds.

Outcomes are contrasted (favourably) with retention and academic outcomes for comparable students in mainstream education.

Medium level evidence base.

Janus et al (2003).

This is a Canadian study of school readiness of 4 and 5 year olds and its determining factors using the Early Development Index.

The main predictive factors for low school readiness were

- Low income Family,
- Higher percentage of adults unable to speak an official language and
- Higher percentage of adults without completed high school education.

Medium level evidence base.

Kieffer (2008).

This paper studies the reading growth of language minority children in the US.

The sample (n=17,385) consists of children with 1 or more kindergarten reading assessments with:

- 746 children from a Language Minority background initially with full English language proficiency,
- 1,134 Language Minority children initially with limited English language proficiency and
- 15,362 native English speaking children.

Multi-level modelling trajectory analysis was used.

The analysis shows that Language Minority children with proficiency in English have trajectories of education similar to those of native English speakers. The trajectories of LM children with poor proficiency in English on entry to school diverge from those of native English speakers and show wide disparity by 5th grade. Controlling for SES reduces this effect from large to moderate. This also depends on the level of school poverty.

Medium strength of evidence

Klump (2005).

This paper is a review of culturally responsive practices that research indicates can contribute to the academic success of students from diverse backgrounds.

It focuses on methods not outcomes of students and largely on high schools.

It reviews common themes effective in culturally responsive programs:

- teachers & students working together,
- developing language and literacy skills across the curriculum,
- connecting lessons to students lives,
- engaging students in challenging lessons and
- emphasising dialogue over lectures.

No quantitative evidence cited

Kosonen (2006).

This is a UNESCO report on multilingual education that uses the learners' first language. Mostly focuses on programs in Asia.

Quote: "There is strong evidence that submersion in the L2 is at least highly inefficient, if not wasteful and discriminatory, since such school systems are characterised by low intake, high repetition and dropout, and low completion rates".

No quantitative evidence cited

Lavoie (2008).

This paper reports on bilingual education programs in Burkina Faso.

They find that bilingual education improves student and community participation and improves teachers' relation with their pupils.

They collect descriptive and analytical data as well as classroom observations.

One striking table gives results of the national examination in French for French only and bilingual schools over several years. The bilingual schools appear to score significantly better.

The low rating of the evidence reflects the fact that a limited range of data was aggregated across a large number of bilingual programs. The methodology was also poorly defined.

Low strength of quantitative evidence.

Lo Bianco (2000).

This paper is a broad discussion about language policy in Australia, covering multilingualism locally and the language skills required to engage with other countries, particularly trading partners.

No quantitative evidence cited.

Lowell and Devlin (1998).

Abstract: A crucial question in cross-cultural education is how to bridge the cultural and linguistic differences between home and school so that a child's identity can be supported without limiting his or her chances of academic success (Eades, 1991). Various models of bilingual education have been implemented in Indigenous communities in the Northern Territory of Australia but the implementation of such programmes is often far from ideal. In the school where this ethnographic study was conducted, miscommunication between Indigenous students and their non-Indigenous teachers was found to be commonplace. Even by late primary school, children often did not comprehend classroom instructions in English. In addition, many students attended school irregularly, and many had a history of mild hearing loss due to otitis media (middle ear infection) which is highly prevalent in Australian Indigenous communities. Cultural differences in communication were not easily differentiated from hearing-related communication problems by non-Indigenous educators. These difficulties were exacerbated by the lack of specialist support and appropriate training for teachers in cross-cultural communication and ESL teaching. Although the Indigenous teaching assistants were often effective in minimising communication breakdown, the extent of miscommunication severely inhibited the children's education when English was the language of instruction and interaction. The

problem identified is one that should be of major concern to all concerned with Indigenous education.

No quantitative evidence cited.

Malcolm and Sharifian (2005).

This is a study of bidialectical Indigenous children in Perth and Yamatji.

Using text analysis they have studied how subjects adopt the SAE dialect second to AE dialect and the implications of this for the education system.

AE involves use of range of schemas not corresponding to SAE schemas. They need to learn new schemas for organising and interpreting new experiences and discourse - therefore educators need to be informed of those schemas employed in both cultures and dialects in order to adequately support the path between.

Limited evidence base.

Malin (1998).

This paper is an opinion piece on teaching qualities that provide success for AI students:

- high expectations,
- high understanding of students and
- open to new learning from students and parents.

No quantitative evidence cited.

Malin and Maidment (2003).

This paper argues that greater collaboration between the different sectors of social service providers is required in order to both dismantle social barriers to learning for Indigenous children and their families and provide access to an education that is meaningful and empowering.

They describe two educational programs which have been developed as alternatives to the mainstream programs. They highlight a process of community development and capacity building directed at fulfilling Indigenous family or community aspirations.

No quantitative evidence cited

Marks and Garcia (2007).

Abstract: Research regarding the development of early academic skills among American Indian and Alaska Native (AIAN) students has been very limited to date. Using a nationally representative sample of AIAN, Hispanic, African American, and White children at school entry, the authors used latent growth models to estimate the associations among poverty, low parental education, living in a rural location, as well as

child attitudes toward learning and internalizing/externalizing behaviours, with mathematical and reading cognitive skill development across the 1st 4 years of school. Results indicate that AIAN children entered kindergarten with scores on both mathematical and reading cognitive tests that were comparable to their peers from other ethnic groups of colour. Importantly, all children who entered kindergarten with lower cognitive skill scores also acquired skills more slowly over the next 4 years. Having a positive approach to learning at the start of kindergarten was associated with cognitive skill levels at school entry nearly 1 standard deviation above the population average. Results are discussed with reference to the shared early educational profiles observed between AIAN and other children of colour. These findings provide a much-needed update regarding early academic development among AIAN children.

High Evidence base.

Marks et al (2003).

This report is produced by the Canadian “Head Start” program as a review of research on early childhood for Indigenous American children.

Some interesting points raised are:

- Very few parent education programs have been developed specifically for an AI population, and no studies have been conducted on their efficacy.
- Many health disparities may be attributable to socioeconomic and environmental factors. For example, poverty, rather than race or genotype, is the major factor associated with foetal alcohol syndrome.
- AI-AN children have higher rates of hospitalization for respiratory illnesses.
- AI-AN children may be prone to a greater incidence of speech disorders than the general population.
- In some children, speech disorders may result from recurrent middle ear infections and as such may be preventable.
- AI-AN children may experience higher rates of depression, abuse, and neglect, and abused or neglected children are more prone to behavioural problems, psychiatric symptoms, and risk taking behaviours.

High evidence base

May (2005).

This paper reviews the history and status of bilingual and immersion programs in Aotearoa/New Zealand.

No quantitative evidence cited

McCarty (2008).

This paper is an analysis of undesired effects of the US “No Child Left Behind” policy in which schools whose students don’t score well enough at national testing are subject to a number of interventions.

In particular, the standardised English tests disadvantage bilingual schooling and pressure teachers to teach to the test.

It gives 3 examples of L1 immersion and bilingual schools that have achieved high scores in testing and good educational outcomes.

Medium strength of evidence.

McCarty (2003).

Abstract: The world's linguistic and cultural diversity is endangered by the forces of globalisation, which work to homogenise and standardise even as they segregate and marginalise. Here, I focus on the struggle to conserve linguistic and cultural diversity among Indigenous groups in the United States. Native languages are in drastic decline. Yet even as more Native American children come to school speaking English, they are likely to be stigmatised as 'limited English proficient' and placed in remedial programmes. This situation has motivated bold new approaches to Indigenous schooling that emphasise immersion in the heritage language. This article presents data on these developments and their impacts on students' self-efficacy and school performance, analysing these data in light of critical theory and current knowledge in the field of bilingual education. Indigenous language reclamation efforts must not only confront a legacy of colonialism, but also mounting pressures for standardisation and English monolingualism. I conclude with an examination of these power relations as they are manifest in the struggle for Indigenous self-determination and linguistic human rights.

Most of the data presented is on language revitalisation and student achievement.

Low strength of relevant evidence.

MCEETYA. (2001a).

This is a broad paper on teacher training for AI students with a description of national policy and the population context.

No quantitative evidence cited.

MCEETYA. (2001b).

This discussion paper raises the effect of health status on educational outcomes for AI children.

It notes health issues that influence poor school outcomes such as:

- low birth weight,
- ear infection,
- failure to thrive,
- poor quality diet,
- respiratory infections and
- social and emotional wellbeing.

No quantitative evidence cited

MCEETYA. (2001c).

This report discusses areas of key concern for effective early learning for AI children:

- parental enrichment,
- transition in curriculum and pedagogy between early childhood and primary school,
- lack of pedagogical understanding of diversity and cultural capital and
- ESL/EFL background for children of oral rather than print tradition

No quantitative evidence cited.

MCEETYA. (2006).

This is a position paper of the Ministerial Council on Education, Employment, Training and Youth Affairs, and Curriculum Corporation on Indigenous education.

Abridged Executive Summary: The educational outcomes of Indigenous Australians have improved over recent decades. This is evident across a range of indicators on the enrolment, participation and achievement of Indigenous students

Despite some gains, Indigenous Australians are yet to achieve equitable outcomes. Many Indigenous students continue to ‘drop out’ at or before Year 10..... These outcomes limit the post-school options and life choices of Indigenous students, perpetuating intergenerational cycles of social and economic disadvantage.

....The Indigenous population is also growing at twice the annual rate projected for the rest of the population. ...There is therefore an urgent need to challenge the prevailing view that disparity in the educational outcomes of Indigenous and non-Indigenous students is ‘normal’

This paper provides recommendations to focus national effort over the 2005–2008 quadrennial.They are systemic as engagement will not occur, or be sustained, unless Indigenous education is ‘built in’ to become an integral part of core business.

The recommendations align with... early childhood education, school and community educational partnerships, school leadership, quality teaching and pathways to training, employment and higher education. They ...can be adapted by jurisdictions and schools to suit local contexts.

Implementation willassist jurisdictions to meet proposed education and training outcomes of the national reform agenda (human capital stream)....

No quantitative evidence cited.

McEwan et al (2007).

Abstract: This paper analyses the difference in academic achievement between indigenous and nonindigenous children that attend rural primary schools in Guatemala. The gap ranges between 0.8 and 1 standard deviation in Spanish, and approximately half that in Mathematics. A decomposition procedure suggests that a relatively small portion of the achievement gap is explained by differences in the socioeconomic status of indigenous and nonindigenous families. Other results are consistent with the notion that school attributes play an important role in explaining the achievement gap. The paper discusses several explanations such as the lack of bilingual education that are consistent with the empirical findings.

The paper mentions the possible effect of being language minority and of bilingual education in explaining and closing the gap but the available data precludes this analysis.

No relevant quantitative evidence cited.

McKenzie (2010)

This powerpoint presentation analysed NAPLAN data from the MySchool website and related Australian Bureau of Statistics demographic data. The locations studied were the 20 NT 'growth towns' (all are very remote and predominantly Indigenous) and thirty schools from remote indigenous communities in Queensland and Western Australia that MySchool listed as 'similar'. Relevant findings included:

- Demographically the NT communities were very distinct; they had much higher numbers of non-English speaking households, a much less (Western) educated adult population, were much poorer and far more overcrowded.
- Compared to the other states, the NT schools had much lower scores in reading and writing as well as much lower school attendance rates. However, regression analysis showed that once demographic differences are allowed for no statistically significant difference in outcomes between the NT and the other jurisdictions.
- The strongest predictors of a school's attendance results were the proportion of adults in the community who had completed year 12, a youthful population,

remoteness and the proportion of households where English was the language spoken.

- The strongest predictors of reading and writing scores were bedroom occupancy, the proportion of households where English was the language spoken and median adult income.

Medium strength of evidence.

McKinley and Brayboy (2008).

This paper is a review of culturally appropriate schooling and its effect on education outcomes. In some cases this means bilingual education but the paper does not carefully identify instances. For example there are tables summarising teachers' knowledge and usage of L1 globally but individual programs are discussed without specifying this. On page 6 there is discussion about how the "No Child Left Behind" policy and its emphasis on English test results drives educators away from adopting Culturally responsive pedagogy as they try to maximise student test scores.

Medium strength of evidence

McRae et al (2000).

This paper is a study of school readiness of AI children based on a review of a series of programs.

A lack of inclusion of Indigenous children and Indigenous cultural learning were cited as key factors in low participation rates.

Literary education needs to start early (3) and continue seamlessly until 8. The late start by many AI children causes ongoing disadvantage in literacy acquisition.

Teachers need knowledge of children's life world including factors that can make the bridge between home and school longer and more difficult for indigenous children to traverse.

Programs that try to reduce indigenous/ non-indigenous differences in language ability and English literacy succeeded. Child-child and child-adult interactions also improved.

Children introduced to primary school early are more comfortable and relaxed.

Medium strength of evidence.

Mellor and Corrigan (2004).

This is a paper analysing the field of Indigenous education research in Australia.

This review doesn't deal with "minutiae of language teaching, but regard it as self-evident that some methods are better than others, and further, that good and experienced teachers can choose the best methods for their students."

Some conclusions they draw from the literature include:

- that good teachers are integral to ameliorating Indigenous student disadvantage,
- effective relationships between parents and teachers are critical,
- children learn best when there is a semblance of consistency between home and school environments,
- there is a need to encourage Indigenous children to move fluently among and between cultures.
- emphasise high expectations and code-switching strategies,
- the importance of health and nutrition in the early years and
- explicate what are the necessary skills for making educational transitions and the identification of what makes a child ready.

Risk factors include:

- low levels of participation in high-quality early childhood education and parental enrichment programs and
- uneven transition from, early childhood practices to the primary school curriculum.

Limited evidence base.

Molyneux (2009).

Abstract: The development of literacy in languages other than English is frequently overlooked in schools, despite the need for students to develop a suite of ‘multiliterate’ skills.

One school’s bilingual learning arrangements – designed to support students (over 90 per cent of whom are learning English as an additional language) in the development of English and two other languages – are reported on in this article. Student achievement data reveal high levels of English-language achievement over time in students learning bilingually. Student and parent questionnaire and interview data reveal that bilingual learning is viewed as highly important for social, familial, educational and identity-related reasons, though the degree to which languages other than English require ongoing school support divides parent opinion. Ultimately, this article reveals that much needed academic language proficiency in English need not be at the cost of supporting students’ emergent bilingualism and biliteracy. As such, bilingual education programs such as that reported on here offer models for schools seeking to maximise students’ language and literacy potential, enhance their identity construction, and respond to the literacy challenges of the 21st century.

There is a clear pattern of low test scores in early years improving steadily to 80% achieving year-level targets at year 6. No statistical significance testing was done and many of the sample sizes are small.

The qualitative data show a clear desire on the part of students and parents that students achieve competence in both languages, that the bilingual program is supported and that it should be extended to higher grades.

Low strength of evidence

Moran et al (2007a,b).

The 2007 National Indian Education Study (NIES) was conducted by the National Centre for Education.

Part I of the study focuses on the performance of American Indian and Alaska Native (AI/AN) fourth- and eighth-graders on the 2007 National Assessment of Educational Progress in reading and mathematics. Approximately 10,100 AI/AN students at grades 4 and 8.

Overall, the average reading scores for AI/AN fourth- and eighth-graders showed no significant change since 2005 and were lower than the scores for non-AI/AN students in 2007. In 2007 at both grades, AI/AN students attending schools in which less than 25 percent of the students were AI/AN scored higher than their peers attending schools with higher concentrations of AI/AN students.

Results for mathematics were similar.

Part 2 presents information about the educational, home, and community experiences of the cohort. AI/AN students represent about 1 percent of the student population in the United States. Approximately 10,000 AI/AN students in 1,700 schools at grade 4 and 11,000 AI/AN students from 1,800 schools at grade 8 participated in the study. Surveys were completed by students, their teachers, and their school administrators.

Medium strength of evidence.

Murtagh E. (1982)

This paper studied English oracy in children from two schools in 'similar' remote Indigenous communities (Barunga and Beswick). The Barunga students were taught in a 50/50 bilingual program (English/Kriol) while the Beswick children were taught only in English.

The cohort sizes were small; a total of 29 in each community in the first three years of schooling. Children with poor attendance records or unstable home situations were excluded and the schools had similar routines and resourcing.

Proficiency in oral English and Kriol speaking were studied as well as interference effects due to transfer between the languages. English comprehension was also tested as was the children's attitude towards speakers of each language. In both schools reading and writing are taught from Y3 so children were not tested for literacy skills.

Mother tongue proficiency was stronger in the bilingually schooled cohort particularly at Y3, where the results are statistically significant on each of 5 tests.

English proficiency and comprehension testing showed mixed results at Y1 level; of 6 tests used each cohort scores significantly better on 2 tests. By Y3 the bilingually schooled cohort performed significantly better on all 6 tests including English comprehension. In particular, the bilingually schooled children demonstrated a greater ability to separate the languages and showed greater improvement at this with year level (statistically significant for Y3 students).

Bilingually educated students were also significantly more positive in their attitude to English speakers.

High strength of evidence.

NAEYC (2005).

This is a position paper on appropriate screening and assessment methodologies for young English language learners.

Some important points made in the paper are:

- good assessment is linguistically and culturally responsive,
- screening and assessment procedures guide classroom decision making, such as what books to read,
- translations of English- language instruments should be free of linguistic and cultural bias,
- assessment should first determine the child's language history and proficiency,
- only those assessments designed to evaluate proficiency or development in the language domain should be used for this purpose,
- English- language learners should be assessed in both English and the child's home language when possible,
- code-switching is not unusual and is not necessarily a sign of deficiency in language development (Garcia, 1990). It demonstrates children's efforts not only to practice multiple languages, but also to successfully navigate multiple cultural markers, norms, and values,

- all children should be made to feel at ease sharing and explaining traditions and values of their family and community and
- translated material should be carefully reviewed for cultural and linguistic appropriateness by a native speaker who is familiar with assessment constructs.

No quantitative evidence cited.

New South Wales Aboriginal Education Consultative Group Incorporated. (2004).

Abstract: In announcing a major Review of Indigenous education in NSW in 2003, Deputy Premier and Minister for Education and Training and Minister for Aboriginal Affairs, Dr Andrew Refshauge, challenged the schools and TAFE NSW sectors to dramatically improve the learning outcomes of Indigenous students. He stated, "I want Aboriginal student outcomes to match or better outcomes of the broader population – this Review will help us to achieve that goal".

The Bidialectal Approach to Teaching Standard Australian English program is designed to increase teachers' understanding of Indigenous English and to improve Indigenous students' understanding of the use of language for specific purposes.

No quantitative evidence cited

Nicholls (2005).

This paper is a discussion of the history of bilingual programs in remote NT schools.

It criticises current 2-way programs as watered down and poorly defined.

It argues that current English only testing discriminates against students educated bilingually, especially in early years.

It argues there is a good evidence base supporting bilingual education through MAP and other testing regimes that has not been publicly released. (The paper cites Devlin '95 as a notable exception.)

The paper also argues for bilingual education on the grounds of preservation of culture, human rights as well as educational outcomes.

No quantitative evidence cited.

Nixon et al (2007).

Abstract: Purpose: The purpose of the present article is to provide the closing context for this clinical forum that showcases prereading and reading development research with Spanish-Speaking English language learning children.

Method: Background information, including legislation, judicial review, and past research, are used to interpret the results of the studies in the clinical forum.

Implications: Suggestions for practitioners and future research are presented based on the clinical forum and background information.

Limited evidence base.

Northern Territory Department of Education. (1999)

This is a major NT dept of Education review by Collins of all aspects of education for Indigenous Territorians, including funding arrangements, infrastructure, language issues, curriculum etc.

Key recommendations include:

- there be an increase in the exposure of all Indigenous children to early literacy and numeracy learning in vernacular where appropriate and Standard Australian English oracy and
- NTDE supports ‘two-way learning’ programs in schools where the local community wants such a program and assessment demonstrating the essential elements for its effective delivery are in place.

No quantitative evidence cited.

Northern Territory Department of Education and Training. (2007).

This is the progress report for the “Closing the Gap” initiatives for 2007-2008.

Some notable points include:

- \$50m over two years for literacy learning, teacher training, classrooms and nutrition program,
- \$98m over 5 years for 200 additional teachers,
- development of childcare hubs (Children and Family Centres) in 3 communities,
- expansion of the mobile preschool program,
- extra training for remote indigenous staff and
- 184 CDEP positions in remote schools transferred to fully paid jobs.

No quantitative evidence cited.

Ovando and Collier (1985).

This article is an extended book review.

The authors emphasise relevant material and content towards the importance of "teaching in multicultural contexts".

The excerpts from teachers and students provide a personal connection.

This book addresses issues of cultural diversity, Bilingual/ESL strategies, and provides a reference on laws and policies that have evolved to focus on today's changing educational settings.

No quantitative evidence cited.

Paciotto (2004).

Abstract: In 1991, the Bilingual Bicultural Education Program (BBEP) was launched in Chihuahua, Mexico, as a way of responding to the educational needs of the indigenous Tarahumara populations and the growing threat to their language and culture. Using a conceptual framework based on the literatures of curriculum inquiry, language shift and maintenance, and literacy studies, this 10-month ethnographic case study examines the sociocultural contexts of the implementation of the BBEP in a federal school serving Tarahumara and the role of the school and the BBEP in indigenous language maintenance. Specifically, the paper reports and discusses findings on how state-developed BBEP goals relate to the teachers' and parents' expectations of school and literacy and biliteracy. As the findings show, the school is the place of children's first intense contact with mestizo culture and language and the agency where children are expected by parents and teachers to acquire Spanish oral and literacy skills.

Low strength of evidence.

Parker et al (2005).

Abstract: This article estimates the impact of language barriers on school achievement and the potential ameliorating role of bilingual education. Using large household data sets from poor rural communities in Mexico, we find that parental language (failure to speak Spanish) represents an important barrier to the schooling of indigenous children. We provide an empirical test suggesting that this largely reflects parental human capital related to culture/language, rather than unobserved wealth effects. Using double difference estimators with community fixed effects to address endogenous program placement, we demonstrate that schools with bilingual education narrow the gap in the educational performance of children with monolingual mothers versus bilingual and nonindigenous mothers.

This school retention study uses a very extensive data set: children from 120,000 households in rural Mexico, with cohorts defined by

1. Mother speaks Indigenous language only, Spanish only or both and
2. Child attends a bilingual or Spanish only school.

It compares years of schooling completed with age for each of the cohorts. Extensive adjustments are made for other factors such as socioeconomic status, proximity of schools, level of teacher training etc.

There are several clear effects. The gap between monolingual Indigenous cohort and others is very significant. There is a smaller gap between bilingual and Spanish only.

Attending a bilingual school reduces these gaps significantly; by about 60% for monolingual Indigenous mothers. No data on the quality of teaching outcomes was analysed.

High evidence base.

Pearson et al (2009).

This paper reports on a comparative study of 2 cohorts of children; mainstream American and Afro-American speaking. A total of 854 children were tested.

The study identifies significant differences in the age at which each group achieve 90% for a range of consonants in various positions in words.

The implications for the diagnosis of speech impairment were discussed. They suggest only using phonological tests where both groups perform similarly.

Evidence base strong.

Penman (2006).

This paper is a review of the literature on “growing up” AI children.

The review documents at length the multiple dimensions of AI disadvantage.

Some of the most relevant points made are summarised below.

The concept of “resilient children”, the 1/3 who fare much better than their background would suggest, is discussed.

Their main distinguishing characteristics are:

- have established a close bond with at least one caretaker who gave them positive attention in their early years,
- found a supportive role model and
- relied on informal rather than formal sources of support: it was ‘kith and kin’, rather than the professional and social service agencies, that was far more important.

There are different lived experiences as a function of remoteness especially in the domains of health status and housing.

Protective factors identified included positive attention from parents, supportive relationships with other adults and extended family, family harmony, and religious faith.

If Indigenous children, especially those from more traditional lifestyles, are to make a successful transition to Western-style school, they need to be introduced to a ‘schooling culture’

Numerous studies of children experiencing disadvantage or disability have shown that quality preschool experiences can have measurable impact on the school readiness and educational outcomes in the first few years of schooling.

Limited evidence base.

Prochner (2004).

Abstract: This article presents an outline history of early childhood programs for indigenous children through a comparative study of initiatives in three countries--Canada, Australia and New Zealand--with the aim being to identify common and distinct developments in the three nations. Formal early childhood education programs for indigenous children based on European models have a history that extends over 200 years. Yet this history is relatively unexplored. Although they mostly developed outside the structures of schooling for older children, programs for younger and older students shared a similar trajectory. The earliest initiatives were subject to missionary influence and colonial control, with later programs likely to be influenced by indigenous beliefs and values and be community-based and locally controlled.

No quantitative evidence cited

Purdie et al (2000).

The paper describes a project that examines the self-identity of AI students and how that influences school outcomes. It includes a review of literature and data collection through consultations (surveys and qualitative interviews).

Students in the current study showed positive self-identity as Indigenous people but this was not necessarily linked with successful educational outcomes.

Positive self-identity as a student is associated with school success.

Their recommendations contain the following relevant points (summarised):

- raise teacher awareness of the importance of Aboriginal English and its differences with Standard Australian English,
- bilingual education should be continued/implemented where appropriate, but with an early introduction of English and
- Indigenous teachers and community members play a greater role in establishing Indigenous languages, English literacy and numeracy for Indigenous students within schools.

They note that bilingual education programs have been attributed with improving relations between schools and Indigenous communities, improving self-confidence among Indigenous children, and improving learning outcomes.

Limited evidence base.

Queensland Government (2000).

ESL is the only ELL strategy mentioned.

NAPLAN figures show a similar gap to the Territory that persists.

Main influences on outcomes listed as:

- coherence between home and school and
- difficulties experienced in code-switching.

Limited evidence base.

Ramirez (1991).

This major longitudinal study compares the relative effectiveness of structured immersion, and late and early exit bilingual programs.

They use the time of reclassification from LEP to FEP as a measure of English language acquisition. They found that 72% of early exit, 66% of immersion and 50% of late exit students had been reclassified by the end of Y3. This figure is 80% for late exit by the end of Y6.

Students were also assessed using standard English language tests.

While detailed comparisons of immersion and early exit showed comparable results at the end of Y3, at the end of Y1 immersion students had better L2 language skills while early exit students were better readers.

Comparison of these models with late exit is limited, because there were no schools providing a mix of models. At the end of year 6 late exit students fared best when there was a high level of both languages being used, and fared poorly when abruptly transitioned to English only instruction.

Comparisons between the 3 programs were made by comparing their outcomes relative to “norming populations”. Late exit was the only program that showed ongoing convergence with the population norm. The other programs tended to plateau from about Y3.

Some quotes:

"As in English and mathematics,those students who received the strongest opportunity to develop their primary language skills realised a growth in their English reading skills that was greater than the norming population " and greater than the other programs.

"As their growth in these skills is atypical of disadvantaged youth, it provides support for the efficacy of primary language development in facilitating the acquisition of English language skills."

"LEP students who are abruptly transitioned into an English-only instructional program appear to lose ground in all three content areas, a pattern that is consistent with disadvantaged youth in the general population."

High strength of evidence.

Rau (2005).

This paper is a study of Maori literacy acquisition in Maori immersion schools.

A total of 200 year 2 Maori immersion students were tested between 1995 and 2003 using Maori language versions of standard assessment tools.

The assessment tools appear to have been validated reasonably well but not calibrated against the English version.

Results were compared by year of test, gender, age but not with a control group (in a bilingual or mainstream program).

Medium strength of evidence.

Reyhner (2003).

This paper studies Indigenous mother-tongue immersion programs for Maori and Hawaiian children.

They discuss pedagogy and the benefits of mother tongue instruction while stressing the importance of early instruction in English.

No quantitative evidence cited

Rinehart (2006).

This paper, although primarily a language revitalisation study, also has an emphasis on the importance of culturally appropriate early childhood practice for strong cultural identity as well as solid foundations for later academic success.

No quantitative evidence cited

Robinson et al (2009).

This two volume report is an assessment of an accelerated literacy program across the NT with a particular emphasis on factors affecting outcomes.

Volume 1 notes low program fidelity as a major impediment.

This is related to limited PD for staff and limited uptake of training available.

The role of the assessment measures (IL & TORCH) are discussed extensively. They give very significantly different results across a spectrum of variables (ESL, Teacher retention, locale and timing of tests) which brings into question the usefulness/validity of IL data.

The IL data for very remote students is of interest. Indigenous students score much lower than remote/regional indigenous while very remote nonindigenous students get the highest score of any cohort.

The 2 best predictors of accelerated learning are LOTE and reading age at first assessment. Students appear to need a base level of literacy/English to benefit from the program.

There is evidence that program effectiveness drops off over time from 2nd assessment results. The graph on p18 is telling: at all stages nonindigenous students progress faster. For both there is an initial rise, plateau then a drift backwards over time. It takes much longer for initial benefits to show for indigenous students.

Vol 2 gives technical detail and feedback from the focus groups which includes:

- the program is not suitable for teaching the basics but is good for more advanced pupils,
- lack of sufficient PD to implement the pedagogy and
- ineffective for very remote LOTE students.

The report also gives a critique of aspects of the data; no data collection for non-readers implies that success is included while failure is excluded. This skews the results.

High strength of evidence.

Rolstad et al (2005).

Abstract: This article presents a meta-analysis of program effectiveness research on English language learners. The study includes a corpus of 17 studies conducted since Willig's earlier meta-analysis and uses Glass, McGaw, and Smith's strategy of including as many studies as possible in the analysis rather than excluding some on the basis of a priori "study quality" criteria. It is shown that bilingual education is consistently superior to all-English approaches, and that developmental bilingual education programs are

superior to transitional bilingual education programs. The meta-analysis of studies controlling for English-language-learner status indicates a positive effect for bilingual education of .23 standard deviations, with outcome measures in the native language showing a positive effect of .86 standard deviations. It is concluded that bilingual education programs are effective in promoting academic achievement, and that sound educational policy should permit and even encourage the development and implementation of bilingual education programs.

High strength of evidence.

Schwab (2006).

This is a report to the Warlpiri Education and Training Trust Advisory Committee on options for Education and Training.

The main option proposed is for a for hub and spoke concept for early childhood facility including preschool and day care and including training and employment opportunities for community members.

No quantitative evidence cited

Schwab and Sutherland (2004).

Abstract: This report is a scoping study commissioned by The Fred Hollows Foundation in collaboration with the Jawoyn Association. It is the first stage of a long-term project aimed at enhancing health, education and employment outcomes in the Katherine region through a community literacy program. This study focuses on the Indigenous community of Wugularr, in which children's English literacy and numeracy levels are extremely low, and participation in adult education and technical and further education is declining. The study has several aims, which are to: gather demographic and employment data in order to assess the current situation, identify needs and plan future progress; determine community perceptions of literacy through a series of consultations; provide case studies of international best practice related to community literacy; and provide the community, and individuals, with strategies to acquire skills, knowledge and resources to increase literacy levels throughout the region. Consultations with the community culminated in three critical areas of literacy being identified for immediate improvement and these involve: supporting young children, mothers and families; supporting adolescents and adults; and supporting children at school. The relationship between literacy and health is also outlined in the report as an important area for discussion. Specific ideas and programs are suggested as a means of tackling these challenges, and similar community literacy models from Australia and overseas are also outlined.

Of note is the discussion of the successful adoption in Wugularr of the FELIKS tool, which has helped both students and teachers. The FELIKS program is a training package for teachers that focuses on Standard Australian English instruction but recognises the

legitimacy of Aboriginal English and Kriol. The approach trains teachers to assist children develop code switching strategies.

No quantitative evidence cited.

Shepherd and Walker (2008).

The paper examines research and practice evidence in engaging AI families in the process of school readiness. It broadly discusses the importance of early development, provides key elements of the practice-wisdom and presents case studies.

Medium strength of evidence.

Silburn et al (2010)

This is the Northern Territory report of the Australian Early Development Index (AEDI), a survey of all Australian children in their first year of school in 2009. The children were assessed in five important developmental domains; physical health and wellbeing, social competence, emotional maturity, language and cognitive skills (school-based), and communication skills and general knowledge. Demographic data were also collected.

Some findings of particular relevance to the present work are:

- In comparison with all Australian children, a much higher proportion of NT children live in remote communities (22.2% vs 1.8%) and in very remote communities (26.4% vs 1.1%).
- Around 40.4% of children commencing school in the NT are Indigenous compared to just 4.8% across Australia.
- The proportion of NT children who live in very disadvantaged areas (i.e. lowest SEIFA quintile) is almost double the proportion living in similar areas of disadvantage nationally (41.4% vs. 21.7%). Nine of the ten most disadvantaged communities in Australia are located in the NT.
- Indigenous children in the NT are more likely to have language backgrounds other than English than all Australian Indigenous children (76.2% vs. 24.6%) and non-Indigenous children in the NT (76.2% vs. 15.9%).
- Indigenous children in the NT have much higher rates of vulnerability in every domain when compared to either non-Indigenous children in the NT or Indigenous children nationally.
- Indigenous children are particularly vulnerable in the *Language and Cognitive Functioning* domain (46.9% in the NT compared to 28.6% of Indigenous children nationally and 7.9% for non-Indigenous children nationally).
- Indigenous children in the NT are much more likely to have multiple vulnerabilities if they live in very remote communities or have a non-English L1.

High strength of evidence.

Simpson et al (2009).

This paper is a review of arguments (for) bilingual education in remote NT communities. It also provides an unfavourable assessment of 2-way learning and outlines political history underpinning the changes in policy.

There is a good discussion of the Collins and Yu reviews and a summary of the education/human rights arguments for access to bilingual education.

No quantitative evidence cited.

Simpson and Clancy (2000).

This paper is an observational study of a small sample of AI children focusing on the cultures of school and home.

It notes the importance of teacher, community and learner knowledge of the power of culture in the classroom.

Quote: “Young children want to fit in ... but often, because the construction of the ‘ideal’ pupil is seen as one ‘drawn primarily from the lifestyle and culture of the teacher concerned’, it is not an automatic or easy process....”

It is significant that Singh (1993, p. 35) suggests that, ‘Culture and education’ are inter-related processes of social organization and social structure within society. This relationship gives rise to the notions of the dominant culture and what is at stake when a child from a minority group is in transition between home and school. It means that there is actually another layer of transition involved, one from their own culture into the dominant culture as well as the transition from the home to the educational setting.

No quantitative evidence cited.

Siraj-Blatchford and Clarke (2000).

Abstract: This book provides the main ingredients for professional development in working with young children in a diverse society. It fills the gap that most early years training neglects, that is, how to work with children in developing a positive disposition towards themselves regardless of their differences. By helping children to develop a strong self-identity and good self-esteem we set the foundations for positive attitudes towards others and towards learning. Practical advice, real examples and staff activities bring the book to life. The book provides clear evidence and practical guidance on how to develop young children's emerging language, especially those children who have English as an additional language, and how to generate, activate and assess curriculum for diversity. The book focuses on all children's learning for cultural diversity. Culture is used as a broad term to include language, ethnicity, social class and gender. Each chapter offers a clear combination of theory and practice and ends with excellent staff

development activity and further readings. The book will be important reading for all students and practitioners working with young children.

No quantitative evidence cited

Slattery (1993).

Slattery's paper outlines strategies to engage IA children in English language activities.

Evidence base rated low.

Slavin and Cheung (2005).

This paper is a review of 17 studies comparing reading instruction results for children in bilingual and English immersion programs.

To be included studies had to be random or have matched variables in assignment. Students had to be ELL in an English speaking country and program had to run for at least year.

The review found that there are too few high quality studies for very strong conclusions.

They find that on balance bilingual models provide better outcomes and that the effect is particularly strong for paired bilingual models, where literacy instruction is at a different time of day for each language.

They find that quality of instruction is at least as important as language of instruction.

High evidence base

Sparks et al (2008).

This study seeks to identify L1 predictors of later L2 outcomes on reading and spelling.

It was a prospective observational (cohort) study with 10 year follow-up of 54 ESL students from the USA.

They found that L1 word decoding, spelling and reading comprehension skills transfer from L1 to L2. The small sample size limits the strength of the conclusions.

Medium strength of evidence

Tagoilelagi-Leota et al (2005).

This study follows the development of language and literacy skills in children as they make the transition from a mother tongue preschool to a mainstream primary school.

The longitudinal study is of L1 Pasifica children who attend a L1 preschool then English (L2) primary school. Various L1 & L2 language and literacy measures were applied at age 4.6, 4.8, 5 and 6.

The small sample sizes (between 15 and 49) make the significance of the correlations doubtful, especially given the large number of relationships that were tested for.

Some trends do appear reasonably clear including:

- transfer of literacy skills from L1 to L2 after school commencement,
- L2 skills improve rapidly (to close to mainstream within 1 year) and
- L1 skills stagnate or decline.

Medium strength of evidence.

Tharp and Yamauchi (1994).

The paper introduces 'ideal' activity settings to produce and maintain productive Instructional Conversations (IC) between teachers and Native American students.

ICs for Native Americans are influenced by psychocultural factors: sociolinguistics, motivation, cognition and social organisation.

Suggestions are made for suitable IC contexts.

Low strength of evidence.

Thomas and Collier (1997).

This is the major study of language minority students in the USA.

They analyse 700,000 student-years of data on language minority students plus a huge control group. It is longitudinal data for years K-12. Students study in a variety of models including ESL interventions and several bilingual models. There are claims that the data covers a variety of skills but only results in English reading are reported.

The study rejects data from programs that it considered to be poorly run, and students who had prior English exposure or poor/absent L1 education. Programs were classified into 6 groups and test results compared over time.

With the huge longitudinal datasets this should be a definitive study in this field. However, their original data is unavailable and very little is explicitly reported here.

They are heavily critical of other work in the field and stress the importance of proper statistical significance testing. They do not follow up with a single measure of the significance of their data or even properly tabulate their findings. They are reasonably explicit about their sampling, data exclusion and program classification methods.

That said they draw very strong conclusions that may well be justified by the data.

Conclusions:

- The best programs get students to the L1 English "norm" in 6 to 8 years.
- ESL then English mainstream students performed as well in very early years but then fall progressively further .

- The best predictor of L2 test performance in later years is the amount of curriculum delivered in L1 in early years.
- The best L2 outcomes are for programs that teach it through curriculum.
- Similar results hold for retention rates; they are significantly better for students with longer L1 exposure at school.

High evidence base.

Tobias (1994).

Abstract: This report explores the educational progress of students of Limited English Proficiency (LEP) who entered the New York City Public Schools in the fall of 1990 and 1991. It describes students' success in meeting the exit criteria for bilingual and English-as-a-Second-Language (ESL) programs. The study focuses on such short-term outcomes as the time required to exit such programs and reading and mathematics achievement in English after moving to monolingual-English classes. Students entering the schools are considered eligible for ESL or bilingual programs if they speak a language other than English at home, and if they score at or below the 40th percentile on the Language Assessment Battery (LAB). This research tracks two cohorts of students whose first-time enrollment in the schools followed the establishment of new criteria for entering LEP programs. The report is divided into the following sections: Results: Exit Rates from ESL and Bilingual Programs by Grade Entered, Exit Rates from ESL and Bilingual Programs by Home Language, Entering Level of English Proficiency, Tested Achievement of Students who Exit LEP Programs, and Discussion and Recommendations. The appendix contains six data tables concerning:

- number of years to Exit ESL-Only or Bilingual programs by Home Language (fall 1990 through spring 1994);
- number of years to Exit ESL-Only or Bilingual Programs by Home Language (fall 1991 through spring 1994);
- Home Language Distribution by Program Assignment for the fall 1990 through spring 1994;
- Home Language Distribution by Program Assignment for the fall 1991 through spring 1994;
- Number of Years to Exit ESL-Only and Bilingual Programs Controlling for Students' Level of English Proficiency upon Entering the Program (fall 1990 through spring 1994); and
- Number of Years to Exit ESL-only and Bilingual Programs Controlling for Students' Level of English Proficiency upon Entering the Program (fall 1991

through spring 1994).

Low strength of evidence.

Tong et al (2008).

This paper reports on a longitudinal study of 534 Spanish speaking English language learners in an urban context.

Schools were assigned to a control or enhanced program to comply with state laws against randomly assigning children. The programs were either transitional bilingual (TBE) or structured English immersion (SEI). The 2 year programs ran in kindergarten and Y1.

Only English oral proficiency was tested for.

Each cohort acquired English oracy at a similar rate. The immersion students' initial scores were significantly higher and the difference remained roughly constant over time.

L1 instruction did not impede L2 learning.

Enhanced or best practices in TBE and SEI accelerate L2 acquisition regardless of initial low English proficiency levels.

High evidence base

Trujillo et al (2003).

This study of Indigenous pre-service teachers describes attitudes to inclusion of language and culture, the effect of teacher training on attitudes, environmental factors that support or diminish efforts and teacher perception of impact on student outcomes.

No quantitative evidence cited.

Tuafuti and McCaffery (2005).

This is a New Zealand study of 140 Pasifica students in Bilingual classes in one school.

The only outcomes reported are retention and engagement.

Attendance is reportedly better than comparable students in L2 classes but no figures are given. Transience figures are given and are much lower. The paper argues that their success is due to cultural empowerment in addition to bilingual classes.

Low strength of evidence.

UNESCO (2003).

This UNESCO report on education recognises, as basic guiding principles:

- UNESCO supports mother tongue as a means of improving education quality...

- UNESCO supports bilingual and/or multilingual education at all levels of education.....
- UNESCO supports language as an essential component of inter-cultural education...."

No quantitative evidence cited

UNESCO. (2008b).

This UNESCO paper describes bilingual education programs from different parts of the world. There are 4 case studies discussed in this paper, we have sourced the reports for 2 (PNG and US).

These notes only cover the other 2 (Mali and Peru). Both are Transition models and include extensive development of L1 resources.

The Mali program started as a pilot (1200) expanding to over 2000 schools over 7 years.

The aim was to improve student retention, French and literacy compared to French medium schools. Extensive data has been collected on student test results. The model is to start with L1 only then gradually introducing L2 until mix is 50/50 by grade 6. The program is culturally adapted as well as in first language.

In Peru there are 100,000 children enrolled in bilingual education. There is no good quantitative data for any of the programs. They are less well described and it appears there is a lack of consistent methodology.

They were set up in recognition of indigenous cultural/linguistic rights as well as to improve retention and literacy in L2.

Both studies claim similar outcomes in terms of improved student retention, engagement, numeracy, L1 and L2 oracy and literacy. Only the Mali case provides data (test results in mathematics, French and overall university entrance exam scores). Their results are impressive and based on very large samples.

High strength of evidence.

Wallace (2007).

Abstract: The greatest challenge inhibiting the ability of English-language learners (ELLs) to read at the appropriate grade level is perhaps a lack of sufficient vocabulary development. While extensive reading is beneficial, these students must acquire the necessary vocabulary in order to read extensively. Both vocabulary breadth and vocabulary depth are of equal importance to reading performance. The use of cognates, teaching the meaning of basic words, and review and reinforcement are important steps in developing the vocabulary of ELLs. Direct instruction in vocabulary, combined with

word-learning strategies, was also found to be effective. Ultimately, vocabulary knowledge is a critical component of reading comprehension.

No quantitative evidence cited.

Welford (2008).

These guidelines describe the program's intentions as well as being a resource for teachers. The program asserts the importance of the child's L1 in order to contribute to their wellbeing and sense of belonging. It notes that impaired L1 development impeded L2 development. Encourage L1 use between children and with community members but SAuE is the main language of the program.

No quantitative evidence cited.

What Works Clearinghouse.

This web based resource has a diverse range of information. Some pertinent points are:

- learning about aboriginal culture may be an important device to convince indigenous parents to send their children to pre-school,
- a lack of inclusion of aboriginal children and aboriginal cultural learning were cited as key factors in not sending children to pre-school,
- mobility is a fact of life for some indigenous students, is likely to remain so and should be accepted as such,
- literary education needs to start early (3) and continue seamlessly until 8. Knowledge of childrens' lifeworlds is required,
- pre-school bridge between home and school, which may be longer and more difficult for indigenous children to traverse. Both 'paly based' and 'structured' programs are helpful,
- programs found that introduce children to primary school early - children more comfortable and relaxed, and
- programs that try to reduce indigenous/ non-indigenous differences in language ability and English literacy succeeded, child-child and child-adult interactions improved.

No quantitative evidence cited

White (2009).

This is a report for Queensland Government on strategies to improve indigenous education status.

- One key is the development of self-esteem in IA youth.

- The department needs to reconsider what language(s) should be used in the classroom.
- There is a need for a clearinghouse for programs/approaches to Indig Education.
- Need to encourage role of parents as first teachers.
- Community ownership and cultural relevance is important.
- ESL instruction with respect for L1.

Some NAPLAN data is given that repeats the NT pattern of high correlation between remoteness and lower scores.

Low strength of evidence.

Wild and Anderson (2007).

The “Little Children are Sacred” report covers a wide range of issues relevant to AI children in the NT.

Some of the more relevant points to our project are:

- non-Aboriginal teachers are unable to explain concepts in a way that Aboriginal students can understand: they need to be explained in the local Aboriginal language,
- schools teaching and instructing in English alone develop a failure syndrome
- a strong cohort of bilingual and trilingual teachers trained in cross cultural sensitivities is essential,
- poor attendance at school is widespread,
- teaching is often in an inappropriate language,
- there is inconsistent or non-existent delivery of sex education,
- it is not clear to the Inquiry why the Learning Lessons Report, which was presented in 1999, has not received more importance and/or urgency with implementation than it has, and
- there is irresistible evidence to show that when the home languages and cultures of students are reflected in their learning experiences and learning environments, students achieve better levels of learning.

No quantitative evidence cited.

Willig (1985).

Abstract: A meta-analysis of selected studies on the efficacy of bilingual education was conducted and the results were compared with a traditional review of the same literature.

When statistical controls for methodological inadequacies were employed, participation in bilingual education programs consistently produced small to moderate differences favouring bilingual education for tests of reading, language skills, mathematics, and total achievement when the tests were in English, and for reading, language, mathematics, writing, social studies, listening comprehension, and attitudes toward school or self when tests were in other languages. The magnitude of effect sizes was influenced by the types of programs compared, language of the criterion instruments, academic domain of the criterion instruments, random versus non random assignment of students to programs, formula used to calculate effect sizes, and types of scores reported in the studies. Programs characterized by instability and/or hostile environments were associated with lower effect sizes. The synthesized studies contained a variety of methodological weaknesses which affected the magnitude of the effect sizes. Initial group differences—in language dominance, in environmental language exposure, in need for the bilingual program—were not uncommon. In some cases, comparison groups contained bilingual program "graduates." In others, experimental groups changed in composition during the study through the exiting of successful students and their replacement with newcomers subsequent to pretesting and prior to post testing. Although the technique of meta-analysis allows for statistical control of methodological inadequacies, the methodological inadequacies in the synthesized studies render the results less than definitive and highlight the need for quality research in the area of bilingual education. Problems inherent in conducting research on bilingual programs are discussed in relation to the outcomes of this synthesis, and guidelines for future research are proposed.

High strength of evidence.

Wright and Bougie (2007).

This paper reports on three studies: none is easily available in the original.

All studies used "face card" sorting for questions related to status, friendliness, intelligence etc.

The first study is on the reduction of dominant group prejudice by placing them in a 50/50 bilingual school with the minority language group. The theory is that contact between groups reduces prejudice if that contact is equal status and the groups cooperate towards a shared goal.

Data is reported to strongly support this in a sample of 351 children. Tabulated data for white only/mixed background English language only/ bilingual 50/50 classrooms appears strong but no statistical analysis given.

The next two studies are on the effect heritage language instruction has on the self perception & group perception of children, Preliminary discussions consider the weak status of LM students where learning is in the dominant language only; in particular

lower test scores and overrepresentation in special education classes. They contrast transitional and maintenance bilingual models and argue that only maintenance respects the language rights of students and fosters self- and group-worth.

Study 2 compares Inuit children in kindergarten programs that are L1 or dominant language. Self worth and group-worth were both much stronger in the Inuit language group. The last study looked at students that had been taught mainly in Inuit at the point of transition (yr 3) to mostly dominant language tuition. Their high self- and group-worth was gone by the end of the year. Finally, the paper reviews research into subtractive bilingualism and relatively slow L2 acquisition in submersion programs. In particular they argue that students end up incapable of decontextualised reasoning in either language.

Low strength of relevant evidence

Wright et al (2000).

This is a study of subtractive bilingualism in 140 children entering school (63 Inuit, 25 mixed heritages, 8 Qallunaat).

They used an observational (cohort) study design with 4 year follow up.

They compared teaching of Inuit as 2nd language and English as the main instructional language versus Inuit as 1st language classes

The differential performance of these groups suggests support for the hypothesis that L2 speakers taught in English language & Inuit as a 2nd language leads to Subtractive Bilingualism i.e. poorer proficiency in both languages.

Medium strength of evidence

Zubrick (2004).

This is the Western Australian Aboriginal Child Health Survey.

Some points made are:

- fluency in an Aboriginal language use has been shown to be strongly related to levels of relative isolation. However, when modelled against relative isolation, language use was found to independently predict higher levels of education, and
- the teaching and learning of Aboriginal languages should be encouraged within schools and adult education as a key strategy for cultural preservation and promotion of cultural identification and intercultural understanding and respect.

High strength of evidence

Synopses of some Excluded Papers

Ball (2007).

This report on Indigenous Canadian literacy and language development mostly relies on primary sources included already.

It makes an interesting point about the high prevalence of hearing loss in indigenous children and the effect on their education outcomes.

No qualitative evidence cited

Walker, K. (2004).

This is the National Preschool Education Enquiry Report

A number of points are of interest:

- for some families who did not have their own transport, the bus to preschool is the only means by which children could access the program,
- in rural and remote areas, continuous turnover of staff disrupts program continuity,
- 12 enrolments are required before a preschool teacher is employed. The need for such enrolment figures in small remote communities stops access to quality preschool programs,
- because preschool is not a compulsory part of school, and often not available or simply held on the veranda of a school, it is not always regarded as important or understood by some families,
- lack of access to preschool for itinerant families is a significant issue in the Northern Territory,
- the high level of fragmentation of programs for Indigenous children and the number of factors that continue to act as barriers to Indigenous children in accessing high quality preschool,
- the inquiry witnessed a number of MACS childcare and preschool centres that provided high quality programs which did reflect cultural relevance and the employment of Indigenous staff,
- traditional type models of preschool did not necessarily accommodate the specific needs of local Indigenous communities. Expectations of particular times and structures within the models were listed as a barrier to access,
- the mobile playgroup services half a million square kilometres of rural and remote Northern Territory,

- difficulties in the recruitment and retention of qualified preschool staff were also identified as barriers, particularly in remote areas,
- the importance of continuity of staff was raised repeatedly, and
- throughout the inquiry, parents and teachers commented on how important is to have Indigenous staff working, coordinating and participating in the programs.

Low strength of evidence

Zubrick (2000b).

This is a study of 5,600 WA Aboriginal children aged 0-17 years.

It incorporates extensive descriptive epidemiological plus data linkage to school, NAPLAN literacy & numeracy outcome data.

High evidence base