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ORIGINAL ARTICLE

# The role of Aboriginal literacy in improving English literacy in remote Aboriginal communities: an empirical systems analysis with the Interplay Wellbeing Framework

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**Abstract** Indigenous language endangerment is critical in Australia, with only 120 of 250 known languages remaining, and only 13 considered strong. A related issue is the gap in formal education outcomes for Aboriginal and Torres Strait Islander people compared with other Australians, with the gap wider in remote regions. Little empirical research exists in Australia to explore the role of developing Aboriginal literacy through bilingual education to address these combined issues. As a 'shared space' collaboration between remote communities, government, and scientists, the Interplay Wellbeing Framework and associated Survey were designed to represent community values and priorities in a quantifiable system to inform policy and practice. A cohort of 842 Aboriginal people aged 15–34 years from four remote communities completed individual surveys designed and administered by Aboriginal community researchers. We applied structural equation modelling to this data to understand the role of cultural indicators on education outcomes. Results confirmed the importance of strong relationships between community and schools. Furthermore, learning about culture and learning literacy in ones first language in schools to develop Aboriginal literacy, is established as a necessary step to improve English literacy in remote schools.

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This suggests bilingual education and strengthening culture and community involvement in schools are necessary to improve both education outcomes and language preservation.

**Keywords** Aboriginal literacy · English literacy · Aboriginal communities · Bilingual education · School

## 1 Introduction

Australia has been identified in the top five hotspots globally for language endangerment (Anderson and Harrison 2007). In 2005, the first National Indigenous Languages Survey reported that of 250 known Indigenous languages only 145 remained with about 110 critically endangered and only 18 remaining strong in all age groups. By 2014, estimates reduced substantially to 120 languages remaining with only 13 considered strong (Marmion et al. 2014). Language preservation is critical with language inherently linked with identity, community, wellbeing and access to ancient knowledge systems (Biddle and Swee 2012; Cairney et al. 2015a; Marmion et al. 2014). Given that Aboriginal languages and the knowledge systems they hold are traditionally oral, language and knowledge retention in the modern world depend upon the development of reading and writing skills in these languages, known collectively as 'Aboriginal literacy'.

A related issue in Australia is the gap in formal education outcomes for Aboriginal and Torres Strait Islander people compared with other Australians, with the gap wider in remote regions (Turnbull 2017). Significant national policy investment since 2009 has focused primarily on attendance and national standardized testing with little recorded impact (Turnbull 2017). Our review of the relationship between education and wellbeing in remote communities identified the need for policies and programs to substantially improve the quality and cultural relevance of education, as well as the community's involvement in schooling in order to improve outcomes (Wilson et al. 2016). The need to consider education as part of a holistic system of wellbeing was also emphasized in line with Indigenous worldviews (Nguyen and Cairney 2013).

A considerable international evidence-base consistently reports the significant wellbeing benefits of bilingual education—or first learning literacy in one's own language in school before learning literacy in another language, usually English (Silburn et al. 2011). However the evidence in Australia has been contentious (Devlin 2011). In the Northern Territory where 42% of Aboriginal people spoke a language other than English at home (ABS 2012), government support for bilingual schools was removed based on national standardized test results reporting that students at bilingual schools performed comparatively worse than those at otherwise similar non-bilingual schools (Scrimgour 2008). However a later report clarified this was an incorrect reading of the data, and bilingual schools had actually produced improved education outcomes in remote communities (Devlin 2009; Simpson et al. 2009). In fact, despite substantial qualitative evidence in Australia together with compelling international evidence, language endangerment and chronically poor education outcomes for Indigenous Australians, very little empirical research and evaluation has been conducted on the wellbeing benefits of bilingual education (Nguyen and Cairney 2013; Simpson et al. 2009; Wilson et al. 2016).

Policies have been critiqued for lacking genuine contributions from Aboriginal and Torres Strait Islander people, with culturally misaligned strategies imposed with little positive impact (Yu 2012). Although governments have long acknowledged the holistic and interconnected

nature of Aboriginal cultural values, they have not been integrated successfully into policy and practice (Nguyen and Cairney 2013; Turnbull 2017). Effective research in this space must use decolonising methodologies that incorporate Indigenous worldviews and mitigate cultural bias imposed from non-Indigenous worldviews (Smith 2012).

### 1.1 The Interplay Wellbeing Framework and survey

In recognition of the holistic worldviews and unique socio-cultural landscapes of remote communities, the Interplay Wellbeing Framework and Survey were designed as a 'shared space' (Fig. 1) collaboration between remote communities, governments and scientists (Abbott and Cairney 2014; Cairney et al. 2015b). Core team members from each of these sectors (including 42 Aboriginal Community Researchers) collaborated to design the framework and survey, to best represent community values and priorities in a quantifiable measurement system to inform policy and practice (Cairney et al. 2015b). Informed through extensive grassroots community consultation (Cairney and Abbott 2014), comprehensive literature review (Nguyen and Cairney 2013) and the aforementioned collaborative network, the Interplay Wellbeing Framework brings together community identified priorities of culture, empowerment and community, together with government priorities (based on national 'Closing the Gap' policies) (Fig. 2). Taking a 'stories to numbers' approach, qualitative and quantitative data are integrated—as presented in an interactive online version of the Interplay Wellbeing Framework—to develop a stronger understanding of the holistic system of wellbeing of Aboriginal people (http://www.crc-rep.com/wellbeingframework/).

For this quantitative data, a cohort of 842 Aboriginal adults from four different remote communities in NT and WA completed the Interplay Wellbeing Survey (administered by local Aboriginal researchers), and structural equation modeling was used to statistically validate the holistic nature of the framework (Cairney et al. 2017). As in the current study, structural equation modeling was then subsequently applied to the same dataset to investigate specific questions, interrelationships or pathways within the holistic framework.

Initial analysis showed that Aboriginal literacy had direct positive impacts on wellbeing, and correlated strongly with English literacy and numeracy (Cairney et al. 2017). In this paper, we investigate this relationship further to better understand the role of Aboriginal literacy and other cultural indicators on education outcomes. Our research sought to discover what, if any, connections there were between a school culture that respected the local culture;

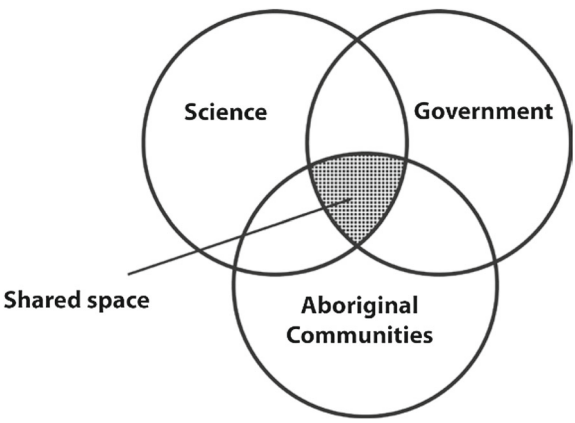


**Fig. 1** Shared space model


**Fig. 2** Interplay Wellbeing Framework

bilingual education (learning to read and write in an first language); and the effects they have on success in English literacy and numeracy. Here we test the hypotheses developed through comprehensive review of the literature (Wilson et al. 2016) and outlined above, that education outcomes are improved in remote communities through stronger community involvement, higher quality and greater cultural relevance of school curriculum, and the development of first language literacy through bilingual education.

## 2 Methods

### 2.1 Setting

This research carried out within the Cooperative Research Centre for Remote Economic Participation (CRC-REP) managed by Ninti One Ltd. As part of the research, we developed a collaborative and capacity development model of working where all research is conducted and communicated in the (conceptual) 'shared space' between the three core partner areas of community, science and government (Abbott and Cairney 2014). Each of these areas is represented at several levels: within the core team; in the broader stakeholder network; and in a National Advisory Group that informs the project. A key element of the shared-space model is the employment of local Aboriginal researchers in each research location through the Ninti One Aboriginal Community Researcher (ACR) program (Abbott and Cairney 2014; Abbott and Taylor 2015). As part of this approach, 42 ACRs were recruited, trained and employed to contribute to research design and data collection. The shared space model is both ground-up (or 'grass roots') and top-down, ensuring strong links between science, community development, and policy impact (Cairney and Abbott 2014). As the lead Aboriginal researcher in the study, author TA coordinated the ACRs and roles of all community members and

organisations. The other authors' contributions were as follows: BW is a PhD student on the project, SQ is the statistician who conducted data analysis and SC leads the Interplay research project. All team members including the ACRs were involved in interpretation and reporting of the findings.

### 2.2 Participants

Participants were selected from four remote Aboriginal communities across the Northern Territory and Western Australia representing diversity across geography, culture, language, population size and models of infrastructure and service delivery. Participants where classified as either Remote (46%) or Very Remote (54%) based on Community location (AIHW 2004). Community selection was based on a combination of sampling methods, established relationships with partner organisations within communities, and community self-selection, whereby research goals aligned with community needs (Cairney et al. 2015b). Aboriginal and Torres Strait Islander people comprise the Indigenous or First Australian population, however all of these terms are collective and represent many different language and cultural groups. As no Torres Strait Islanders participated in this research, we refer in this report to participants collectively as 'Aboriginal'. However, they represent many different clan and language groups.

Surveys were collected from 917 Aboriginal and Torres Strait Islander people aged 15–34 years in the communities. This age range was selected as that closest to when individuals undergo the life course transition from education through to employment, to ensure meaningful outcomes were delivered within the project's 6-year lifecycle. A total of 73 participants were excluded based on their age $>34$ years, and a further 2 for other selection criteria. The final cohort comprised of 842 participants (mean age $=25.2$ years, SD 5.3; 353 Males, 489 Females).

### 2.3 Ethics

Ethical clearances were obtained from the Human Research Ethics Committee (HREC) of the Northern Territory Department of Health and Menzies School of Health Research, and from the Western Australian Aboriginal Health Ethics Committee. These clearances are granted with approval from appointed Aboriginal experts who assess the research against the NHMRC Values and Ethics: Guidelines for Ethical Conduct in Aboriginal and Torres Strait Islander Health Research (2003). Additional approvals and support were received from local health and education boards, government data-linkage services, land councils and local partner organisations. Informed consent for participation in the study was obtained from participants, and where participants were minors, parent or guardian consent was obtained. As the research was conducted through the CRC-REP managed by Ninti One Ltd, research procedures were also consistent with the Ninti One Protocol for Aboriginal and Torres Strait Islander Knowledge and Intellectual Property (Ninti One 2015).

### 2.4 Interplay wellbeing survey

The Interplay Wellbeing Survey was designed to collect locally relevant, contextual, quantitative data based on the interplay wellbeing framework. A rigorous process was undertaken to develop a survey with cultural and scientific validity (Cairney et al. 2015b). Firstly, a comprehensive review was undertaken of all surveys related to wellbeing or any of its subcomponents that have previously been developed and validated (both scientifically and culturally) for use

with Aboriginal and Torres Strait Islander people. Secondly, all questions and strategies used in comparable research were reviewed, including the Longitudinal Study of Indigenous Children (Biddle 2011; LSIC 2006), the West Australian Aboriginal Child Health Survey (Zubrick et al. 2005), the National Aboriginal and Torres Strait Islander Social Survey (NATSISS 2014), Strong Souls (Thomas et al. 2010), (Haswell et al. 2010), the SeIQOL (Chenhall et al. 2010), the National Indigenous Languages Survey (NILS) (NILS 2005), the Caring for Country questionnaire (Burgess et al. 2009, 2008) and the SF36 (AIHW 2009). The Ngurra-Kurlu was also used to inform cultural indicators (Pawu-kurlpurlurnu and Holmes 2008). Outcomes from these processes were reviewed in a workshop with Aboriginal community researchers from the four participating remote communities, who worked with the research team to draft a purpose designed survey based on the Interplay Wellbeing Framework. This involved modifying existing survey items as necessary, and developing new items to represent areas of the framework where quantifiable measures have not been established. For example, the importance of culture is clear, but robust means for its measurement did not exist.

The final survey reflects in-depth discussions between Aboriginal community researchers, with their knowledge of everyday scenarios faced by people in remote communities, and scientists, with their knowledge about how to represent these scenarios in statistically sound survey questions. Considerable time was afforded to these discussions, with much emphasis on the wording of every single question to ensure that the meaning held true; both in the cross-cultural setting, when translated into local languages, and in different communities nationally. This process was essentially about translating the 'stories' into 'numbers'. Aboriginal community researchers opted to run the survey in English for consistency but translate locally as required. After several waves of reviewing and refining the survey with Aboriginal community researchers and other team members, it was pilot-tested in two remote communities and considered field ready. The final survey was administered on computer tablets using isurvey software by local Aboriginal community researchers and took approximately 45–60 min to complete.

Cultural and scientific validity was established through its on-ground uptake and subsequent data analysis that confirmed the holistic nature of wellbeing and the importance of Aboriginal values of culture, empowerment and community (Cairney et al. in press).

### 2.5 Measures

Survey items that loaded together statistically formed a 'domain' or 'latent trait'. The three latent traits that combined to provide a 'best fit' interrelationship based on the structural equation modelling approach outlined below included School Culture, Aboriginal literacy and English literacy (See Table 1). Survey questions were modelled with a 5-point likhert scale ranging from 0 (Not at all), 2 (Sometimes) 4 (Lots) (Cairney et al. 2015b). Higher scores indicate higher levels of the latent trait.

### 2.6 Statistical analysis

Data analysis was conducted using the statistics package IBM SPSS and Analysis of Moment Structures (AMOS) version 23. Initially, exploratory factor analysis (EFA) using maximum likelihood extraction with promax rotation was conducted. Items were allocated to variables according their factor loadings. Items that did not load well or that decreased reliability beyond an unacceptable level were deleted. Bivariate Pearsons correlations were calculated between each pair of measures and a Structural Equation Model (SEM) was conducted to examine hypothesised relationships between the latent traits. The SEM was validated

**Table 1** Domains (latent traits) and survey items

| Domain (latent trait) | Survey items |
|---|---|
| School culture | Did these things happen at your school? |
| | I leaned in my first language |
| | I learned about my culture |
| | Community supported my school |
| Aboriginal literacy | For your main Aboriginal language, can you |
| | Read? |
| | Write? |
| English literacy and numeracy | Can you do the following in English |
| | Read? |
| | Write? |
| | Fill out forms? |
| | Understand numbers? |
| | Understand tables or graphs? |

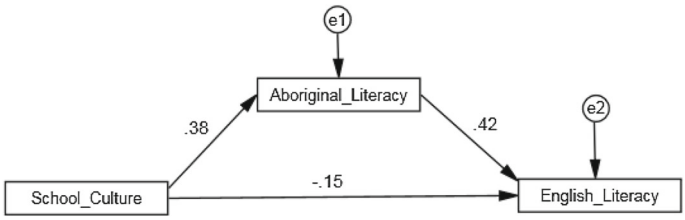


**Fig. 3** SEM model: Chi-Squared ($\chi^2$) = 2.67; The goodness of fit index (GFI) = 0.98; Adjusted Goodness of Fit Index (AGFI) = 0.97; the Competitive Fit Index (CFI) = 0.99; Root Mean Square of Approximation (RMSEA) = 0.05 with PCLOLSE = 0.76; *e* = error. Relationships: SC–AL 0.38 ($p$ = 0.00), AL–EL = 0.42 ($p$ = 0.00), SC–EL = −0.15 ($p$ = 0.00)

by checking a variety of Model Fit Indices, including Chi-Square, Goodness of Fit (GFI), Adjusted Goodness of Fit Index (AGFI), comparative fit index (CFI), and the root mean square error of approximation (RMSEA). Co-variances between indicators loading on the same variable were used to improve model fit, and residuals were examined via standardised residual co-variances. Further validation was conducted to test the invariance of the underlying measurement structures across the four communities. Gender, Age, Language and Remoteness were all controlled for and tested as Confounding Factors. The resultant measurement model is presented in Fig. 3 in the Results section.

## 3 Results

### 3.1 Descriptive frequencies

Table 2 presents the means, standard deviations, and correlations of the main study variables. Univariate skewness values ranged from −1.18 to −0.29 and univariate kurtosis values ranged from −1.501 to 0.169, confirming that the variables show reasonable spread (Kline 2011).

**Table 2** Descriptive frequencies ($N = 842$)

| Variable | Mean | SD | Kurtosis | Skewness | Bivariate correlations | | |
|---|---|---|---|---|---|---|---|
| | | | | | SC | AL | EL |
| SC | 2.01 | 1.20 | −1.36 | −0.33 | – | 0.42 | −0.15 |
| AL | 2.36 | 1.56 | −1.50 | −0.29 | | – | 0.38 |
| EL | 3.12 | 1.02 | 0.17 | −1.18 | | | – |

*SC* School culture, *AL* Aboriginal literacy, *EL* English literacy

**Table 3** shows model fit for SEM with direct effects for each model

| Model | Main model | SC–AL | SC–EL | AL–EL |
|---|---|---|---|---|
| Effects (95% CI) | 0.01 (−0.05, 0.07) | 0.38 (0.30, 0.45) | 0.01 (−.06, 0.09) | 0.37 (0.30, 0.42) |
| $\chi^2/df$ | 2.58 | 1.47 | 2.99 | 2.66 |
| Df | 29 | 4 | 16 | 10 |
| GFI | 0.98 | 1.00 | 0.99 | 0.99 |
| AGFI | 0.97 | 0.99 | 0.97 | 0.8 |
| CFI | 0.99 | 1.00 | 0.99 | 1.00 |
| RMSEA | 0.04 | 0.02 | 0.05 | 0.04 |
| P(close) | 0.80 | 0.85 | 0.53 | 0.64 |

*SC* School culture, *AL* Aboriginal literacy, *EL* English literacy

### 3.2 Bivariate relationships

Bivariance Pearson correlations were calculated with each latent trait to examine the association between variables. As presented in Table 1, all the correlations were statically significant ($p < 0.001$). The results from the SEM showed that School Culture (SC) ($\beta = 0.42$, $p < 0.001$) had a direct effect of Aboriginal literacy (AL), and conversely, AL ($\beta = 0.38$, $p < 0.001$) had a direct effect on English literacy (EL). The direct effect between SC and EL ($\beta = -0.15$, $p < 0.001$ 95% CI −0.22 to −0.06) was also highly significant. The overall indirect effect (SC–AL–EL) was 0.16 ($p = 0.001$, 95% CI 0.12–0.21), and the overall direct effect was −0.15 ($p = 0.001$ 95% CI −0.22 to −0.06). The Total effect for the main model is the combination of the indirect and direct effects, which essentially cancelled each other out and was 0.01 ($p = 0.79$ 95% CI −0.06 to 0.7)

We used confirmatory factor analysis to examine the measurement model. Table 3 reports the fit statistics for the main model. Three further models (Models 1–3) were created to test for mediation and for father validation of the main model. It has found that the main model had 'inconsistent mediation' in that the mediation effects on the dependent variable and independent variable had opposite signs (MacKinnon et al. 2000; Tzelgov and Henik 1991). Inconsistent mediation indicates that when all pathways from school culture are taken into account, there is no overall effect of school culture on English literacy. However, some pathways produce positive effects of School Culture on English literacy. Consequently, the overall effect of school culture on English literacy for those with little or no Aboriginal literacy skills is negative. Interventions that increase Aboriginal literacy will have the subsequent effect of increasing English literacy.

### 3.3 Robustness

In order to examine the robustness of our results we checked for exposure-mediator and mediator-outcome confounding variables, which included the following variables: age, gender, remoteness and number of languages spoken. No evidence of confounding by other variables was found.

### 3.4 Summary

In summary, the results showed that the trait School Culture predicted English literacy via the mediator Aboriginal literacy. An interactive version of this model is represented graphically online at http://crc-rep.com/wellbeingframework/(Interplay Wellbeing Framework 2016).

## 4 Discussion

Our results suggest the key to improving education outcomes in remote Aboriginal communities lies in developing culturally relevant content, a strong engagement with community, and most importantly, first language literacy—Aboriginal literacy—through bilingual education. These data show that a culturally safe learning environment, and particularly the inclusion of bilingual education, to be important determinants of English literacy and numeracy and therefore education outcomes.

From a statistical perspective, the results present a mediated model, whereby the validity of the entire model is established before investigating the causal nature of both indirect and direct pathways (Hayes 2009; MacKinnon et al. 2000; Shrout and Bolger 2002). In this case, Aboriginal literacy plays the mediating role that is the key to the model. That is, students who had gained knowledge of their culture, as well as literacy in their Aboriginal language were better able to become literate in English reading and writing. This pathway is much stronger and statistically significant, unlike the direct pathway that represents attempting to learn English literacy and numeracy without the 'stepping stone' of learning Aboriginal literacy. This suggests that attempting to teach these students English literacy in the absence of Aboriginal literacy represents an educational deficit.

Our findings align with many Australian and international studies showing strong support for the educational benefits of bilingual programs, particularly when taught in early education. In a systematic review, international studies reported improved outcomes for students in bilingual schooling (Silburn et al. 2011). A study of students in the USA with Spanish as a first language quantified the bilingual effect as being "…equivalent to an extra 3 months schooling over a 2 year period." (Greene 1998, n. quoted in Silburn et al. 2011, p. 28). In Mexico it was demonstrated that "…schools with bilingual education narrow the gap in the educational performance of children with mono-lingual mothers versus bilingual and non-indigenous mothers." (Parker et al. 2005, n. quoted in Silburn et al. 2011, p. 107). In the USA it was concluded that "…bilingual education is superior to English-only approaches in increasing measures of students' academic achievement in English and in the native language." (Rolstad et al. 2005, p. 590). A further study in the USA concluded that the best predictor for performance in a second language was the amount of curriculum delivered in the students' first language (Thomas and Collier 1997). Similarly it was found that enhanced or best practices in Transitional Bilingual or Structured English immersion programs accelerated the acquisition of English skills regardless of initial low English proficiency levels (Tong et al. 2008). An earlier meta-analysis of studies on the efficacy of bilingual education

concluded that "…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." (Willig 1985, p. 269).

Bilingual classrooms are fundamentally important in promoting first language literacy. International studies report "growing evidence indicating that bilingual children demonstrate clear advantages on cognitive and conceptual processing tasks, controlled attention skills and meta-linguistic awareness (Bialystok et al. 2005; Silburn et al. 2011, p. 42). The ability of bilinguals to think in more than one language suggests the possibility that bilingualism promotes mental flexibility and greater intellectual capacity reserves." (Silburn et al. 2011, p. 42). Despite this, Australian government support for Aboriginal languages "…remains fragmentary, …and very much subservient to the dominant rhetoric about the need for English skills" (Mckay 2011, p. 1).

Prior to colonisation in Australia, an estimated 250 Aboriginal languages were spoken, many of these with multiple separate dialects (NILS 2005; Simpson et al. 2009). At least half of those have since disappeared, and the majority of the remainder are in a very advanced stage of endangerment (NILS 2005). More recently, a substantial number of community and government initiatives are working to preserve languages in Australia although few of them are focused on bilingual education, especially in remote communities (Marmion et al. 2014). In New Zealand, bilingual education has been credited for helping language preservation and language revitalization (May and Hill 2005) however the challenge is greater in Australia due to substantially greater diversity in culture and language across the continent.

An understanding of one's own culture is a critical part of the process of every child's education, whether they are in a remote community or a cosmopolitan city. Culture can be defined as the "…beliefs and values of an identifiable group of people that have been transmitted through generations, and that are manifest in distinctive symbols, languages and practices" (Dockery 2009, p. 13). Education, whether formalised as in western classrooms or informal, is a vehicle for the transmission of inter-generational knowledge that takes shape through those distinctive symbols, languages and practices.

Aboriginal and Torres Strait Islander Knowledge arises from the routine practices of everyday life and makes these practices possible. It is seen as more about what you do, than what you know; about knowing how, rather than knowing what (Christie 2006). Importantly, Aboriginal Knowledge is fundamentally local, and differing from place to place, as well as being culturally and contextually specific (Christie 2006).

Understanding of the role of culture for Aboriginal and Torres Strait Islander people therefore creates problems for governments where highly prescriptive, nationalised and standardised literacy and numeracy programs are preferred, with a general objective of providing pathways to employment.

Furthermore, substantial differences in culture and learning styles between Aboriginal and Torres Strait Islander groups pose additional challenges for government policy. In general—compared with western traditions—learning and knowledge acquisition styles are considered more immersive, respecting and honouring knowledge sources and the interconnectedness between physical, mental, emotional and spiritual aspects of being (Semchison 2001). This "immersive learning" involves cultural sharing of experiences; music, song, dance, stories; and discussion (Semchison 2001).

These understandings support findings from the development stages of our Interplay project where Aboriginal people clarified that 'teaching and learning' of culturally relevant and local knowledge occurs through the family and community, with only some occur-

ring in formal western education systems (Cairney and Abbott 2014; Nguyen and Cairney 2013). Therein, what is taught in schools can be the least relevant knowledge applied in one's life. Current findings certainly support that western schooling is not directly improving educational outcomes without including a pathway of learning through culture. Moreover, Aboriginal literacy as a concept provides a nexus in the poorly navigated cultural gap that exists in this context—through which each culture can teach and learn from each other.

Our research indicates the importance of Aboriginal children gaining literacy in their first language as an important step towards gaining literacy in English. Students who are literate in their first language have markedly greater success in gaining literacy in a second or third language. One commentator notes "For the small minority of Australians who speak an Indigenous language as a first language, the chances of becoming literate in your mother tongue are very slim indeed. In this regard, the gap is enormous" (Dickson 2015).

The 2011 Census revealed that 11% of Aboriginal and Torres Strait Islanders people spoke an Indigenous language at home; of those about 13% of people aged 25–44 spoke an Aboriginal language at home; and this figure fell to about 10% of children aged 14 and under. These figures may well reflect the effects of successive governments' policies towards bilingual education at primary years. Those aged 25–44 were more likely to have experienced a bilingual classroom of some sort, whereas those younger students have been denied that opportunity by governments, officially since 2008, but in practice much earlier than that.

For Aboriginal and Torres Strait Islanders students to gain literacy in their first language or "mother tongue", then some form of bilingual education is essential in their early years of schooling. The theoretical foundation for this approach is further discussed as being the "…attainment of literacy skills in one's first language was an important determinant of success in learning to read and write in a second language" (Devlin 2005, p. 5).

Our results strongly affirm the importance of learning Aboriginal literacy in order to learn English literacy, and signify the importance of developing robust and creative means to overcome the challenge of resourcing bilingual programs in this culturally diverse nation.

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