

# Stoking the Fires of Pre-service Educators through Aboriginal and Torres Strait Islander Ways of Learning

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## ABSTRACT

Great emphasis has been placed on embedding Indigenous knowledges and perspectives in western-based education systems and pedagogical practices. This study discusses the results of a four-month program for pre-service teachers that targeted best-practice Aboriginal and Torres Strait Islander pedagogy. The program challenged existing notions of western-based teaching and learning through innovative approaches to the design of learning. Specifically, the program has been underpinned by the 8 Ways Aboriginal Pedagogical Framework which focuses on interconnected learning experiences which have been developed through Aboriginal systems, protocols, values and processes. The program embedded authentic practices aimed at empowering pre-service teachers. The research design explored four dimensions of empowerment relating to embedding Aboriginal and Torres Strait Islander perspectives: knowledge, understanding, perceptions and attitudes. Quantitative survey data was gathered pre and post program and paired samples *t*-tests were conducted and found all four dimensions of empowerment improved significantly following the program ( $p < 0.05$ ). The results of this study demonstrate the effectiveness of teaching, learning and assessing through the lens of the 8 Ways Aboriginal Pedagogical framework to increase teacher agency to become more culturally responsive educators.

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## INTRODUCTION

Embedding Aboriginal and Torres Strait Islander knowledges and perspectives within every Australian child's learning journey is foundational to embracing First Nations cultures, promoting diverse worldviews and paving the way towards self-determination for First Nations peoples and communities (Bishop, Vass, & Thompson, 2019). The Australian National Curriculum mandates embedding Aboriginal and Torres Strait Islander knowledges and perspectives is a cross curricular priority for all Australian schools and teachers (Australian Curriculum Assessment and Reporting Authority, 2012). Embedding promotes knowledge, understanding and practices through valuing shared experiences and partnerships in learning. Within this curriculum framework, intercultural understanding is listed as a General Capability highlighting the need for students to work from a position of reciprocity with other cultures and beliefs and to recognise differences, create connections and cultivate mutual respect.

The Australian Curriculum aims to promote reconciliation with Aboriginal and Torres Strait Islander peoples by promoting active and informed citizens who understand and acknowledge the value of First Nations cultures, and possess the knowledge, skills and understandings to contribute to, and benefit from, reconciliation for all Australians (Australian Curriculum Assessment and Reporting Authority, 2012). Clearly, teaching and learning practices need to reflect these priorities to provide better culturally reflective learning environments for Aboriginal and Torres Strait Islander children and young peoples. In addition, embedding culturally reflective learning will bridge the divide between non-Indigenous peoples' conceptualisation of First Nations cultures and promote their ability to work with diverse communities.

The Alice Springs Mparntwe Education Declaration (Ministerial Council on Education Employment Training and Youth Affairs, 2019) emphasises the Australian Government's commitment to embedding Aboriginal and Torres Strait Islander histories and cultures within the school curriculum. This Declaration highlights reciprocity as a central dimension to self-determination (Bishop et al., 2019; Williamson & Dalal, 2007). Mparntwe strives to build notions of shared responsibilities in promoting culturally responsive citizens which is operationalised through strong community-level partnerships to improve educational outcomes for all young Australians (Ministerial Council on Education Employment Training and Youth Affairs, 2019). It is therefore fundamental for teachers and school leaders to promote cultural safety and responsiveness by working with Aboriginal and Torres Strait Islander Elders and Communities. This same cultural responsiveness affords teachers both the capacity and disposition to respect and be responsive to all cultures and beliefs, to recognise differences, create partnerships and cultivate mutual partnerships.

The cultural interface describes the intersection of western knowledges with Aboriginal and Torres Strait Islander domains of knowing, being and doing. Nakata (2007, 2010) identified this interface as an area with competing and conflicting discourses and where communities are grappling with the conceptualisation of Indigenous Knowledge systems and the risks to the integrity of these systems within the western education system. As teachers navigate embedding Aboriginal and Torres Strait Islander perspectives into the curriculum, they seek the safe ground and focus on curriculum and specifically what they need to teach. In focussing on content teachers can fail to see the importance of following community protocols and building relationships and trust within their community. The conflicting discourses at the cultural interface can appear so vast that teachers become hesitant to embed perspectives and also struggle to improve their own cultural competence. This approach can result in a superficial understanding of Aboriginal and Torres Strait Islander histories and cultures and does little to close the gap between western and Aboriginal and Torres Strait Islander knowledge and information systems. There are considerable limitations to the content-driven approach in that if the principles of effective learning design are followed then pedagogy, assessment and environment, including the teachers' knowledge and disposition, must be considered as essential components since they have a powerful influence on learning outcomes (Biggs, 1999). Additionally, such a focus on curriculum and the drive for content reduces the common ground at the cultural interface for educators to teach and leaves little room for innovation and real change towards reconciliation.

### ***Culturally responsive teaching and learning***

The 8 Ways Aboriginal Pedagogical Framework (Yunkaporta & Kirby, 2011) connects the elements of process, protocol, values and systems through which teaching and learning can be facilitated to eight interconnected teaching pedagogies. These pedagogies involve the use of narratives, visualisation, hands-on, symbols and imagery, land-based, logical, scaffolded and real-life applications which together enhance learning outcomes that have meaning and purpose and foster a connection to land, people and community. There is significant scope to build contemporary curricula and teaching strategies around the 8 Ways Aboriginal Pedagogical Framework thereby enriching learning experiences for all students.

Co-constructing educational programs with community is crucial to respectfully, meaningfully and effectively embedding Aboriginal and Torres Strait Islander perspectives. This approach enhances

understanding and signifies the importance of Aboriginal and Torres Strait Islander peoples to ensure cultural validity and a sense of connectedness (Louth, Wheeler, & Bonner, 2019). Educational aspiration programs developed in collaboration with community have been found to have positive effects on self-efficacy and learning outcomes for Aboriginal and Torres Strait Islander youths. Long lasting and deep reaching impacts on educational outcomes and the engagement of Aboriginal and Torres Strait Islander children in education are centred on programs that value culture and identity (Louth, 2013).

The Universal Design for Learning (UDL) is a framework which aims to improve and optimise teaching and learning through the design of learning goals, assessment tasks and teaching strategies which cater for the needs of learners. UDL values a holistic and goal directed approach that offers multiple means of connection to engage, explore, explain and elaborate on content and further reflect on learning (Burgess, 2019; CAST, 2020). The UDL concept of learning being an integrated and connected experience has many similarities with Ernie Grant's Indigenous Knowledge Framework (1997) in that learning should be related to achieving goals that have meaning, purpose and a connection to land, people and community. Further research has highlighted the importance of social interaction, relationships, culture and identity and developing connections to place and time as elements that are crucial to Aboriginal ways of learning (Burgess, 2019; Yunkaporta & Kirby, 2011).

### ***Teacher Efficacy***

Several ways to integrate Aboriginal and Torres Strait Islander perspectives into schools through the environment, the pedagogy and the curriculum have been suggested. In practice, teachers still struggle with, or avoid including Aboriginal and Torres Strait Islander perspectives within their classrooms, the reasons for this have been investigated by several researchers. One such study conducted in New South Wales found teachers did not include Aboriginal and Torres Strait Islander perspectives because they felt they did not know the rules relating to Aboriginal and Torres Strait Islander social norms, were worried about offending people, and just wanted to find safe ground for themselves professionally (Western NSW Region RAET Team, 2010). This unfortunately is a common feature of western education systems that requires critical evaluation.

A study by Cummins, Gentle and Hull (2008) found that many teachers have the appropriate pedagogical skills and attitudes to embed Aboriginal and Torres Strait Islander perspectives, but are hesitant to do so as they feel they lack the knowledge and expertise needed to do this effectively. Previous studies (Andersen & Walter, 2010; McRae, 2000, 2002) have identified three key elements for success in teaching and embedding Aboriginal and Torres Strait Islander perspectives, namely cultural recognition and support, skill development and participation for individuals and the community. Clearly, these findings along with those of the Regional Aboriginal Education Team (RAET) report indicate that further research and professional development are needed to provide teachers with a wide range of methods to integrate Aboriginal and Torres Strait Islander culture into their lessons. Further research has found teachers identified a lack of knowledge and understanding of Aboriginal and Torres Strait Islander issues, along with a lack of confidence to address these issues as their main barriers to embedding Aboriginal and Torres Strait Islander perspectives in their classroom learning experiences (Louth & Jamieson-Proctor, 2014).

This project builds on existing research around teacher and pre-service teacher capability of embedding Aboriginal and Torres Strait Islander perspectives in the curriculum (Louth & Jamieson-Proctor, 2014). Many classroom teachers have had to shoulder the responsibility to plan and implement opportunities for children to learn about Aboriginal and Torres Strait Islander ways of knowing, being and doing through the curriculum with limited opportunities for professional development to enable them to do so effectively, comfortably and confidently.

### ***What are the Issues around Embedding?***

Studies demonstrate teachers face many difficulties embedding Aboriginal and Torres Strait Islander perspectives through the existence of perceived barriers such as time and curriculum demand coupled with a lack of specialist knowledge (Louth & Jamieson-Proctor, 2014). These persistent issues have grown over time with several studies identifying the lack of embedding Aboriginal and Torres Strait Islander perspectives meaningfully in the curriculum (Gentle & Hull, 2008; Andersen & Walter, 2010).

If embedding Aboriginal and Torres Strait Islander perspectives is to be meaningfully integrated into the curriculum then it is imperative educators are able to cultivate culturally responsive pedagogical practices. Culturally responsive practice engages teachers in perspective taking (Warren, 2018) to allow their understanding of the sociocultural context relating to where and who they will teach to develop further. These practices need not only be concerned with the “what” of teaching but equally importantly with the “how” and “why” in terms of “how to teach” and “how to assess” and “why it is necessary”. The UDL framework uses similar terminology as this approach strives to integrate and connect learning for students in order to develop a holistic understanding of the specific teaching and learning context (Burgess, 2019). In shifting their focus to develop an understanding of the sociocultural context of their learners, educators can meaningfully connect with Aboriginal and Torres Strait Islander peoples, their knowledges, understandings, skills and values to truly embed perspectives in everyday practices in order to work towards reconciliation. If embedding Aboriginal and Torres Strait Islander perspectives in education is crucial to achieving reconciliation in Australia, then it is vital educators consider a holistic approach that foregrounds the how and why in lesson design and delivery.

This research acknowledges existing perceived teacher’s barriers to embedding Aboriginal and Torres Strait Islander perspectives. This study is unique in that it draws from Aboriginal Knowledge Frameworks to refocus on the how of teaching. It is envisaged this focus will enable pre-service teachers to develop the knowledge, skills, understandings and dispositions to foster personal development, social skills and connections to Aboriginal and Torres Strait Islander communities, which are necessary for cultural awareness and essential to embedding Aboriginal and Torres Strait Islander perspectives in their teaching and learning practices. This research contributes to new pedagogical knowledge and practice by bringing together the UDL framework relating to content, process, product and environment with the 8 Ways Aboriginal Pedagogy and connects with community in the planning and delivery to increase pre-service teacher efficacy. This paper reports on the effectiveness of such an intervention in a pre-service teacher education program.

## **METHODS**

### ***Participants***

All participants were students enrolled in a one-semester capstone pre-service teacher education course on Aboriginal and Torres Strait Islander perspectives in learning and teaching, across multiple campuses of a regional University in Queensland, Australia. As a compulsory capstone course, it results in the culmination of a teaching degree for both Undergraduate and Masters’ Education programs that cover Early Childhood, Primary and Secondary contexts. Pre-service teachers undertaking the course were asked to complete a pre and post course survey, of these 183 completed the pre-course survey whilst 51 completed the post course survey. A unique code identifier was used to match individual student responses across time for both pre and post surveys so that the impact of the course design on student learning outcomes could be compared.

### ***Procedures***

The study gathered quantitative data pre and post intervention through a purposely constructed survey using a 5-point Likert scale (1 Almost none/Not at all, 2 Little bit/Some, 3 Reasonable, 4 Quite a lot, 5 Extensive/ly). The survey instrument sought to measure changes across three dimensions in participants’

knowledge, perceptions and attitudes relating to embedding Aboriginal and Torres Strait Islander perspectives in their teaching and learning practice. Each dimension was explored through several survey items. Tables 1, 2 and 3 outline the survey questions (domains) for each dimension; knowledges and understandings, perceptions and preparedness attitudes.

**Table 1.** Domains of knowledges and understandings dimension

Domain	Question
Histories	How would you rate your knowledge and understanding of Aboriginal and Torres Strait Islander histories?
Culture	How would you rate your knowledge and understanding of Aboriginal and Torres Strait Islander culture?
Teaching & Learning Strategies	How would you rate your knowledge and understanding of Aboriginal and Torres Strait Islander teaching and learning strategies?
Observing mentors embedding	How would you rate your experience in observing Aboriginal and Torres Strait Island perspectives embedded in teaching and learning practices?
Embedding in own lessons	How would you rate your experience to date in embedding Aboriginal and Torres Strait Island perspectives in teaching and learning practices?

**Table 2.** Domains of perceptions and preparedness dimension

Domain	Question
Knowledges & Understandings	How well has your teacher education program given you the knowledge and understanding of Aboriginal and Torres Strait Islander perspectives to incorporate into your teaching and learning practices?
Embed in classroom	How well has your teacher education program prepared you to embed Aboriginal and Torres Strait Islander perspectives in your teaching and learning practices?
Reconciliation in classroom	How well has your teacher education program prepared you to support reconciliation for your students?
Reconciliation in society	How well do you perceive your efforts in the classroom will help advance reconciliation for Australian society?

**Table 3.** Domains of attitudes dimension

Domain	Question
Enjoy embedding	To what extent do you enjoy embedding Aboriginal and Torres Strait Islander perspectives into your teaching and learning practices?
Confidence to embed	To what extent are you confident to embed Aboriginal and Torres Strait Islander perspectives within your teaching and learning practices?

### **Intervention**

The intervention program spanned 10 weeks and was designed to run within a specific capstone pre-service teacher education course. The course was developed using the 5E pedagogical approach to teaching

and learning (Skamp & Peers, 2012) which is based on an inquiry-orientated teaching and learning model. Using this model, teaching and learning progressed through five phases: Engage; Explore; Explain; Elaborate; and Evaluate (Bybee, 1997). In addition, the learning experiences and assessment tasks were constructed and aligned with the 8 Ways Aboriginal Pedagogical Framework (Yunkaporta & Kirby, 2011). The planning and design of the course, particularly in relation to the "how" of teaching, was explicitly modelled to students to provide them with deeper understandings of how they might apply their knowledge in their practice using the 8 Ways framework. Learning activities and teaching strategies were developed that modelled the 8 Ways Framework, whilst assessment at each phase involved the students demonstrating their understandings through the 8 Ways framework. For example, the *Engage* phase of the course acted to capture the interest of the students by outlining historical events and dominant discourses relating to Aboriginal and Torres Strait Island people and education. Quizzes were used as a form of non-verbal assessment to elicit students' understandings so that they could make connections between what they thought they knew prior to the course.

The *Explore* phase involved storytelling by Aboriginal and Torres Strait Island Elders and community members where students participated in a common set of experiences that they could later use to analyse and further their understanding of the perspectives of Aboriginal and Torres Strait Islander people. The *Explain* phase enabled students to begin to understand why voice, treaty and truth-telling matter and how these might impact education and inform their teaching and assessment practices. Assessment involving learning maps and community and land links helped students to develop a greater awareness of the importance of following protocols for respectful dialogue to work respectfully with community.

The *Elaborate* phase provided students with the opportunity to apply what they had learnt about "how" to teach, to their specific educational setting. In this phase, students devised ways to apply their newly acquired understandings to their own classroom practice. Students were required to use symbols and images and to deconstruct and reconstruct their ideas within the assessment task.

The final *Evaluate* phase provided students with the opportunity to reflect on their new understandings in order to think in non-linear ways in relation to the "how" and "why" of teaching. Assessment was in the form of storytelling through a video log where students were encouraged to think differently and creatively and to share their ideas and reflections about embedding Aboriginal and Torres Strait Islander perspectives into their teaching practices.

### **Data Analysis**

All survey data was coded into SPSS (IBM, Version 27) for analyses. The 11 survey items were not aggregated using statistical factorial reduction due to the relatively low number of complete data, where the post-survey responses could be matched with the pre-survey responses. Paired samples t-test were used to explore the differences in pre and post intervention survey results. Analysis investigated whether the barriers and enablers that exist for pre-service teachers regarding their knowledge, perceptions and attitudes to embed Aboriginal and Torres Strait Islander perspectives were improved following the intervention. Further analysis explored the effect of participating in the intervention on teaching efficacy in terms of embedding Aboriginal and Torres Strait Islander perspectives in their everyday teaching practice. Means, standard deviations were calculated for all domains. Significance was set at  $p < 0.05$ . Cohen's *d* Effect sizes were also calculated, with a small effect set at .2, medium at .5 and large .8 (Cohen, 1988).

## **RESULTS AND DISCUSSION**

### **Result**

Table 4 provides the dimension, item domains and data analysis results of the survey pre and post intervention.

Table 4: *Pre-service Teacher Efficacy to Embed Aboriginal and Torres Strait Islander Perspectives*

Dimension	Survey item domains	Mean		SD	Sig. (2-tailed)	Cohen's <i>d</i>
		Pre	Post			
Knowledge & Understanding	Histories	2.36	3.28	.996	.000	.465
	Culture	2.19	3.33	1.018	.000	.563
	Teaching & Learning Strategies	1.97	3.44	.910	.000	.729
	Observing mentors embedding	1.39	2.61	1.245	.000	.498
	Embedding in own lessons	1.44	2.61	1.183	.000	.499
Perceptions & Preparedness	Knowledges & Understandings	2.28	3.33	1.094	.000	.489
	Embed in classroom	2.17	3.33	1.183	.000	.5
	Reconciliation in classroom	2.19	3.39	1.117	.000	.54
	Reconciliation in society	2.64	3.50	1.073	.000	.398
Attitudes	Enjoy embedding	3.06	3.67	.964	.001	.292
	Confidence to embed	2.08	3.36	1.162	.000	.554

### **Discussion**

The aim of this research was to evaluate the impact of a pedagogical intervention program on pre-service teachers' knowledge, perceptions, attitudes and confidence towards embedding Aboriginal and Torres Strait Islander perspectives in their learning and teaching practices. The intervention empowered pre-service teachers to embed Aboriginal and Torres Strait Islander perspectives in their learning and teaching practices. The intervention focused on improving their knowledge, perceptions, attitudes and confidence regarding embedding in order to facilitate the development of culturally responsive pedagogical practices in their teaching and learning environment.

The intervention was created using the Universal Design for Learning framework with a particular slant towards the strategic networks relating to the "how" of learning and the affective networks associated with the "why" of learning. In planning for the "how" of learning, the 8 Ways Aboriginal Pedagogy Framework was used in the design of the learning experiences and the assessment elements of the course. The 8 Ways framework allowed pre-service teachers to expand their teaching strategies and develop ways for their learners to explore, examine and represent knowledge and understanding through a variety of contexts and mediums. In addition to the learning experiences, course assessment tasks were aligned with the 8 Ways framework ensuring tasks were authentic and had meaning for the learners, and in doing so, acted to extend Burgess' (2019) findings relating to building Aboriginal ways of learning to assessing learning through the 8 Ways. This holistic approach enabled pre-service teachers to develop an understanding of how they might teach, learn and assess through Aboriginal ways of knowing, being and doing. The success of the intervention in developing pre-service teachers' knowledge and understanding of how to embed is demonstrated in the statistically significant results for knowledge, understanding and preparedness to embed Aboriginal and Torres Strait Islander perspectives in their teaching and learning practices. The findings of this research support the notion of the importance of building cultural validity, through learning

experiences as identified by earlier studies (Louth, Wheeler & Bonner, 2019; Yunkaporta & Kirby, 2011). This study further demonstrates the positive impact culturally responsive pedagogy has on the learning outcomes of students and how it enhances students' perceptions, attitudes and empathy for the students they teach (Warren, 2018).

When planning for the "why" of learning it was crucial to connect to the pre-service teachers affective network by tagging the need for action to embed Aboriginal and Torres Strait Islander perspectives with emotional significance to the learner. To achieve this Elders and Community shared their stories and aspirations so that pre-service teachers could gain a broad range and deep insights into their experiences and understand the necessity of following existing protocols and building connections within their local contexts. These experiences provided pre-service teachers with the opportunity to consider other points of view as being valid and knowledgeable and challenged many of their pre-existing assumptions around embedding Aboriginal and Torres Strait Islander perspectives into their teaching and learning practices. Utilising perspective taking within the program, supports previous studies which highlight the need for perspective taking to develop knowledge, skills and empathy in teaching practices (Warren, 2018; Gay, 2013). The culmination of the learning experiences and pedagogical practices employed in the program resulted in statistically significant differences in pre-service teachers' knowledge, understanding and perceptions pre and post intervention. These significant differences provide further support for the effectiveness of the UDL framework to cater for the diverse needs of learners (CAST, 2020; Burgess, 2019). When the UDL framework is combined with Aboriginal ways of knowing, being and doing, the positive impact on learners significantly adds weight to the importance of the 8 Aboriginal Ways pedagogical framework (Yunkaporta & Kirby, 2011).

The process of consultation and active involvement of Elders and community members in the development and delivery of the intervention was modelled to pre-service teachers so that they could plan how they might connect with their own local communities. Pre-service teachers followed community protocols to create their own Acknowledgement to Country which they submitted to the teaching team. They were given personalised feedback to enable them to modify their work to ensure protocols were followed respectfully and appropriately, before sharing it with their peers and their students. The opportunity for formative feedback before publicly displaying their work provided pre-service teachers with a culturally safe space to test out their ideas and rectify any errors without fear of causing offence or being seen as racist by others and causing shame. This consideration supports the need for teachers to understand the cultural interface that exists for Aboriginal and Torres Strait Islander peoples in order to work within this space (Nakata, 2010). In fact, it can be said that the significant differences found in pre-service teachers level of confidence pre and post intervention can be attributed to learning in this culturally safe space as well as connecting with Elders and Community to develop greater insights into their perspectives relating to teaching and learning.

Ultimately, the results of this study indicate the intervention was successful as significant differences with large effect sizes in knowledge; understanding; perceptions relating to preparedness; confidence to embed; attitudes towards embedding; and the willingness to actively do so were demonstrated. In order to confirm the success of the intervention the addition of a control group that was not exposed to the intervention would improve the reliability of the results obtained here; as the influence of variables such as time, exposure to experiences external to the intervention and variables related to the instructor might be excluded.

## CONCLUSION

The intervention aimed to enhance pre-service teacher knowledge, understandings, perceptions, preparedness, confidence and attitudes in order to empower them to embed Aboriginal and Torres Strait Islander perspectives into their teaching and learning practices. For teachers to embed these values and



understandings through pedagogy and assessment, not just content, and to consider their own philosophy and ability to enact culturally responsive pedagogy are two crucial elements that form the foundations of successfully embedding Aboriginal and Torres Strait Islander perspectives in Australian education systems.

It is expected as the intervention becomes part of practice, the pre-service teachers that emerge as a result, will seek to foster a culturally supportive learning environment where all young Australians can thrive educationally and in all facets of life. Undeniably, there is considerable scope to build localised community connectedness and partnerships based on reciprocity, for the benefit of students and teachers as well as Elders and their communities. The challenge remains for pre-service teachers as they enter the teaching profession to engage respectfully with community. To do so requires knowledge, understanding, self-reflection and confidence in order to build reciprocal relationships with Elders and local community and make a positive impact on reconciliation in Australian society. Adopting such a holistic approach facilitates meaningful teaching and learning experiences that promote an empowering and culturally safe learning environment for teachers and their students at the cultural interface. Increasing teacher agency to become more culturally responsive will foster greater connections with Aboriginal and Torres Strait Islander students, families and communities while enhancing learning outcomes for all students.

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