

RISE Paper Series

PAPER 1: LITERATURE REVIEW

How have Indigenous high school education outcomes been conceptualised and operationalised in Australia?



The Aurora Education Foundation is an Indigenous organisation that supports Aboriginal and Torres Strait Islander students to realise their full education and employment potential – whether it is completing Year 12 or achieving a PhD from Oxford.

Through our interconnected programs and pathways, we walk with students from high school through to university and the workplace, redefining Indigenous educational and employment success.

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Executive summary

BACKGROUND

The Redefining Indigenous Success in Education (RISE) Project is a 5-year Aboriginal and Torres Strait Islander education initiative delivered by the Aurora Education Foundation (Aurora), funded by the Paul Ramsay Foundation and developed in partnership with the Centre for Social Research Methods at the Australian National University (ANU). The RISE Project is: (1) a large-sample, longitudinal and quasi-experimental evaluation of three Aurora high school program models; (2) grounded in Indigenous student and family definitions of 'success' in education; and (3) overseen by an Indigenous Data Governance framework.

This review is the first step in a research process that seeks to identify how Indigenous students and families define 'success' in education and will result in the development of a RISE outcomes framework and data collection instruments. This review considers how Indigenous education outcomes have been conceptualised (defined) and operationalised (measured) in Indigenous education policy and literature. This review will provide a foundation for subsequent research activities by providing context for the interpretation of existing data and guiding approaches to primary data collection which best capture Indigenous student and family perceptions of 'success' in education.

The premise for this work is simple: to support Indigenous students to thrive, education policies and institutions must reflect Indigenous aspirations, values, and worldviews. Current definitions and measures of 'success' in education policy have been shaped with limited Indigenous input and perpetuate harmful deficit discourse. This translates into low teacher expectation and streaming practices, and promotes policy focused on how Indigenous students can 'fit in' with existing educational practices, with the risk of eroding Indigenous cultural identities. The voices of Indigenous students and families must be centred in the discussion of what educational 'success' looks like to displace deficit discourses, harness the many strengths that Indigenous students bring to the learning process, and give effect to the right of Indigenous peoples to self-determination in education.

METHOD

This review surveyed literature and policy from Australia, and considered literature from Aotearoa New Zealand and Canada, to examine how Indigenous high school education outcomes have been conceptualised and operationalised, the processes involved, and whether Indigenous people were included. This review also considers a range of key debates in relation to different concepts and measures of 'success' in education. The review includes a table in the Appendix which summarises concepts of educational success, measures and indicators used in each paper, and whether the paper adopted an Indigenous methodology.

FINDINGS

Several important findings have emerged from this review. Amongst the substantial body of literature considered, there were few examples of Australian research which investigated Indigenous student and family perceptions of 'success' in education, particularly in the urban context.

The review found that Indigenous education outcomes in literature and policy fall into three themes: academic and career achievement; social and emotional wellbeing (SEWB); and cultural identity.

Current Australian Indigenous education policy is dominated by a focus on statistical parity across a narrow set of academic outcomes, including attendance and Year 12 completion. This approach perpetuates deficit discourses and obscures unique Indigenous aspirations in education.

In relation to SEWB, there is increasing interest in adopting measures of wellbeing for Australian students to support their overall educational achievement. However, further work is required in the education context to consider how psychological constructs that underpin measures of SEWB might differ for Indigenous students.

In relation to cultural identity, it was observed that to give full effect to Indigenous self-determination in education, Indigenous cultural identity should be seen as a standpoint from which to develop concepts and measures of 'success', rather than another discrete outcome domain.

A range of challenges and risks were identified in conceptualising and operationalising education outcomes from an Indigenous standpoint, including the risk of exposing Indigenous communities to further layers of surveillance and diminishing cultural meanings through quantification. Alongside these challenges and risks, it was noted that the RISE Project has the potential to create opportunities for greater inclusion of Indigenous priorities in education policy.

OPPORTUNITIES FOR THE RISE PROJECT

The RISE Project presents an important opportunity to conceptualise and operationalise 'success' in education from an Indigenous standpoint and address several critical gaps in the literature. The creation of a RISE outcomes framework and data collection instruments grounded in Indigenous perspectives, values and aspirations – and the eventual generation of a large-sample and longitudinal dataset shaped by these instruments – has the potential to be a powerful tool for Indigenous families, communities and organisations, as well as schools and policy makers, in the effort to advance Indigenous goals for education reform and Indigenous self-determination in education.

1. Introduction

THE REDEFINING INDIGENOUS SUCCESS IN EDUCATION PROJECT

The Redefining Indigenous Success in Education (RISE) Project is a 5-year Indigenous education initiative delivered by the Aurora Education Foundation, funded by the Paul Ramsay Foundation and developed in partnership with the Centre for Social Research Methods at the Australian National University (ANU). The RISE Project has three core components. First, the RISE Project will involve a longitudinal and quasi-experimental evaluation of three nested Indigenous high school program models delivered to approximately 800 Indigenous students across 5 school clusters in NSW. These program models include various combinations of academic support and cultural enrichment activities and will be delivered ‘outside the school gate’ in urban and regional areas of NSW. Second, this evaluation will be grounded in definitions of ‘success’ in education which reflect Indigenous perspectives, values and experiences. Third, the data generated by this evaluation will be managed through an Indigenous Data Governance framework to ensure that data management practices uphold the rights and interests of individuals and communities and promote Indigenous aspirations for education reform and self-governance.


This literature review is the first step in a research process aimed at understanding what ‘success’ in education looks like for Indigenous students, families and communities. It asks: ‘How have Indigenous high school education outcomes in Australia been conceptualised (defined) and operationalised (measured) in the literature?’ This literature review will guide subsequent research activities on the same topic, including qualitative interviews with students, parents/carers and former students, participatory diagramming with students, and secondary analysis of existing relevant datasets, including the Longitudinal Study of Indigenous Children (LSIC). These research activities will support the development of a RISE outcomes framework and data collection instruments which will underpin the RISE evaluation.

DEFINING ‘SUCCESS’ IN INDIGENOUS EDUCATION

The concept of ‘success’ – particularly in the field of Indigenous education – is inherently complex and difficult to define, as it means different things to different people and groups. ‘Success’ can generally be equated to ‘positive outcomes’. But what constitutes a positive outcome is contingent upon a person’s social and cultural standpoint. The design of Indigenous education policy has largely occurred from the dominant social and cultural standpoint, with limited Indigenous input and control, and has consistently fallen short in measuring what matters to Indigenous students, families and communities. While several policies in recent years have sought to improve the academic outcomes of Indigenous students, and in some cases have successfully done so, these policies have failed to prioritise the values, goals, and aspirations of the very communities they claim to serve. The Australian Government’s concerted emphasis on ‘Closing the Gap’ in academic, attendance, and retention outcomes between Indigenous and non-Indigenous students has restricted the conversation on Indigenous education almost entirely to how Indigenous students compare to their non-Indigenous peers, and why they are failing to achieve the same outcomes despite various policy interventions. This narrative is corroborated by dichotomous descriptions of Indigenous and non-Indigenous outcomes in NAPLAN¹ and ACARA² datasets.

¹ National Assessment Program – Literacy and Numeracy

² Australian Curriculum, Assessment and Reporting Authority



There are a range of institutional and systematic factors within the schooling system which restrict the capacity of Indigenous students to fulfill their educational potential. There is often a mismatch between the needs, values, and expectations of Indigenous students and their families, and the values and expectations of schools (Whitley 2014; Moodie, Vass & Lowe 2021). This is compounded by fear and distrust from Indigenous students and their families towards educational institutions, which they often see to be perpetuating colonial and assimilatory agendas, including through a lack of Indigenous teaching staff; non-Indigenous discourses and assumptions; domination of non-Indigenous voices; overt and covert racism and discrimination and promotion of non-Indigenous interests (Moodie, Vass & Lowe 2021; Whitley 2014; Vass 2012; Parkinson & Jones 2019).

Education policies often fail to recognise or address the multiple institutional factors which contribute to Indigenous exclusion in education and instead focus on perceived Indigenous deficits. Vass (2012) observes that underdeveloped language and literacy skills, lack of attendance, poor health and nutrition are commonly cited as reasons for Indigenous students' failure to thrive in school. As Price (2012) points out, the focus has continually been on how Indigenous students, parents, families, and their culture are problematic, rather than the education system per se. Indigenous education policy often neglects to consider that schools, curricula (including coursework, assessments, tests, etc.), and the education system as a whole may not align with Indigenous perspectives, experiences, values, knowledges, strengths, needs, preferences and aspirations (Price 2012; Moodie, Vass & Lowe 2021; Lowe & Yunkaporta 2013; Whitley 2014; Lowe et al. 2014; Perso 2012). Policies which focus on how Indigenous students can better fit into the education system contribute to a schooling environment that is often hostile towards Indigenous students and families and low teacher expectations for Indigenous students (Sarra 2005). This focus also neglects the possibility that Indigenous students might offer a unique set of strengths to the learning process and risks eroding Indigenous cultural identities in the classroom (Stronger Smarter Institute 2014).

Listening to the views, needs and aspirations of Indigenous students, parents/carers, families, and communities as to what 'educational success' means to them is crucial to displacing deficit discourses and establishing an educational environment that supports Indigenous students to thrive. The Aboriginal Voices project systematically reviewed more than 13000 publications on the experience of Indigenous students in school and concludes that Indigenous voices are not counted in Indigenous education (Moodie, Vass & Lowe 2021). Donovan (2015) similarly argues that efforts to improve outcomes for Indigenous students are typically driven by educational researchers, policymakers and teachers, and that little work has explicitly focussed on accessing the voices of Indigenous students. Further, research which does include Indigenous student voices has predominantly occurred in remote settings, despite urban Indigenous students making up the majority of the Indigenous student population (Moodie et al. 2021; Guenther et al. 2015).

AIMS, SCOPE AND METHOD

While previous efforts have been undertaken to systematically review the literature on Indigenous education outcomes (see Moodie et al. 2021), the authors of this literature review are not aware of any literature which comprehensively maps concepts and measures of ‘success’ in Indigenous education. This literature review explores how Indigenous education outcomes have been conceptualised and operationalised in government policy, academic literature and grey literature in Australia, with consideration given to Aotearoa New Zealand and Canada. Importantly, it also explores the processes through which these concepts and measures have been elicited and whether Indigenous students and families were involved. This literature review will guide subsequent research activities by providing context for the analysis and interpretation of existing data (such as through secondary analysis of existing datasets) and identifying suitable approaches for conducting primary data collection which captures Indigenous definitions of ‘success’ in education (such as through qualitative interviews and participatory diagramming). Concepts and measures of success which are relevant to the evaluation of the RISE Program are prioritised, though literature on subject matter which is not directly relevant to the RISE Project – such as remote education or school curriculum – is considered for additional context.

Search terms used for the literature scan included: “Indigenous education”, “educational success”, “education outcomes”, “measuring education outcomes” AND “Indigenous”. Papers were then read to identify concepts, measures and indicators. Papers that focused on education programs in primary school and tertiary education were manually excluded. The review includes a table in the Appendix which summarises how Indigenous educational success has been conceptualised and operationalised in the literature. The process for developing this table involved identifying the concept of educational success, measures and indicators used in each paper. The table also identifies whether the paper adopted an Indigenous methodology where it was stated.

There are two overlapping theoretical motivations for this work. First, Walter and Andersen (2013) observe that Indigenous data is situated within the social, cultural and historical context of settler-colonial Australia. The authors of this review recognise that existing Indigenous education data is created and interpreted within the context of an education system which perpetuates broader patterns of Indigenous socioeconomic inequality and exclusion. Drawing on Walter and Andersen (2013), the authors recognise the need to develop an Indigenous statistical agenda within education which prioritises Indigenous perspectives in the creation, interpretation and use of Indigenous education data and which supports Indigenous aspirations for education reform and self-governance. Second, and relatedly, Taylor (2008) observes that the construction of official statistical measures of the good life are motivated by the objectives of government policy making rather than reflecting Indigenous peoples’ priorities. Taylor argues for the need to create a ‘recognition space’ – defined as the intersection between government reporting frameworks and notions of wellbeing and Indigenous values and practices – to enable Indigenous priorities to be factored into policy development. This literature review seeks to make the ‘recognition space’ in education more visible and support subsequent research activities which respond to the ‘recognition space’ in education. In doing so, it contributes to growing scholarship around the creation of Indigenous-specific measures of development with a specific focus on education (see Yap & Yu 2016).

2. How is Indigenous educational success conceptualised and operationalised in literature and policy?

The review of the literature and policy found that outcomes in Indigenous education fell into three broad themes: academic and career achievement, social and emotional wellbeing (SEWB), and cultural identity. The following sections discuss how policy and literature conceptualise and operationalise Indigenous education outcomes within these themes, offers a critique of some current measures and explores a range of relevant debates.

2a. Academic achievement

i. PARITY

Government policy predominantly conceptualises Indigenous high school education outcomes in terms of statistical parity between Indigenous and non-Indigenous students across a narrow set of measures. In the Australian Government's 'Closing the Gap' report, Indigenous education outcomes are framed in terms of achieving parity in Year 12 attainment and school attendance rates between Indigenous and non-Indigenous students. The report also places primacy on attaining parity in the academic outcomes of Indigenous and non-Indigenous students measured by reading, writing and numeracy scores (Department of the Prime Minister & Cabinet 2020). Meanwhile, the NSW Premier's Priorities outline a central goal as Aboriginal students attaining their final school qualifications at the same rate as non-Aboriginal students, alongside Aboriginal students maintaining their cultural identity, and The Victorian Government's Aboriginal Affairs report outlines Year 12 attainment rates and participation in work or further education as vital to supporting Aboriginal students to "achieve their learning aspirations and excel" (NSW Government; Victoria Government Aboriginal Affairs Report 2020).

While these measures reflect important trends in Indigenous education, and while equality is a worthwhile goal, the significance policymakers assign to these outcomes is not matched by their value in providing a reliable representation of overall education outcomes. Standardised testing, for instance, has been strongly criticised (Altman & Fogarty 2010; Hardy 2013). NAPLAN scores have been critiqued as poor reflections of students' intellectual capacities and for being culturally and linguistically biased towards students from white middle-class cultures (Altman & Fogarty 2010), and as not adequately capturing the nature of learning in rural and remote contexts (Hardy 2013). Moreover, overstating statistical parity may produce ethnocentric indicators which risk ignoring the value of Indigenous worldviews and wellbeing and obscures the idea that Indigenous people may have their own life projects (Taylor 2008). The ultimate goal of education interventions thus becomes about meeting political targets around reducing the gap between Indigenous and non-Indigenous outcomes. This has led to what is referred to as 'gap talk' and has come to dominate Indigenous education policy discourse. Alternative discussions on how Indigenous outcomes might diverge from non-Indigenous circumstances are thus obscured.

ii. ATTENDANCE AND ENGAGEMENT

Attendance as an outcome is frequently adopted as a measure of Indigenous educational achievement in both policy and literature (Department of the Prime Minister & Cabinet 2018, 2020; Biddle & Cameron 2012; Biddle & Meehl 2016; Guenther 2013; Guenther et al. 2014; Hewitt & Walter 2014; Frigo et al. 2004; Purdie et al. 2000; Baxter & Meyers 2019; Bodkin-Andrews et al. 2010). The disparity between Indigenous and non-Indigenous attendance rates is frequently cited and has been deemed problematic in policy discourses since at least the 1980s (Gray & Beresford 2002), justifying several interventions and reviews within Indigenous education (Mellor & Corrigan, 2004). These are based on assumptions around the relationship between increased attendance and improved performance on standardised tests (Ladwig & Allan 2014). As already mentioned, the Australian Government has recently framed narrowing this disparity within the policy framework of 'Closing the Gap', citing attendance rates as an indicator of Indigenous students' educational achievement. Several studies discuss disparities between Indigenous and non-Indigenous attendance rates (Bourke, Rigby & Burden 2000; Zubrick et al. 2006). There is also a discussion in the literature linking trends in attendance rates to stages of Indigenous students' school careers, and the corresponding trends of their non-Indigenous peers (Hancock et al. 2013; NSW Aboriginal Education Consultative Group Inc & NSW Department of Education and Training 2004), while recent government reports discuss the relationship between attendance rates and several factors such as school sector, jurisdiction and geo-location (ACARA 2011; 2012a; 2012b; 2015a, 2015b, 2015c; 2016a, 2016b). A study by Bodkin-Andrews et al. (2010) examining the relationship between self-concept and education outcomes of Indigenous students in Australia used a single-item self-report measure for attendance whereby students listed how many days they were absent in the previous year of schooling. Similarly, the Longitudinal Study of Indigenous Children (LSIC) measures absenteeism by asking both parents and student how many days in the last two weeks the student has missed school and the reasons why (Department of Social Services, 2020).

Attendance as an outcome is also discussed in terms of engagement and participation. Several studies conceptualise education outcomes in terms of students' levels of engagement and participation at school. Biddle & Cameron (2012) use the proportion of the Indigenous population aged 15-19 years who were attending an educational institution as an indicator of participation in their discussion of whether geographic distribution explains differences in Indigenous participation. A systematic review by Lowe et al. (2021) explores the relationship between Indigenous cultural and language programs and student engagement and examines the efficacy of these programs in strengthening students' Indigenous identities, their connectedness to community and Country, the schools' connection with local Indigenous communities, and whether this has a causal effect on a student's level of school engagement. The review found a connection between students' access to cultural programmes and improved levels of school engagement. Mooney et al. (2016) compare levels of academic engagement between Aboriginal and non-Aboriginal Australian students, and the influences of self-concept, motivation, and cultural perspectives on academic engagement. They use items from the Leadership and Engagement Scale (Leithwood & Jantzi 1999) as indicators of academic engagement, which include the items, "I get involved in things we do in class" and "I participate when we discuss things in class" (Mooney et al. 2016, p. 15). Jackson-Barrett & Hammond (2018) examine the outcomes of an 'On Country Learning' (OCL) project which explores Aboriginal connectedness to the spiritual, cultural, environmental, and geographic dimensions of particular outdoor spaces. The study used indicators of involvement in learning based on the Leuven Involvement Scales (Laevers 1994), which includes categories with indicators for each of the following: concentration, energy, complexity and creativity, facial expressions and gestures, persistence, precision, reaction time, verbal utterances, and satisfaction.

A small body of literature conceptualises education outcomes by a student's level of motivation as part of discussions on the relationship between Indigenous identity and pride and motivation at school. In interviews with Aboriginal primary school students, Munns, Martin & Craven (2008) found that the Aboriginal students interviewed had a strong sense of pride in who they were as Aboriginal Australians and were also highly motivated at school. Harrison & Greenfield (2011) use suspension levels as an indicator of a student's level of motivation and the inclusion of Indigenous knowledges within the curriculum as an indicator of Indigenous identity and pride. In their interviews with teachers, they found an association between lowered suspension levels and the incorporation of specific and localised Indigenous knowledges within the curriculum, suggesting that stronger engagement with localised Aboriginal knowledges may be an important source of pride for Aboriginal students. From an international perspective, Preston & Claypool (2013) use culturally safe school spaces as indicators of Aboriginal identity and pride. They found during interviews that a trusting school environment and culture, flexible learning possibilities, family and cultural role models, and sensitivity and awareness of student and cultural histories were crucial to increasing the students' sense of academic motivation, as well as linking their academic motivation to their already strong sense of Aboriginal identity. However, all these studies were qualitative and did not systematically operationalise concepts of motivation and Indigenous cultural identity and pride.

In the Indigenous education literature, absenteeism, which is used as an indicator of student disengagement, is commonly presented as the cause of Indigenous student disadvantage (McRae et al. 2000; Collins 1999). Although there is likely an association between absenteeism and poor learning outcomes, identifying absenteeism as the single cause of poor learning outcomes is an oversimplification and has

the potential to shift blame to Indigenous students, families and communities, as has been seen through the use of welfare quarantining. There are a range of structural factors impacting school attendance such as overcrowded housing, student health, schools' cultural engagement and teacher quality (NSW Department of Education 2022) which should not be omitted from an analysis of Indigenous school attendance and engagement. Similarly, Groome & Hamilton (1995) have asserted that instead of being the cause of poor learning outcomes, disengagement and poor attendance should be used as a reflection of general dissatisfaction with school, which may result from a lack of social incorporation (Malin 2002) or disengagement with school learning (Russell 2000). Evidently, the issue of Indigenous students' attendance and engagement at school is complex. Moreover, the data collected by the Australian government which is used to allocate school funding and inform future education policy is unreliable. Baxter & Meyers (2019) sought data used for the last 30 years and found a lack of complete, valid data with verified integrity at all levels of aggregation (also see Prout & Yap 2012). The reliability of recent school attendance data has been further compromised by the impact of Covid-19 and inconsistent recording practices across schools and jurisdictions. The evidence on the relationship between attendance rates and academic outcomes is conflicting however, (Guenther et al. 2014; Ladwig & Allan 2014; Biddle 2014) and so policy makers should be careful not to overemphasise attendance rates as a measure of academic success. Further, with the exception of three studies (Baxter & Meyers 2019; Briggs 2017; Mander-Ross 1995), little is known about the factors underlying urban Indigenous attendance, even though most Indigenous students reside in urban areas (Baxter & Meyers 2019). Policy solutions relating to school attendance need to recognise the broader structural issues at play if they are to effectively improve Indigenous students' education outcomes.

iii. ASPIRATIONS

'Raising aspirations' among under-represented groups has, in recent decades, become an important objective of Australia's education policy (Sellar et al. 2011). This is premised on the idea that 'higher' aspirations strengthen a country's economic competitiveness through returns on investment in human capital. Policymakers have also identified the importance of 'raising aspirations' among under-represented groups in achieving greater social inclusion. In other words, if students that are typically under-represented in higher education boosted their aspirations, they would be more likely to attain higher educational qualifications and would therefore increase their access to educational resources (Sellar et al. 2011). This review only identified one study which operationalises aspirations as a concept of Indigenous educational success. Bodkin-Andrews et al. (2017) examines the relationship between cultural identity, future aspirations, and academic motivational tendencies. Martin's (2009) Motivation and Engagement Scale (MES) was used to measure motivation and six items were drawn from Cameron's (2004) Social Identification Scale to measure cultural identity. Aspirations were broken into two separate outcomes: school aspiration and university aspiration. School aspiration was measured by a student's response to when they would aspire to leave school, ranging from 'as soon as I can' to 'after I finish the last year of school', and university aspiration was measured by a single item where students could select whether they wanted to go to university after they leave school (Bodkin-Andrews et al. 2017). The study finds that there are key links between motivation and cultural identity, both of which are associated with stronger educational and life aspirations.

The notion 'raising aspirations' as conceptualised by policymakers – as well as some scholars – may not align with some Indigenous priorities and worldviews and should be considered with caution. Dominant conceptions of 'high aspirations' inherent in Australian policy discourse are underpinned by Western norms and assumptions surrounding the desirability of certain educational and career pathways and life projects. This discourse obscures legitimate Indigenous worldviews which may not always place the same degree of emphasis on these pathways and life projects as being essential to leading a good life. Policy discourses framed around aspirations risk casting Indigenous students as having 'lower ambitions' or 'lacking drive' when compared to non-Indigenous students whose life projects are more likely to align with government policy objectives. This further entrenches deficit narratives surrounding Indigenous students and individualises the issue of educational participation by overlooking structural factors of exclusion, which a student is unlikely to overcome simply by 'raising their aspirations'.

iv. GOOD GRADES/ACADEMIC SUCCESS

The majority of literature conceptualises Indigenous education outcomes in terms of academic performance. Several studies conceptualise academic outcomes in terms of reading achievement. Cain & Hattie (2020), for instance, use NAPLAN reading scores as an indicator of reading achievement. De Bortoli & Thomson (2010) and Martin (2006) discuss academic outcomes in terms of Indigenous students' performance on PISA. This is indicated by mean scores on reading literacy, mathematical literacy and scientific literacy. Biddle & Meehl (2016) explore the relationship between gender and academic outcomes, using math, reading and science test scores from the Longitudinal Survey of Australian Youth (LSAY) as indicators of academic outcomes.

Several studies examine the relationship between academic achievement and Indigenous students' self-concept which is discussed in greater depth below. Some studies look specifically at the relationship between academic domains of self-concept (e.g. mathematic, verbal and general academic self-concept) and academic achievement (e.g. Bodkin-Andrews et al. 2010) and find that these domains explain significant variation in students' grades. Bodkin-Andrews et al. (2010) use maths and English grades from students' reports as measures of academic performance. Wilson et al. (2020) examine the relationship between sport and academic performance amongst Australian Indigenous children using Progressive Achievement Test (PAT) Maths and NAPLAN scores from LSIC as measures of academic performance. Martin et al. (2021) use students' educational aspirations, academic buoyancy, homework completion, and test achievement as measures of academic success in their exploration of the relationship between Indigenous students' academic motivation and academic engagement and their role in academic outcomes. Educational aspirations were drawn from Martin (2007, 2009); academic buoyancy was measured with the Academic Buoyancy Scale (Martin & Marsh 2008) and relates to students' academic setbacks and challenges; homework completion (Green et al. 2007) was a single-item indicator rated by the student on a scale from 1 to 5, and achievement was measured by literacy and numeracy test items.

The reliance on narrow measures of academic performance as markers of overall educational achievement has recently been called into question by the Shergold Review (2020), which contends that single-number measures such as the ATAR score do not capture the wide range of skills and attributes that students require for economic, social and democratic participation, fail to reflect the breadth of learning that occurs in schools, limit the role of educators in serving the best interests of students, and can adversely impact student self-esteem. The reliance on academic performance as the sole marker of overall educational achievement may also be said to have negative consequences for the educational careers of Indigenous students. The Online Literacy and Numeracy Assessment (OLNA) in West Australia and the HSC minimum standard test in New South Wales are used to stream high school students into pathways in the later years of school and have significant consequences for access to higher education. The use of these tests, combined with other informal and potentially discriminatory streaming processes within schools, have the effect that Indigenous students are substantially less likely to be eligible for an ATAR score – the conventional pathway to higher education – than non-Indigenous students in Year 12 (SCRGSP 2020). Further, as noted above, standardised academic testing has been strongly criticised for carrying social, cultural and linguistic biases and failing to adequately capture the intellectual capacity of students. In response to these concerns, there is increasing interest in the use of more holistic approaches to assessing student educational achievement and determining eligibility for higher education programs. The Shergold Review recommends the use of 'Learner Profiles' which identify the range of skills, knowledge and experiences that students acquire both inside and outside of the classroom. The same review also recommends that 'Learner Profiles' for Indigenous students recognise "cultural competencies and experiences" (Recommendation 16). Alongside these developments, it should be noted that subjective assessments have the potential to increase assessor bias, which may adversely affect Indigenous students (Henry & O'Shea 2020).

v. SKILL DEVELOPMENT

Numerous studies report on specific skill acquisition as an outcome of pedagogical practices, mostly in terms of literacy and numeracy skills. Godinho et al. (2017) measure literacy outcomes using NAPLAN results; McDonald et al. (2011) found that the emphasis on literacy acquisition improved mathematical understanding using teacher self-reported data; Wolgemuth et al. (2014) and Ehrich et al. (2010) focus on literacy acquisition, measuring students' literacy skills; Pegg & Graham (2013) measure growth scores of Aboriginal students' mathematics scores and identify explicit instructional approaches, as well as teacher professional learning, a motivational learning environment, improved student attention, behaviour and participation as important to improved scores; Darcy & Auld (2008) and James (2014) measure success by the strong uptake of culturally appropriate readers and increased student engagement in reading, and Wilson & Alloway (2013) discuss Indigenous students' levels of understanding of scientific concepts as a measure of skill acquisition. Much of the literature in this category consists of microstudies evaluating the use of pedagogical approaches to respond to Aboriginal education needs in specific contexts, usually in remote schools. Other studies report that the development of particular skills is critical to the academic success of Indigenous students.

vi. RETENTION AND ATTRITION

Biddle & Meehl (2016) define school persistence as an outcome in their study of the relationship between gender and several other education outcomes. They combine current attendance and past completion into a measure of Year 12 persistence using LSAY data. Findings from one national study into the retention rates of Aboriginal and Torres Strait Islander students in education use participation rates in secondary school, whether Aboriginal and Torres Strait Islander students complete compulsory years of schooling, and the percentage of Aboriginal and Torres Strait Islander students who start Year 7 or 8 five or four years earlier who were still enrolled (Yunupingu 1994).

Aggregated retention rates should be adopted with caution when used as an outcome of Indigenous education. The 'apparent' retention rate reported by ACARA is unreliable as it does not reflect the 'actual' retention rate (Victoria State Government, n.d.). 'Apparent' retention does not account for transfer rates, which can be as high as 60 percent in some schools (Groome & Hamilton 1995), interstate mobility, students progressing at a faster or slower rate than one grade per year, students changing between full-time or part-time study, variation in state-level enrolment policies, and a range of other factors (Victoria State Government, n.d.). Moreover, as a standalone measure, retention – apparent or actual – is a poor indicator of a student's engagement, learning and capabilities.

vii. ENTRY INTO, AND RETENTION IN, SECONDARY AND TERTIARY EDUCATION

Whether or not a student transitions into further education is a common measure of Indigenous educational success across policy and the literature (Steering Committee for the Review of Government Service Provision (SCRGSP) 2020; Victoria Government Aboriginal Affairs Report 2020; Guenther et al. 2015). The Productivity Commission's 'Overcoming Indigenous Disadvantage' report highlights post-secondary education as a key outcome, the measure of which is "the number of adults who have attained post-secondary qualifications at AQF Certificate level III or above, or are currently studying at any level, as a proportion of all adults" (SCRGSP 2020, p. 476). The report links post-secondary education and training for Aboriginal and Torres Strait Islander people to improved employment outcomes, higher incomes, and better health and social wellbeing (SCRGSP 2020). Similarly, the latest Victorian Government's Aboriginal Affairs report outlines that the proportion of Aboriginal young people in work or further education as an outcome of educational success, which is measured by the destinations of Year 12 completers, tertiary education participation and completion; the proportion of 20-64 year old government-funded and total VET graduates employed and/or in further study after training; and the proportion of graduates and cadets employed in VPS (Victoria Government Aboriginal Affairs Report 2020). Guenther et al.'s (2015) research in remote schools across Australia reveal that post-school transitions is viewed as a measure of educational success to Aboriginal stakeholders involved in the study.

viii. FULFILLMENT OF POTENTIAL

Indigenous education policies have defined the fulfillment of Indigenous students' potential as an important outcome of Indigenous education. For instance, the National Agreement on Closing the Gap outlines Aboriginal and Torres Strait Islander students achieving their full potential as a target, measured by the proportion of Aboriginal and Torres Strait Islander people attaining a Year 12 or equivalent qualification (Department of the Prime Minister & Cabinet 2020). Similarly, the Victorian government's Aboriginal Affairs report highlights Aboriginal school leavers being able to achieve their potential as a vital outcome of learning spaces, measured by the proportion of Aboriginal young people in work or further education. This is indicated by the destination of Year 12 completers, tertiary education participation and achievement, the proportion of 20-64 year old government-funded and total VET graduates employed and/or in further study after training and the proportion of graduates and cadets employed in VPS; retention, progression and satisfaction (Victoria Government Aboriginal Affairs Report 2020).

Definitions of what constitutes the 'fulfillment of potential' are socially and culturally contestable. As with the notion of 'aspirations', policy definitions of 'potential' do not necessarily align with Indigenous worldviews or life projects. While policymakers conceive of fulfilling potential in terms of academic success that places primacy on the individual, Indigenous concepts of potential might relate more to collectivist goals, such as contributing to family, community or country (see Yap & Yu 2016). An alternative approach to measuring the fulfillment of potential which better aligns with Indigenous perspectives is therefore needed. One approach, for instance, may be to measure whether a student has reached self-defined outcomes relating to what they view as their 'potential', and similar approaches have been used to measure student outcomes in LSAY (Longitudinal Survey of Australian Youth, n.d.). Such an approach would need to contend with the role that low expectations for Indigenous students play in shaping students' own perceptions of their potential.

2b. Social and emotional wellbeing

i. SOCIAL AND EMOTIONAL WELLBEING

Most of the Australian literature on wellbeing focuses on health outcomes, and very little research was found which sought to operationalise wellbeing in the Australian context within education. Yap & Yu (2016) is one significant project focused on operationalising Indigenous concepts of wellbeing within the Yawuru community in Broome. Their work finds that Yawuru's wellbeing can be linked to a philosophy of mabu liyan or good liyan which reflects Yawuru's sense of belonging and being, emotional strength, dignity and pride. Living well in connection with country, culture, others and oneself is central to mabu liyan (Yap & Yu 2016). The small body of education literature that measures wellbeing outcomes in Australia focuses mostly on the experiences of Indigenous boarding school students and the impact of targeted SEWB initiatives. Although there is a focus on wellbeing as an education outcome in the early years of a student's education as part of the Australian education system, it is often a neglected outcome once students move beyond the early years and the focus of education shifts towards implementation of curriculum and academic testing (McCalman & Bainbridge 2021).

Franck et al. (2020) evaluate a Social and Emotional learning (SEL) program for Aboriginal boarders in secondary school to determine whether the program improves SEWB outcomes, indicated by the degree of students' psychological distress, their level of social and emotional skills, and their level of resilience (Frank et al. 2020). The KidsMatter initiative, an SEL program adopted by many schools to improve school-based mental health in Australia, was reviewed to determine whether it was able to cater for Indigenous students, their families, and communities more effectively. The outcomes measured as part of the review were students' level of social skills development and responsible behaviour (Dobia & Roffey 2017). The Aboriginal Girls Circle (AGC) is another SEL initiative designed specifically for Aboriginal girls to address certain social behavioural issues. The AGC identifies social and emotional skills, a student's level of agency, leadership, and the degree of community connection as important education outcomes (Dobia & Roffey 2017). Similarly, a program called Skills for Life (SFL) provided

a social-emotional curriculum for Indigenous middle-school students that was co-developed with educators and community members in a remote community of northern Australia. An evaluation of this program used the Strengths and Difficulties Questionnaire (SDQ) as the primary outcome measure, as well as the Kessler 6 (K6) as a measure of social and emotional skills (Robinson et al. 2020).

Studies which operationalise wellbeing as an outcome of Indigenous education are more common in Canada and Aotearoa New Zealand. The Canadian Council on Learning's Holistic Lifelong Learning Framework (2009) identifies several measures of Indigenous educational success relating to wellbeing outcomes that reflect Indigenous priorities and values. The framework conceptualises wellbeing as a holistic concept consisting of the emotional, physical, spiritual and intellectual aspects of an individual. By recognising the need to comprehensively define what "learning success" means for Aboriginal people, the framework stresses the importance of social and emotional measures defined from an Indigenous standpoint and provides a framework of indicators to track progress. The learning models illustrate the place of learning, its sources, how people learn and the connection between learning and community wellbeing. Fox, Neha & Jose (2018) conduct a longitudinal study into the relationship between cultural embeddedness, adaptive coping strategies and wellbeing of Māori youth. Cultural embeddedness is indicated by attitudes towards, and competency in, te reo Māori; connectedness to whanau and friends; and awareness of cross-cultural seminars and differences collated into a single variable termed 'Māori cultural embeddedness' (Fox, Neha & Jose 2018). Adaptive coping was measured using a 10-item scale combining resilience, social support and problem-solving items. Both social support and problem solving were adapted from an existing coping scale (Jose et al. 2018). Wellbeing was operationalised using items capturing dimensions of aspiration/purpose in life, positive relations with others, and confidence. Māori cultural embeddedness was found to predict improvements in adaptive coping and adaptive coping predicted improvements in

wellbeing over time, but cultural embeddedness did not predict direct improvements in wellbeing over time. However, cultural embeddedness did indirectly predict improvements in wellbeing through improved adaptive coping strategies, which supports the theory that a strong cultural identity improves the wellbeing of Māori people. Rata's thesis (2012) operationalises psychological wellbeing using indicators of aspirations, positive relations, and confidence. Māori ethnic identity was operationalised by indicators of a student's sense of pride in their ethnic identity, while Māori cultural engagement was indicated by items assessing competence in speaking and understanding te reo and items assessing access to cultural institutions.

Resilience as an enabler of wellbeing is well documented in the literature. McCalman & Bainbridge (2021) provide a systematic review of outcomes resulting from resilience interventions targeting Indigenous students in Canada, Australia, New Zealand Aotearoa, and The United States. The interventions surveyed found group workshops, cultural engagement and participation, education, training, mentoring, and community capacity-building aimed at increasing student well-being and resilience produced outcomes at the levels of individual students, communities/culture, and schools (Jongen et al. 2019). They also found these interventions to improve wellbeing measured by the following indicators: peer support/social inclusion and/or social connection/involvement, coping skills and communication/conflict resolution skills, self-esteem and/or confidence, self-reliance and acceptance of seeking support, analytical and reflective skills, the ability to set goals, leadership capacity, personal power and autonomy, and sense of purpose (Domitrovich et al. 2017; Roffey & McCarthy 2013). They also found improvements in wellbeing measured by levels of social and psychiatric functioning, the degree of risk of clinically significant mental health concerns, the presence or absence of depression symptoms, levels of overall health, knowledge and awareness/understanding of alcohol, drugs and suicide, and levels of anxiety for students with elevated anxiety (Domitrovich et al. 2017; Fleming, Dixon, Frampton, & Merry 2011; Morsillo & Prilleltensky 2007; Roffey & McCarthy 2013) and behavioural outcomes measured by degree of substance use, and self-harm tendencies. At the level of communities/culture, improved outcomes

were measured by the degree of a student's sense of Indigenous identity (Blignault, Haswell, & Pulver 2016; Dobia et al. 2014), level of proficiency in a local language, level of understandings of mental health and well-being, and the level of promotion of resources in the local Indigenous language. For schools, outcomes from resilience interventions were measured by the frequency of adolescent training and leadership opportunities (Cahill et al. 2014; Domitrovich et al. 2017), rates of student retention, levels of academic proficiency, frequency of teasing, bullying and violent incidents, number of graduations, and amount of money spent on external mental health services (LaFromboise & Howard-Pitney 1995; Spears et al. 2006).

Calls for the adoption of SEWB outcomes in the Australian education system have been growing in recent years. The Productivity Commission's recent Interim Report on the National Schools Reform Agreement recommends the adoption of wellbeing outcomes for Australian students to support their overall learning potential (Productivity Commission 2022). Internationally, systematic evaluations of outcomes from SEL programs provide evidence of their effectiveness in improving social and emotional skills, attitudes, behaviour and academic performance (Durlak et al. 2011). However, these programs have been developed and tested mostly in urban contexts in the USA, and so claims for their universal effectiveness remain untested (Dobia & Roffey 2017). In Australia, many SEL programs have been found to be effective for the general population, yet very few programs have been developed with input from Indigenous students and framed by an Indigenous cultural perspective (Coffin et al. 2010). There is a need for future SEWB outcome measures and SEL programs to consider how Indigenous cultural values inform psychological constructs that underpin Indigenous SEWB if they are to contribute positively to improved education practices and outcomes for Indigenous students, families and communities. This work can draw on important insights from a growing body of literature seeking to decolonise mainstream psychological constructs and validate the holistic nature of Indigenous SEWB across domains of mind, body, family, kinship, community, culture, country and spirituality (Dudgeon et al. 2014).

ii. POSITIVE SELF-CONCEPT


Self-concept has been defined in many ways in the literature. The terms 'self-efficacy', 'self-esteem' and 'self-concept' have all been used to describe the phenomena of an individual's self-assessment of their overall capabilities within a specific domain, such as academic or sport (Prehn et al. 2020). 'Academic self-concept' refers to an individual's belief in their academic capabilities. An individual's self-concept in a particular domain is constructed based on their reflections of their relative successes within that domain which is influenced by an individual's environment. For example, teachers, peers and family play an important role in shaping an individual's self-concept. Studies have shown that affirmation from community, teachers and peers have an impact in students' academic self-concept and affect their attendance and school results (Whitley 2014). Academic self-concept is broken down into subject-specific domains within the literature, such as 'mathematics self-concept' (Yeung et al. 2014, p. 408). Studies have also shown that positive self-concept is associated with positive education and life outcomes for students. There is a link between positive academic self-concept, and a greater level of enjoyment, engagement, attendance, and competency among school students (Marsh & Craven 2006; Yeung et al. 2013; Whitley 2014; Mooney et al. 2016; Gore et al. 2017).

Only one study in the Australian context encountered in this review conceptualises education outcomes in terms of self-concept. Arens et al. (2014) examines the difference between Indigenous and non-Indigenous students' self-concepts and whether the discrepancy is a result of their abilities or their feelings about specific domains of self-concept, using measures for Mathematics, English, school, and physical ability self-concept, as well as measures for art self-concept. While the number of studies conceptualising education outcomes in terms of self-concept are limited, there is relatively more discussion around the relationship between the self-concept of Aboriginal students and academic achievement (e.g. Bodkin-Andrews, O'Rourke & Craven 2010; Purdie & McCrindle 2004). Research has hypothesised that children belonging to a minority cultural or ethnic group (with attributes that may not be viewed positively by the dominant cultures) may have low self-esteem (Annis & Corenblum 1986) and

lower self-concept than those students belonging to the dominant cultural or ethnic group (Bodkin-Andrews et al., 2005; Craven et al. 2005; McInerney 2001). For example, Nugent (1992) identified that Aboriginal tertiary students often had negative experiences in education which affected their self-concept.

Several studies have explored the relationship between self-concept and various outcomes relating to education. Studies have found relationships between self-concept and academic achievement for Aboriginal students. For instance, academic domains of self-concept such as math, verbal, and general academic were found to explain significant variation in student grades (Bodkin-Andrews et al. 2010; Brickman, McInerney, & Martin, 2009; Purdie & McCrindle 2004). Self-concept was also found to significantly predict school aspirations (Bodkin-Andrews et al. 2010). Similarly, Craven et al. (2005) interviewed more than 100 Aboriginal secondary students in Australia, who described holding 'lower' educational aspirations and having less of an understanding of the education required for them to attain their chosen occupations compared to their non-Aboriginal peers. Indigenous students in other studies conducted in Australia and Canada also described the low expectations they faced with respect to academic streaming and the beliefs of teachers and peers (Purdie et al. 2000; Walton et al. 2009). Students described how the decisions made by school staff early in their school careers - namely, that they belonged in lower-level courses - affected their academic self-concept which may have prevented them from potentially improving or excelling in various subjects. Students also highlighted feeling disengaged and unmotivated as a result of the low expectations and lack of support they experienced at school.

Some studies, however, find that the self-concept of Indigenous students may be higher than non-Indigenous students (Bodkin-Andrews et al. 2005; Craven & Marsh 2004; Purdie & McCrindle 2004; Purdie et al. 2000). In the Australian context, studies have shown that Aboriginal students report higher self-concept in physical, art or family domains, but lower self-concept in areas of academics, including numeracy and reading (Bodkin-Andrews et al. 2010; Purdie & McCrindle 2004).



In the Canadian context, focus groups were conducted with First Nations, Métis and Inuit students and their teachers in northwestern Ontario which aimed to identify factors related to their educational success. Findings indicate that the students' self-concept, engagement, and academic success was affected by students' relationships with their academic work, messages of success transmitted through grades and assessment feedback, students' senses of their reputation and places within their peer groups and school, and students' experiences in school and in the classroom (Whitley 2014). Similarly, Toulouse (2010) explored the perceptions of Aboriginal post-secondary students in Ontario, Canada, and found that motivation and self-esteem reinforced both at home and school contributed to their success.

2c. Strong cultural identity

i. CULTURAL IDENTITY IN THE EDUCATION LITERATURE

The role of cultural identity sits unevenly alongside academic achievement and SEWB as an outcome in education. The discussion of academic achievement and SEWB above has focused on how these constructs have been conceptualised and operationalised as discrete outcome domains. There are elements of Indigenous cultural identity that have been operationalised in various settings. For example, LSIC Wave 12 asks children about their knowledge of Indigenous culture and history. However, to give full and proper meaning to Indigenous cultural identity in the context of education, Indigenous culture should be seen as a standpoint or philosophical worldview from which culturally relevant outcomes, measures and frameworks can be developed. This approach is consistent with the recognition of the right of Indigenous peoples to determine their own development and is compatible with Article 14 of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), which states that Indigenous peoples have the right to control their own educational systems and the right to an education in their own culture and language (UN General Assembly 2007). This also means that an Indigenous standpoint will influence the interpretation and application of the

outcome domains discussed above. For instance, in relation to SEWB, it was noted that more work is required to understand how Indigenous perspectives influence the construction of SEWB measures.

The role of cultural identity in the overall education of Indigenous students is a dominant theme in much of the Indigenous-led education literature. Culture is discussed in relation to: teacher competency, teacher expectations and providing culturally safe learning environments for Indigenous students (Parkinson & Jones 2019; Lowe & Yunkaporta 2013; Whitley 2014; Lowe et al. 2014; Perso 2012); culturally appropriate pedagogy and supporting Indigenous students' learning styles (Fogarty 2010; Fogarty & Schwab 2012; Stronger Smarter Institute 2014; 8Ways Learning Framework) the relationship between cultural identity and improved academic outcomes, student engagement and attendance (Bodkin-Andrews et al 2012; Walter & Banks 2021); and the importance of place-based learning in enabling Indigenous students to connect with Country and culture (Fogarty 2010). The definition of cultural identity and how it is measured is rarely considered in the literature (Guenther et al. 2019). Nevertheless, there is some qualitative work which identifies 'success' in Indigenous education from an Indigenous standpoint which is important to recognise.

In the remote context, Guenther et al. (2015) explore ways of improving outcomes for remote Aboriginal and Torres Strait Islander students and their families and investigate how Aboriginal people from remote communities define success in the Northern Territory, Western Australia and South Australia. They recognise the shortfalls in the literature for defining success from a Western standpoint and for its disregard for how the notion of success might be conceptualised in remote communities. Remote community members identified two main outcomes as constituting success: community and family involvement in schools, and academic achievement, which refers to basic literacy and numeracy outcomes. Similarly, Guenther et al. (2014) explore the views of students, parents, teachers, Aboriginal Teacher Assistants and school leaders in 31 remote schools on what aspiration and success look like and find alternative measures of success as jobs, careers, community and cultural roles, and students staying or leaving in community to be important outcomes. Guenther et al. (2019) also

explore what factors contribute to education outcomes for First Nations students from remote communities by conducting a systematic review of 45 papers discussing effects on education outcomes for Indigenous students. Education outcomes were defined as “any positive or negative personal, academic or social product of schooling”. The authors found that the outcomes in the papers reviewed fell into seven broad clusters: academic, wellbeing, aspirations, equity, participation, identities, and relational. These were influenced by parent and community involvement, local employment, engagement in learning, curriculum and pedagogies, and students’ safety, health, and wellbeing.


There is a significant portion of Indigenous-led literature that conceptualises positive outcomes as a result of curriculum and pedagogy changes. Parkinson & Jones (2019) explore how a culturally inclusive curriculum that is more responsive to local context and better supports the aspirations of Aboriginal people may lead to positive education outcomes. In interviews with Aboriginal community members in Elliott, Northern Territory, teaching language and culture in school was regarded as being able to build both communal and individual strength, through fostering a greater sense of identity and self-esteem. Munns, O’Rourke & Bodkin-Andrews (2013) conducted case studies of four NSW schools where Aboriginal students were the minority of the population to investigate the conditions of success for Aboriginal students. The study does not identify the specific outcomes that constitute success, but broadly defines success in terms of social and academic outcomes. They find that community relationships, Aboriginal cultural spaces, people and perspectives, quality teaching, a learning community mindset, targeted support, and teachers regarding Aboriginal students as important, responsible, and able to achieve as important to improving Aboriginal student outcomes.

Indigenous student cultural identity is also heavily discussed in relation to the effects of Learning on Country programmes. Jackson-Barrett & Hammond (2018) for instance, identify the outcomes of an On Country Learning (OCL) program as students being able to gain first-hand knowledge of local Nyungar culture, make culturally responsive connections between On-Country and their school curriculum, and teachers being enabled to disrupt the dominant Eurocentric discourse and embed Aboriginal perspectives into

their teaching. Lowe, et al. (2021), Toulouse (2016), Moon (2014), Donovan (2015) and Country et al. (2020) also conceptualise education outcomes in terms of Indigenous identity and/or pride. Lowe et al. (2021) identify Indigenous students’ strength of identity and the strength of their connection to Country and their community as measures of Indigenous identity. Similarly, Country et al. (2020) regards a student’s level of understanding, respect and care for country as a measure of their Indigenous identity.

Despite the importance assigned to culture in the Indigenous-led literature, there are few examples of attempts to operationalise education outcomes from an Indigenous standpoint. Bodkin-Andrews’s et al. (2017) study discussed previously is the only study encountered which seeks to operationalise measures of Indigenous cultural identity in the context of the Australian education system. In this study, six items were drawn from Cameron’s (2004) Social Identification Scale to measure cultural identity. These items included questions concerning cultural ties, centrality and affect. Indigenous cultural values have been operationalised to a greater extent in Aotearoa New Zealand as an enabler of positive education outcomes. As previously discussed, in Fox’s (2018) study, cultural embeddedness is indicated by attitudes towards, and competency in, *te reo Māori*; connectedness to whanau and friends; and awareness of cross-cultural seminars and differences which is collated into a single index termed ‘Māori cultural embeddedness’. Rata’s thesis (2012) operationalises Māori ethnic identity using indicators of a student’s sense of pride in their ethnic identity, while Māori cultural engagement is indicated by items assessing competence in *te reo* and access to cultural institutions.


There are a range of possible explanations for why there have been limited attempts within the Australian education literature to operationalise education outcomes from an Indigenous standpoint. This silence may be partly attributed to broader silences around the inclusion of Indigenous epistemological, axiological and ontological values in quantitative research, education policy and official statistics (Walter & Andersen 2013). It may be partly attributed to the limited availability of long-term funding for Indigenous-led education research projects, or the challenges posed by incorporating Indigenous standpoints and methodologies with existing



ethical guidelines. It may also be partly attributed to the theoretically complex task of developing quantitative measures of cultural identity and connectedness across a diverse Indigenous population, discussed further below. Further, this silence may be partly explained by ideological resistance to efforts to bring more and more elements of Indigenous life within the domain of government measurement, with the risk of exposing Indigenous peoples to further layers of surveillance, intervention and control. This concern highlights the importance of emergent Indigenous Data Governance practices in ensuring that Indigenous data is owned and controlled by Indigenous people and managed in a way that promotes Indigenous self-determination and self-governance (see Maim nayri Wingara 2018). A further tension relates to the goal of the Indigenous-led education literature to create space for the expression and recognition of Indigenous culture within education policy and institutions. This goal may be perceived to be at odds with the task of reducing Indigenous culture to an additional metric within an education system increasingly dominated by practices of measurement, standardisation and ranking. Referring to the discussion at the beginning of this section, the Indigenous-led literature predominantly draws on Indigenous culture as a standpoint or philosophy through which to critique the mainstream education system and its failure to accommodate Indigenous values, priorities and perspectives, rather than a discrete outcome domain to be operationalised within that system. There may be a perceived risk that operationalising Indigenous culture within the context of the existing education system reduces the relevance of Indigenous culture to one outcome amongst many, rather than a philosophical foundation for wholesale system reform. While this concern is real, Taylor's 'recognition space' provides balance. Taylor (2008) emphasises the importance of measuring Indigenous cultural values as a means of creating an intercultural space in policy making. According to this view, the operationalisation of education outcomes from an Indigenous cultural standpoint may generate opportunities for Indigenous-led education reform.

ii. CULTURAL IDENTITY BEYOND THE EDUCATION LITERATURE

As there are limited examples of outcomes frameworks in the Australian education context which have been conceptualised and operationalised from an Indigenous standpoint, it is worthwhile looking at examples outside of the education literature. There are various examples of studies and policy frameworks which have sought to operationalise Indigenous rights in development as set out by the UNDRIP and highlight the centrality of culture as a standpoint for framing development goals. As noted above, Yap & Yu (2016) developed a Yawuru wellbeing framework and survey tool to serve as a baseline to guide Yawuru development which more closely reflects Yawuru perspectives on wellbeing in comparison to existing population datasets such as the Census. Yap & Yu's (2016) survey tool is grounded in Yawuru perspectives and incorporates multiple dimensions of culture, including participation in cultural activities, access to traditional homelands, knowledge of traditional cultural practices, and Yawuru language acquisition, as well as broader dimensions of culture, including measures of family and community connectedness. The Interplay Wellbeing Framework was developed with input from remote Indigenous communities with the goal of bringing Indigenous values, narratives, and perspectives from remote communities into policy and was operationalised through a survey instrument (Cairney et al. 2017). The Mayi Kuwayu study is a national, longitudinal survey which is Indigenous designed, controlled and led and which explores the relationship between various domains of Indigenous cultural identity and health and wellbeing outcomes (Mayi Kuwayu 2022). Relatedly, the Lowitja Institute (2021) has developed a framework which centres Indigenous cultural perspectives and identifies how cultural determinants of health can be implemented in health policy. In Aotearoa New Zealand, the Māori Statistics Framework (MSF) was established to support Māori to organise statistical information in a way that reflects a Māori view of wellbeing to support Māori development (Coutts et al. 2016). Alongside conventional development themes such as health and income, the MSF incorporates themes relating to Māori language, knowledge, culturally significant sites and land.



The different outcomes frameworks and survey instruments can be used to illustrate some of the tensions in this area that may be relevant to the education context. One such tension is the weight given to individual versus collective outcomes. Yap & Yu (2016) emphasise that individual Yawuru definitions of wellbeing are inherently tied to the collective wellbeing of the Yawuru people and that individual Yawuru wellbeing is supported by a network of connections between family, community, Country and culture. Within the education context, it is possible that Indigenous definitions of 'success' may extend beyond individual outcomes, such as measures of academic achievement discussed above, and may include collective outcomes relating to the relationship between education and the wellbeing of family and community. The incorporation of collectivist outcomes as measures of educational 'success' poses significant challenges to existing norms in education policy making and the measurement of educational success and may require innovative approaches to data collection which address some of the methodological limitations of conventional survey instruments in measuring collective outcomes. Another tension emerges in relation to the use of Country-specific versus generalised measures of culture. As the place-based learning literature emphasises, Indigenous cultures are diverse and localised. On this basis, the development of culturally-informed measures should occur with the input of local community to reflect specific local histories, worldviews and perspectives, as done by Yap & Yu. On the other hand, a localised approach may at times be incompatible with the policy process and collective Indigenous interests may be better served in the national policy realm by a generalist approach, such as that taken by the Mayi Kuwayu study. A final tension emerges in relation to the

role of values versus behaviours in measuring culture. The LSIC contains examples of both, with the former measured by the degree of importance an individual places on their culture and the latter by an individual's participation in traditional practices. Fox et al. (2018) note the advantage that concrete behaviours remain stable over time, whereas "cognitive and emotional appraisal of identity" might be more fluid and difficult to measure over time (Fox et al. 2018, p. 14). While this might be true, a preference for behavioural measures may exclude individuals who have limited access to cultural opportunities but nevertheless feel a strong sense of cultural identity. The definition of what constitutes cultural behaviour is also likely to vary across the diversity of the Indigenous population. While cultural activities in Yap and Yu's Yawuru framework include things like hunting and fishing, in urban areas cultural activities may be more likely to include things like participation in community events.

While the incorporation of Indigenous cultural perspectives in the conceptualisation and operationalisation of education outcomes presents significant and possibly insoluble challenges, Taylor's 'recognition space' again provides helpful guidance. As Taylor (2008) points out, the measurement of Indigenous cultural values will never capture the totality or specificity of Indigenous worldviews, nor is this the goal. The success or otherwise of efforts to measure Indigenous cultural values should be judged by the extent to which they are effective in establishing an 'intercultural space' in policy development which provides Indigenous peoples with agency and illuminates Indigenous values and worldviews in policy.

3. Conclusion

This review has described the ways in which Indigenous education outcomes have been conceptualised and operationalised in relation to academic and career achievement, social and emotional wellbeing and cultural identity and has explored important debates across these three areas. This review provides a strong foundation for the development of a RISE outcomes framework and data collection instruments. This review has identified several critical gaps and limitations in the literature which will inform the direction of secondary analysis of existing data and primary data collection with Indigenous students, parents and former students. Amongst these gaps and limitations, the following insights and findings emerged in education are rarely factored into policy and research, particularly in urban settings.

It was noted that existing policy frameworks are dominated by a focus on statistical parity around narrow measures of educational participation – including attendance and Year 12 completion – and perpetuate deficit discourses and obscure unique Indigenous aspirations in education.

In relation to SEWB, it was noted that despite increased interest in developing official measures of wellbeing for Australian students, there is limited exploration of what social and emotional wellbeing means to Indigenous students in the education context.

It was also observed that while there is a significant body of Indigenous-led literature which conceptualises Indigenous aspirations in education, there are limited examples of outcomes frameworks or data collection instruments which seek to operationalise an Indigenous standpoint in relation to education. The challenges and risks in doing so were discussed and will inform the development of a RISE outcomes framework and data collection instruments.

OPPORTUNITIES FOR THE RISE PROJECT

The RISE Project presents an important opportunity to conceptualise and operationalise ‘success’ in education from an Indigenous standpoint and address several critical gaps in the literature. The creation of a large-sample and longitudinal dataset in education which is grounded in Indigenous perspectives, values and aspirations has the potential to be a powerful tool for advancing Indigenous goals for education reform and supporting Indigenous self-determination in relation to education.

Appendix

The operationalisation of Indigenous Australian education outcomes across policy and literature

Theme	Concept	Authors	Methodology (where stated)	Indicators
Academic	Parity (i.e., equality with non-Indigenous students)	NSW Premier's Priorities National Agreement on Closing the Gap (NACTG) Victorian government Aboriginal Affairs Report		-Proportion of Aboriginal & Torres Strait Islander students attaining HSC (NSW Premier's Priorities) -Proportion of young ATSI people who have attained a year 12 or equivalent qualification (NACTG)
	Attendance	DP&C (2018, 2020) ACARA (2011-2016) Biddle & Cameron (2012) Biddle & Meehl (2016) Guenther (2013) Guenther, Disbray & Osborne (2014) Hewitt & Walter (2014) Frigo, Corrigan, Adams, Hughes, Stephens & Woods (2004) Purdie, Tripcony, Boulton-Lewis, Fanshawe, & Gunstone (2000) Baxter & Meyers (2019) Bourke, Rigby & Burden (2000) Zubrick, Silburn, De Maio, Shepherd, Griffin, Dalby, Mitrou, Hayward, Pearson, Milroy, Milroy & Cox (2006) Hancock, Shephard, Lawrence, & Zubrick (2013) AECG & DET (2004) Bodkin-Andrews, O'Rourke & Craven (2010)		-Proportion of the Indigenous population aged 15-19 years who were attending an educational institution (Biddle & Cameron 2012) -Leadership and engagement scale (Mooney et al. 2016) -Leuven Involvement Scale (Jackson-Barrett & Hammond). (2018) -Number of days absent in previous year of schooling (self-report) (Bodkin-Andrews et al. 2010)
	Engagement/participation	Biddle & Cameron (2012) Lowe, Tennent, Moodie, Guenther & Burgess (2021) Mooney, Seaton, Kuar, Marsh, Yeung (2016) Jackson-Barrett and Hammond (2018) McRae, Ainsworth, Cumming, Hughes, Mackay, Price, Rowland, Warhurst, Woods, Zbar (2000) Collins (1999)	Critical indigenous methodology (Lowe et al. 2021)	-Proportion of Indigenous youth attending school/education (Biddle & Cameron 2012) -Apparent retention rates for students in yrs. 10-12 (AAR 2020) -No. of Aboriginal students who complete the VCE, VCAL or VET in Schools Certificate (AAR 2020) -Extent to which students engage in class work (Leadership and Engagement scale) (Mooney et al. 2016) -Absenteeism (McRae et al.; Collins, 1999)

Theme	Concept	Authors	Methodology (where stated)	Indicators
	Motivation	Munns, Martin & Craven (2008) Harrison & Greenfield (2011)		Suspension rates (Harrison & Greenfield 2011)
	Aspiration	Bodkin-Andrews, Whittaker, Harrison, Craven, Parker & Trudgett (2017)	Indigenous standpoint theory & Indigenous quantitative methodological framework	-Self-reports on intended timing of school completion (Bodkin-Andrews et al. 2017)
	Good grades / academic success	Cain & Hattie (2020) De Bortoli & Thomson (2010) Martin (2006) Biddle & Meehl (2016) Bodkin-Andrews (2010) Wilson, Duimuid, Olds & Evans (2020) Martin, Ginns, Anderson, Gibson & Bishop (2021)		-NAPLAN reading scores (Cain & Hattie) -PISA reading scores (De Bortoli & Thomson 2010; Martin 2006) -PISA literacy scores (De Bortoli & Thomson 2010; Martin 2006) -PISA science scores (De Bortoli & Thomson 2010; Martin 2006) -LSAY math, reading & science scores (Biddle & Meehl 2016) -LSIC PAT Maths scores (Wilson et al. 2020) -NAPLAN Scores (Wilson et al. 2020) -Literacy and numeracy tests (Martin et al. 2021)
	Skill development	Godinho, Woolley, Scholes & Sutton (2017) McDonald, Warren & DeVries (2011) Wolgemuth, Abrami, Helmer, Savage, Harper & Lea (2011, 2014) Ehrich, Wolgemuth, Helmer, Oteng, Lea & Bartlett (2010) Pegg & Graham (2013) Darcy & Auld (2008) James (2014) Wilson & Alloway (2013)		-NAPLAN literacy scores (Godinho et al. 2017) -Degree of mathematical understanding (McDonald et al. 2011) -Literacy skills (Wolgemuth et al. 2011, 2014; Ehrich et al. 2010) -Growth scores in mathematics (Pegg & Graham 2013) -Degree of uptake of culturally appropriate readers (Darcy & Auld 2008; James 2014) -Level of student engagement in reading (Darcy & Auld 2008; James 2014) -Level of understanding of scientific concepts (Wilson & Alloway 2013)
	Retention & attrition	Biddle & Meehl (2016) Yunupingu (1994)		-Year 12 persistence: current attendance + past completion (Biddle & Meehl 2016) -Participation rates in secondary school (Yunupingu 1994) -Whether ATSI complete compulsory years of school (Yunupingu 1994)

Theme	Concept	Authors	Methodology (where stated)	Indicators
	Entry into/retention in secondary & tertiary education	Guenther, Disbray & Osborne (2015) Victoria Government Aboriginal Affairs Report (AAR) (2020) SCRCSP (2020)		-Entry rates into tertiary education (Guenther et al. 2015) -Destinations of Year 12 completers (AAR 2020) -Tertiary education participation and completion (AAR 2020) -Proportion of 20-64-year-old government-funded and total VET graduates employed and/or in further study after training (AAR 2020) -Proportion of graduates and cadets employed in VPS (AAR 2020) -Number of adults who have attained post-secondary qualifications at AQF Cert level III or above (SCRCSP 2020)
	Fulfilment of potential	National Agreement on Closing the Gap (NACTG) Victoria Government Aboriginal Affairs Report (AAR) (2020)		-Destination of Year 12 completers (AAR 2020) -Tertiary education participation and achievement (AAR 2020) -The proportion of 20-64-year-old government-funded and total VET graduates employed and/or in further study after training and the proportion of graduates and cadets employed in VPS, and retention, progression and satisfaction (AAR 2020) -Proportion of young ATSI people who have attained a year 12 or equivalent qualification (NACTG)
SEWB	Social and emotional wellbeing	Franck, Midford, Cahill, Buergelt, Robinson, Leckning & Paton (2020) Canadian Council on Learning (2007; 2009) Dobia & Roffey (2017) Robinson, Lee, Silburn, Nagel, Leckning & Midford (2020) Fox, Neha & Jose (2018) Jongen, Langham, Bainbridge & McCalman (2019)	Pragmatism (Frank et al. 2020)	-Emotional literacy (Franck et al 2020) -Character strengths (Franck et al 2020) -Problem-solving capabilities (Franck et al 2020) -Coping tendencies (Franck et al 2020) -Help-seeking tendencies (Franck et al 2020) -Nature of gender relationships (Franck et al. 2020) -Empathy levels (Franck et al. 2020) -Self-awareness levels (Franck et al. 2020) -Level of social skills development (Dobia & Roffey 2017) -Presence/absence of responsible behaviour (Dobia & Roffey 2017) -LSIC SDQ score (Robinson et al. 2020) -Kessler 7 scale (Robinson et al. 2020) -Presence/absence of aspiration/purpose in life (Fox et al. 2018) -Presence/absence of positive relations with others (Fox et al. (2018) -Degree of confidence (Fox et al. 2018) -Level of social and psychiatric functioning (Jongen et al. 2019) -Degree of clinically significant mental health concerns (Jongen et al. 2019)

Theme	Concept	Authors	Methodology (where stated)	Indicators
				<ul style="list-style-type: none"> -presence/absence of depression symptoms -levels of overall health (Jongen et al. 2019) knowledge and awareness of alcohol, drugs and suicide (Jongen et al. 2019) -levels of anxiety (Jongen et al. 2019) -degree of substance use (Jongen et al. 2019) -self-harm tendencies (Jongen et al. 2019)
	Positive self-concept	Arens, Bodkin-Andrews, Craven & Yeung (2014)		<ul style="list-style-type: none"> -SDQ II (Arens et al. 2014) -Measures for math, English, school, and physical ability self-concept (Arens et al. 2014) -Measures for art self-concept (Arens et al. 2014)
	Resilience	Franck, Midford, Cahill, Buergelt, Robinson, Leckning & Paton (2020) Thomson (ACER, 2019)	Pragmatism (Frank et al. 2020)	<ul style="list-style-type: none"> -Problem-solving capabilities (Franck et al 2020) -Coping tendencies (Franck et al 2020) -Help-seeking tendencies (Franck et al 2020) -Self-awareness levels (Franck et al 2020) -Level of socioeconomic advantage measured in conjunction with PISA reading literacy assessment results (Thomson 2019) -Attitudes towards reading (Thomson 2019) -Level of motivation to master tasks (Thomson 2019) -Learning goals (Thomson 2019)
Cultural	Indigenous identity/pride	Lowe, Tennent, Moodie, Guenther & Burgess (2021) Jackson-Barrett & Hammond (2018) Country, Gordon, Spillman & Wilson (2020)	Critical indigenous methodology (Lowe et al. 2021)	<ul style="list-style-type: none"> -Strength of Indigenous identity (Lowe et al 2021) -Strength of connection to country (Lowe et al. 2021) -Strength of connection to community (Lowe et al. 2021) -Knowledge of local culture (Jackson-Barrett & Hammond 2018) -Presence/absence of culturally responsive connections between On-Country and school curriculum (Jackson-Barrett & Hammond 2018) -Presence/absence of teachers being able to disrupt dominant Eurocentric discourse in teaching (Jackson-Barrett & Hammond 2018) -Level of understanding, respect, and care for country (Country et al. 2020)

Notes:

The outcomes listed in this table are exclusive to outcomes within education and therefore do not reflect all outcomes mentioned in the literature review.

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