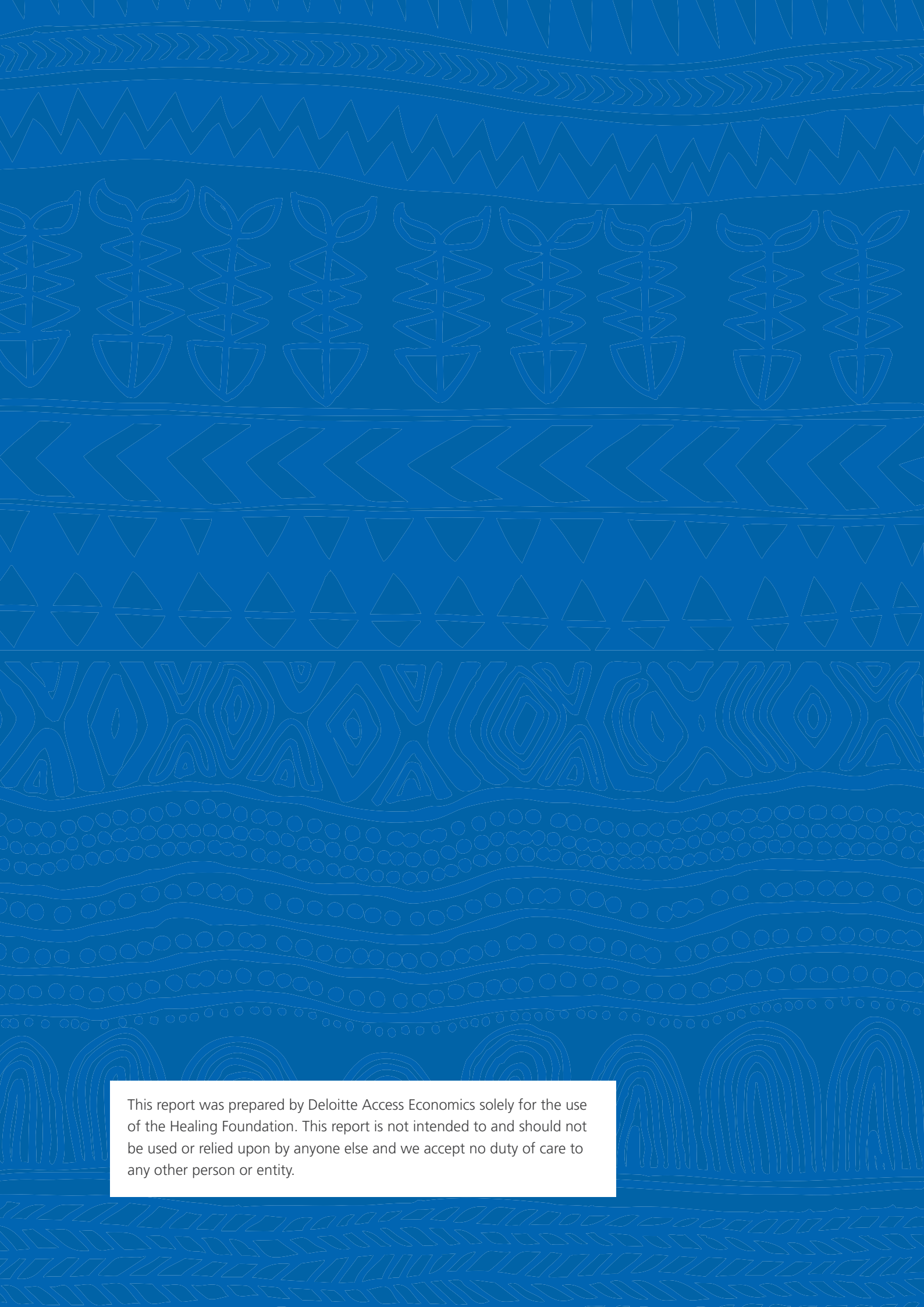


Cost Benefit Analysis of the Murri School Healing Program

The Healing Foundation

February 2017





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Glossary

ABS	Australian Bureau of Statistics
ACARA	Australian Curriculum, Assessment and Reporting Authority
AGSRC	Average Government School Recurrent Costs
AIHW	Australian Institute of Health and Welfare
BCR	benefit cost ratio
DALY	disability-adjusted life year
CBA	cost benefit analysis
CPI	consumer price index
ICSEA	Index of Community Socio-Educational Advantage
NAPLAN	National Assessment Program-Literacy and Numeracy
NPV	net present value
OOHC	out of home care
SDQ	Strengths and Difficulties Questionnaire
SEI	School Engagement Index
SES	socio-economic status
VSL	value of a statistical life
VSLY	value of a statistical life year
YLD	years of health life lost due to disability
YLL	years of life lost due to premature death

Executive summary

The purpose of this report is to assist the Healing Foundation in evaluating The Aboriginal and Islander Independent Community School (hereafter referred to as the Murri School) healing program and to provide a cost benefit analysis of children in this program compared to outcomes of Aboriginal and Torres Strait Islander children in Queensland generally.

The Healing Foundation provides funding for programs in order to address intergenerational trauma amongst Aboriginal and Torres Strait Islander children. The overarching goal of the initiative is to assist young Aboriginal and Torres Strait Islander people to heal from their distress and prevent the continuing transmission of trauma through future generations. The project aims to improve the social and emotional wellbeing of young people by strengthening cultural connectedness and identity, providing opportunities for individual and family healing, and building skills to manage pain and loss in a way that allows for a hopeful future (The Healing Foundation, 2013).

One project the Healing Foundation supports is the Murri School which is located in the greater Brisbane area. The healing program at the Murri School has run since 2012, and combines therapeutic intervention, service coordination, family case work, family camps, cultural and group activities, and (re)connection with educational and sporting activities. The program brings together family support workers, psychologists, medical and allied health professionals and trauma-informed teachers to create a culturally appropriate, supportive environment for students and their families. From January 2016 to June 2016, 230 children and young people took part in healing activities at the Murri School as well as 180 adult family members.

The aim of this report is to estimate the potential benefits that could be achieved if the Murri program was replicated in similar (mostly Aboriginal and Torres Strait Islander) state schools. Due to data limitations, the actual comparator used is outcomes for all Aboriginal and Torres Strait Islander students in Queensland.

- This is conservative as similar schools have higher than average costs, and to the extent that they are in more remote and/or lower income regions, greater scope for potential benefits.
- However, the use of average Aboriginal and Torres Strait Islander student benchmarks should not be taken to infer that the Murri program would achieve similar successes if it was rolled out to all state schools.

Improved educational attainment

The Murri School has higher than average Year 12 completion rates. This resulted in approximately four additional students finishing Year 12 at the Murri School who would otherwise not have, out of a class of 12 students. Year 12 attainment has been estimated to increase future earnings by 18.6% for males and 14.5% for females (Wilkins, 2015). Taking into account the increased lifetime earnings, four students attaining Year 12 through the Murri School results in a benefit in net present value (NPV) terms of \$0.7 million or \$3,118 per student attending the Murri School in 2016 dollars.

Further analysis also showed that attendance rates at the Murri School are on average higher than those for all Aboriginal and Torres Strait Islander students in Queensland. While the benefits of this have not been quantified, studies have shown that school attendance is important for educational achievement. A report by Hancock et al (2013) found that average academic achievement on the National

Assessment Program – Literacy and Numeracy (NAPLAN) tests declined with any absence from school, and continued to decline as absence rates increased.

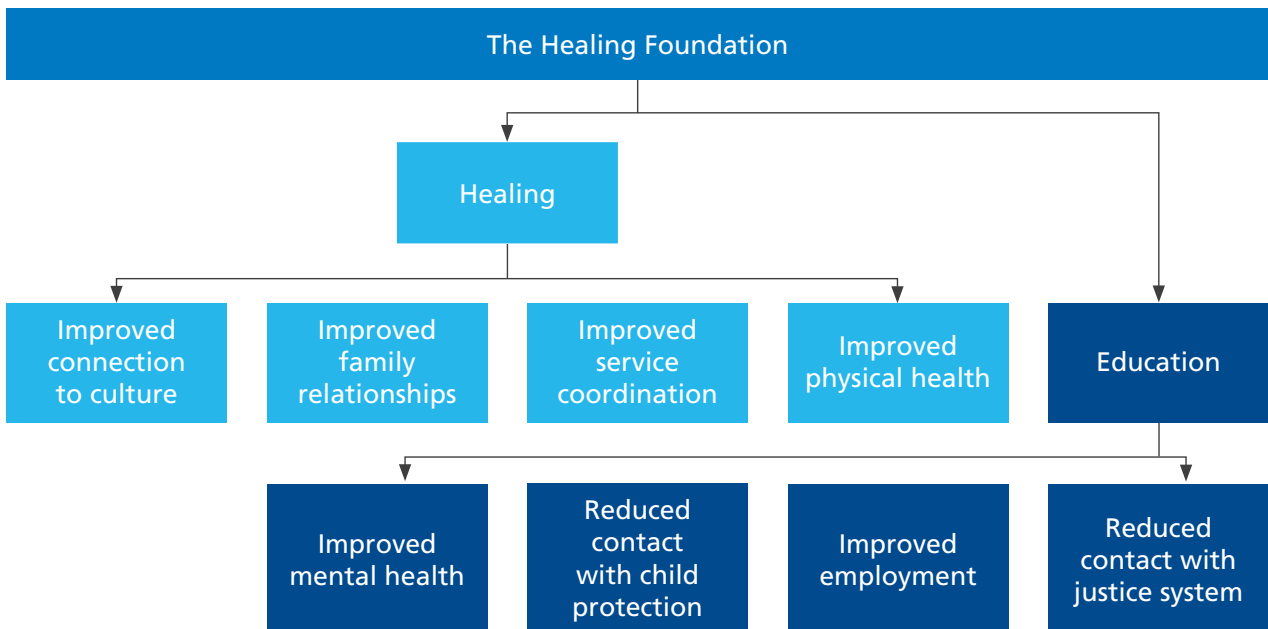
Improved mental health

In order to assess psychological wellbeing at the Murri School, all students in Years 3 to 12 were administered the Strengths and Difficulties Questionnaire (SDQ) in 2015 and 2016. The SDQ is acknowledged as a valid measure of emotional and behavioural problems amongst Australian school students, and is a behavioural screener of students’ mental health, resilience and risk factors. Of the students who were surveyed in 2015 and 2016, a drop in ‘abnormal’ and ‘borderline’ rates can be converted into representing a gain of wellbeing of \$1.0 million in NPV terms. This equates to \$4,425 per student at the Murri School.

Less contact with child protection

Aboriginal and Torres Strait Islander children and young people are over-represented in the child protection system. This analysis shows that the healing programs within schools could reduce the number of children entering child protection services and progressing through the system as they provide culturally competent, family based preservation and early intervention services. This is calculated to result in a benefit of \$3.9 million in NPV terms, or \$17,105 per student at the Murri School.

Figure 1 : Relationship between the Murri School healing program and the tangible benefits



Key: ■ Critical healing element ■ Tangible benefit

Source: Deloitte Access Economics

Less contact with the justice system

Due to the Murri School improving educational outcomes for students and focusing on establishing family and cultural connections, the Murri School could reduce the number of incarcerations amongst their cohort. This is calculated to result in a benefit of \$0.8 million in NPV terms, or \$3,599 per student at the Murri School.

Total benefits

As is shown in Table i the total economic benefit attributed to the Murri School is \$6.5 million which is approximately \$28,248 per student compared to the average Aboriginal and Torres Strait Islander student in a state school. The largest benefit is the savings from decreasing usage of child protection services (\$17,105) followed by the improvements in mental health (\$4,425).

Table i : Total benefits attributed to the Murri School, 2016

	Total (\$ m NPV)	Per person (\$ NPV)
Education	0.7	3,118
Mental health	1.0	4,425
Child protection	3.9	17,105
Justice system	0.8	3,599
Total	6.5	28,248

Source: Deloitte Access Economics calculations.

Note: Numbers may not sum exactly to totals due to rounding

Costs

For cost analysis, the counter-factual would be that the Murri School approach to education is replicated in state schools that have similar characteristics to the Murri School. Therefore, the ideal comparator would be a state school that is equivalent in Aboriginal and Torres Strait Islander composition and geographic location to the Murri School. However, due to the complexity of Queensland state school funding, where there are approximately 80 different grants allocated to schools (Department of Education and Training, 2016), there are challenges involved in determining any single state school for a cost comparator to the Murri School.

As a result, the average Queensland state schools' funding per pupil was taken to estimate the funding difference. This is a conservative estimate as it is likely that a state school with mostly Aboriginal and Torres Strait Islander students will be more expensive than the average Queensland state school, as recognised by higher funding for schools with mostly proportion of Aboriginal and Torres Strait Islander students.

In 2016, the average Queensland state school cost was approximately \$16,151 per student (Productivity Commission, 2016) while the Murri School cost was \$19,341



per student (My School website). Therefore, the Murri School was approximately \$3,190 more expensive than the average Queensland state school.

Benefit cost ratio

The benefit cost ratio (BCR) for the healing program at the Murri School was calculated by dividing the benefits per student (\$28,248) by the costs (\$3,190). This results in a BCR of 8.85 (calculations are shown in Table ii). This indicates that, on average, for every additional dollar invested in the healing program at the Murri School there is an \$8.85 return in benefits in NPV terms.

Table ii : BCR calculation

	Per person
Benefits	\$28,248
Costs	\$3,190
BCR	8.85

Source: Deloitte Access Economics calculations.

It is difficult to assess the extent to which these cost savings would be applicable if the Murri School educational framework was applied to all schools in Queensland with mostly Aboriginal and Torres Strait Islander students. However, the results of this cost benefit analysis suggest that the Murri School delivers above average results for its students, and that there is scope for potential expenditure savings in mental health, the child protection and justice systems, as well as improved wellbeing and lifetime earnings for students, should the program be implemented at a larger scale.

On average, for every additional dollar invested in the healing program at the Murri School there is an \$8.85 return in benefits, in net present value terms.

1. Introduction

This report has been structured in the following manner:

- **chapter 1** provides an introduction to this report, including a background to Aboriginal and Torres Strait Islander issues, the Queensland education system and the Murri School
- **chapter 2** outlines some intangible benefits of the healing programs at the Murri School
- **chapter 3** outlines tangible benefits which can be attributed to the Murri School
- **chapter 4** provides the costs of the Murri School
- **chapter 5** presents the results of the cost benefit analysis of the Murri School.

1.1 Study purpose and method

The purpose of this report is to assist the Healing Foundation in evaluating The Aboriginal and Islander Independent Community School (hereafter referred to as the Murri School) healing program and to provide a cost benefit analysis of children in this program compared to outcomes of Aboriginal and Torres Strait Islander children in Queensland generally.¹ A primary focus is to determine the benefits of healing intergenerational trauma.

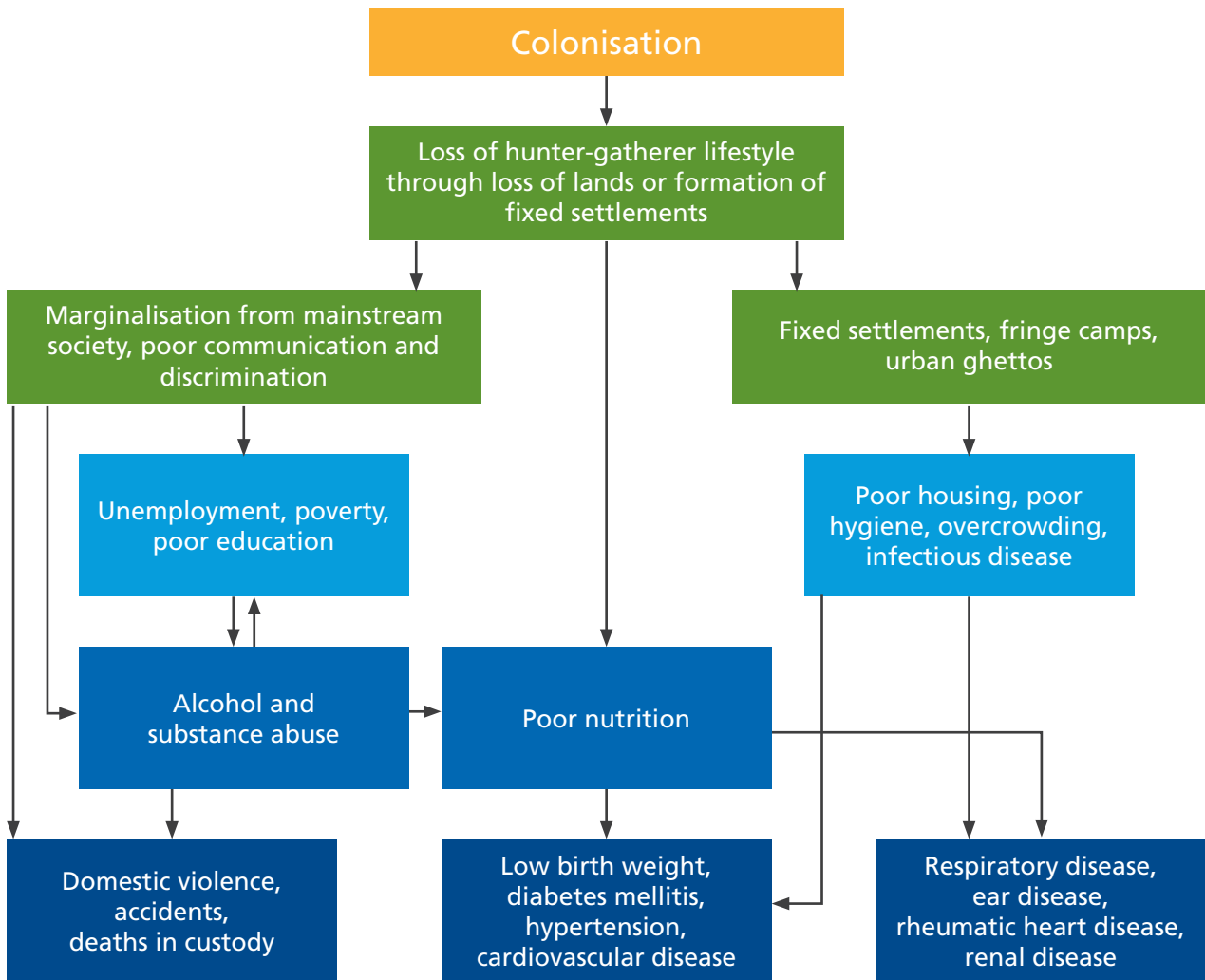
This study provides an indication of the benefits of applying the Murri School educational framework to similar schools with mostly Aboriginal and Torres Strait Islander students. While average Aboriginal and Torres Strait Islander schools and students are used as benchmarks for data reasons, this does not infer that Murri program outcomes would be replicated if applied to all Queensland schools.

1.2 Aboriginal and Torres Strait Islander issues

Colonisation had long lasting negative impacts on the Aboriginal and Torres Strait Islander community. The trauma experienced by the Aboriginal and Torres Strait Islander population has been passed from generation to generation and has culminated in widespread disadvantage in the form of lower life expectancy, school attainment, health outcomes and employment outcomes. The impact of colonisation on Aboriginal and Torres Strait Islander people is shown in Figure 1.1.

¹ In this report, we refer to Aboriginal and Torres Strait Islander people meaning Aboriginal and Torres Strait Islander people.

Figure 1.1 : The impact of colonisation on Aboriginal and Torres Strait Islander Australians



Source: Matthews (1998)

Coade et al (2008) report that the main forms of trauma affecting Aboriginal and Torres Strait Islander people are:

- **historical/cultural trauma** – Stolen Generations, racism, poverty
- **community trauma** – substance abuse, violence, multiple deaths
- **family trauma** – intergenerational trauma, domestic violence, loss of parenting skills
- **individual trauma** – child abuse and neglect affecting development, attachment to others and culture.

The 2016 *Closing the Gap* (Department of Prime Minister and Cabinet, 2016) report shows that there is still a long way to go in terms of bridging the divide between Aboriginal and Torres Strait Islander and non-Indigenous outcomes. Although targets around reducing child mortality and improving year 12 attainment are on track, there were mixed results in terms of educational attainment and improving life expectancy.

1.2.1 The Healing Foundation


In February 2008, more than two centuries after colonisation, the Australian Government gave a national Apology to the Stolen Generations and Aboriginal and Torres Strait Islander peoples. Subsequent funding and consultation with Aboriginal and Torres Strait Islander peoples established an Aboriginal and Torres Strait Islander Healing Foundation (the Healing Foundation). The Healing Foundation is an independent Aboriginal and Torres Strait Islander organisation with a focus on building culturally strong, community led healing solutions for Aboriginal and Torres Strait Islander people in Australia, through providing support to organisations around the country to design and deliver healing programs that work for their communities. According to the Healing Foundation definition;

“Healing refers to recovery from the psychological and physical impacts of trauma. For Aboriginal and Torres Strait Islander people this trauma is predominantly the result of colonisation and past government policies. Healing is not an outcome or a cure but a process; a process that is unique to each individual. It enables individuals, families and communities to gain control over the direction of their lives and reach their full potential. Healing continues throughout a person’s lifetime and across generations. It can take many forms and is underpinned by a strong cultural and spiritual base.” (The Healing Foundation, 2016).

The Healing Foundation has been working since 2011 to support the development of healing programs to address the legacy of intergenerational trauma. The evidence to date indicates that best practice in healing for children and young people includes the need to have healing occur between children, families and communities to strengthen the network of support available to them; this includes holistic responses that integrate services in one locality and the development of a trauma informed framework as a lens through which to build culturally safe and caring environments for children and their families to experience.

1.2.2 The Murri School

The Healing Foundation provides funding for healing programs at the Murri School in order to address intergenerational trauma amongst Aboriginal and Torres Strait Islander children.



The Murri School provides services to Aboriginal and Torres Strait Islander children living in the Greater Brisbane area, and was developed to not just educate children, but to ensure that cultural beliefs and practices were incorporated into the education of children. Education at the Murri School is delivered in a holistic approach which takes into account a student's health, spiritual, community and educational needs. Strategies adopted at the school to meet these needs include the following:

- the incorporation of a vocational learning skills centre (the Kulkathil Community Skills Centre) within the school catering for students and for the wider community
- at secondary level, a unitised vertical curriculum to cater for multi-age classes
- a health out-clinic at the school to monitor general health and hearing loss in particular
- a private bus system to transport students to and from school
- the provision of school meals
- programs for parents, including hearing, health, nutrition, legal rights and child protection legislation
- tutors who are able to give the students one-on-one tuition up to four hours per week
- an in-house speech/language pathologist who assesses the children in a variety of areas, including reading and vocabulary, but also across the health spectrum.

1.3 Education in Queensland

The outcomes of schooling systems are influenced by a range of factors, including the characteristics of a school, the students that attend the school, and the policy and regulatory environment in which the school system operates. It is ultimately the combined influence and interaction of these variables that determines the outcomes of students and the cost at which these outcomes are delivered.

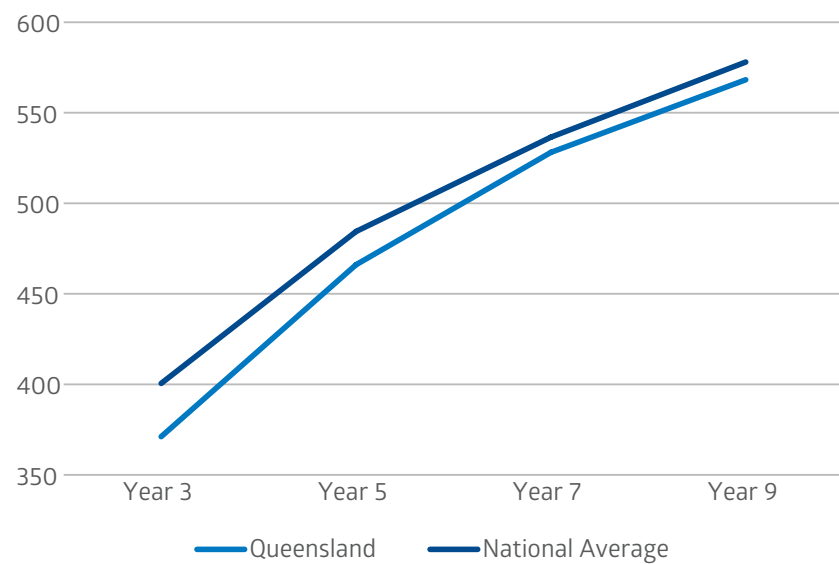
1.3.1 Queensland compared to Australia

There are several factors which set the Queensland state school system apart from other large Australian jurisdictions. First, the Queensland state school system contains both a large number of very small schools (with more than 100 containing fewer than 25 students) and very large schools (with 11 schools educating more than 2,000 students). The large number of very small schools is in part a reflection of the fact that many students live in a non-metropolitan area. Almost a third of Queensland's students live in a non-metropolitan area compared to 25% in other large states such as New South Wales and Victoria. Second, approximately 7.8% of Queensland state school students identify as Aboriginal or Torres Strait Islander compared to 5.2% in New South Wales and only 1.4% in Victoria. Queensland students on average also have higher levels of socio-economic disadvantage than the rest of Australia, with the average Index of Community Socio-Educational Advantage (ICSEA) score of Queensland students being 975 compared to a national average of 1000 ¹.

¹ The ICSEA ranks schools based on parent's occupation and education, geographical location and the proportion of Aboriginal and Torres Strait Islander students at the school. The ICSEA has an average score of 1000, any lower than this value indicates the lower the level of educational advantage of students who go to the school.

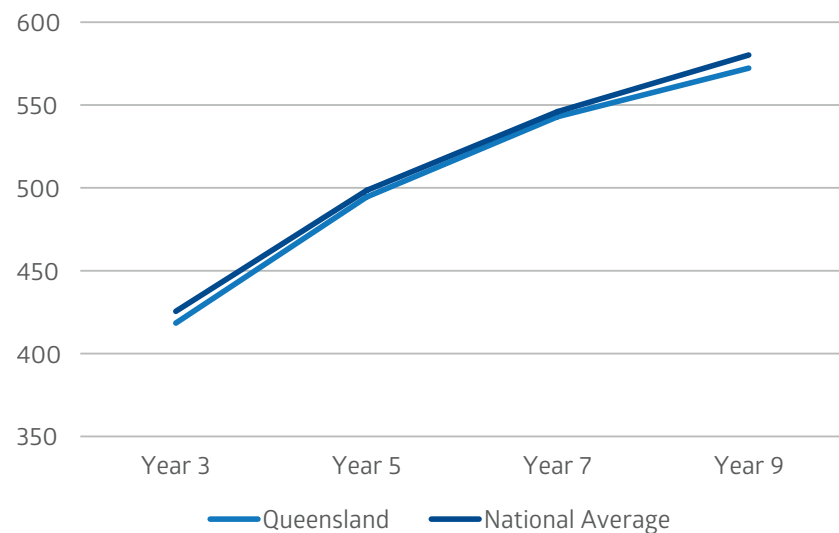
In assessing the performance of the Queensland state school system on standardised tests, there are a number of areas in which it is clearly performing well. In particular, the performance of Queensland state schools on standardised tests such as NAPLAN has improved strongly over time. As illustrated in Chart 1.1 and Chart 1.2, 2008 reading scores for Queensland students were significantly below the national average for all year groups. By 2015 NAPLAN reading scores for Queensland students were significantly closer to the national average, with no statistically significant differences in reading performance between students in Queensland and Australia as a whole.

Chart 1.1: NAPLAN reading scores by year group, 2008



Source: ACARA (2016).

Chart 1.2: NAPLAN reading scores by year group, 2015



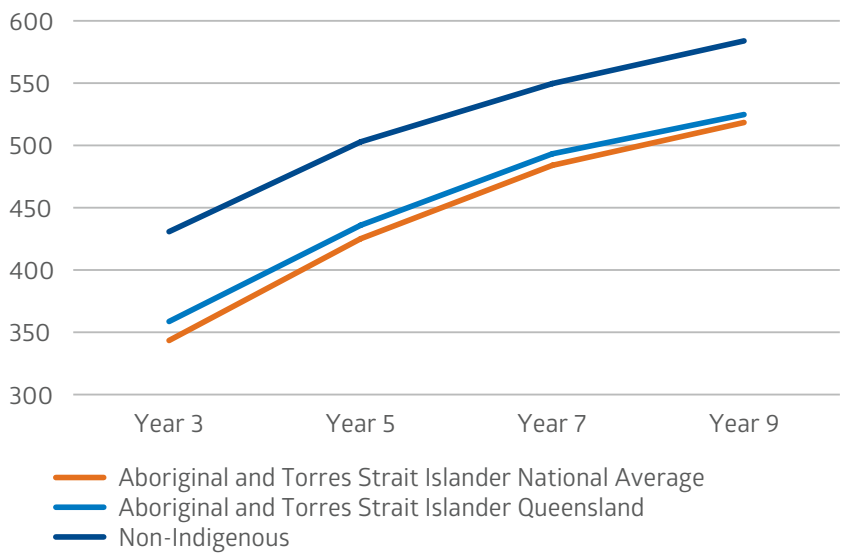
Source: ACARA (2016).



1.3.2 Aboriginal and Torres Strait Islander students compared to non-Indigenous students

As shown in Chart 1.3, NAPLAN scores for students who identify as Aboriginal and Torres Strait Islander are significantly lower than non-Indigenous scores. However, Aboriginal and Torres Strait Islander students in Queensland perform higher than the national average for Aboriginal and Torres Strait Islander students.

Chart 1.3: NAPLAN reading scores by subgroup, 2015



Source: ACARA (2016).

2 Critical healing elements and outcomes of the Murri School

“The normally withdrawn and quiet student came alive with stories about the mythical creatures he had met and interacted with in his country in Northern Territory, as the other students listened in awe. His mother joined in as did other parents relaying stories of culture and the lessons they had learnt. This experience was very powerful.”

Murri School report to The Healing Foundation, 2016

While many Healing Foundation activities at the Murri School have a range of quantifiable benefits, some benefits cannot be quantified, such as improvement in connection to culture and improved family relationships. These benefits are none the less extremely valuable outcomes of the Healing Foundation and Murri School, and so are discussed in this chapter. In turn, they lead to the quantifiable benefits that are discussed and measured in the following chapter.

2.1 Connection to culture


The trauma experienced by Aboriginal and Torres Strait Islander people as a result of colonisation has devastating consequences on Aboriginal and Torres Strait Islander children’s connection to their culture. The disruption to connection to culture and the negative impacts on cultural identity has had lasting negative effects, which are being passed from generation to generation resulting in intergenerational trauma. The cumulative effect of this intergenerational trauma severely interferes with the capacity of Aboriginal and Torres Strait Islander people to fully and positively participate in their lives and communities, in turn leading to widespread disadvantage. Assimilationist policies resulting in the removal of Aboriginal children from their families until the 1970s have had further devastating impact on the lives of Aboriginal people and future generations. Their lasting legacy for Aboriginal and Torres Strait Islander people has included dispossession, destruction of traditional lifestyles, rapid cultural change, disruption of families and communities, discrimination, cultural exclusion, poverty, lack of educational opportunities and poor health.

The Healing Foundation’s intergenerational trauma funding initiative is aimed at acknowledging and addressing the devastating impact intergenerational trauma has had on young Aboriginal and Torres Strait Islander people. The overarching goal of the initiative is to assist young Aboriginal and Torres Strait Islander people to heal from their distress and prevent the continuing transmission of trauma through future generations by improving the social and emotional wellbeing of young people through strengthening cultural connectedness and identity, providing opportunities for individual and family healing, and building skills to manage pain and loss in a way that allows for a hopeful future (The Healing Foundation, 2013).

Whilst the healing journey is unique to each individual, a supportive environment that promotes and enables healing for those on their journey is essential.

A range of project activities are delivered through the initiative including:

- healing camps for young people and families
- healing circles
- use of country to support increased cultural connection
- outreach support to young people and families
- building young people’s pride and identity through cultural activities and experiences
- mentoring and personal development programs for young people
- participation in employment and education programs
- counselling and therapeutic support for young people and families.



From January 2016 to June 2016, 230 children and young people took part in healing activities at the Murri School as well as 180 adult family members. In addition to a wide range of other activities, students took part in Dreamtrack daytrips and camps, went on a student camp to Mudjimba, and families took part in family camps.

The camps are an integral part of engaging students and providing an avenue for the children and young people to develop and discover their connection to culture. At one of the camps, 30 students completed a questionnaire providing feedback about their experience at the camp. Of the 30 students, 23 (77%) said that the camp activities helped them strengthen their connection to culture (Murri School, 2016).

2.2 Improved family relationships

Students at the Murri School may have difficult relationships with their parents, grandparents or extended family. The intergenerational trauma of Stolen Generations has impacted the strength of families and parenting. Healing programs at the Murri School work towards improving the family relationships of its children. This is done through a range of activities including:

- ongoing student/parent initiated counselling sessions delivered on a needs basis in response to immediate issues
- individual case management
- ongoing student/parent initiated counselling sessions delivered on a needs basis in response to immediate issues
- family camps.

From January 2016 to June 2016, the Murri School provided counselling sessions on a needs basis to 405 children and 129 family members. They provided individual case management to a further 108 children and 43 family members. Finally, 76 family members took part in family camps to Amity Point on Stradbroke Island and to Tallabudgera. The Murri School has countless individual case studies evidencing improved family relationships through the healing activities:

A 14 year old boy was struggling with his relationship with his grandparents after moving away from them to live with his biological father. Attending one of the family camps proved to be a bonding experience for the boy and his grandparents, and by the end both parties appeared to renegotiate the strong and positive connection that previously marked their relationship.

Discussions of a 13 year old girl with a psychologist at Murri School helped her to explore feelings regards living with her grandparents away from her parents. She was encouraged in talking to her grandparents about how she felt, resulting in a noticeable shift in her relationship with her grandparents. She has become more grateful for what they have sacrificed in taking on the care of herself and her brother and a growing acceptance that for now it was best for her to stay living with her grandparents.

A single dad of five children was struggling to parent and meet the needs of his children. He has attended many family camps and been able to meet other parents, and over time staff observed a strengthening and growing competence in his ability to meet the changing needs of his children.

A parent of a Year 5 boy made contact and asked what to do when her son didn't come home after school when he was visiting friends. When this happened the mother became overwhelmed with fear and anxiety, paralysis and distress. When the boy finally returned home she frequently exploded with pent up anger and this was damaging the relationship between the mother and her son. We encouraged the mother to make contact with the parent concerned, share phone numbers and develop a system of checking up to make sure the kids were okay and staying out of trouble. What appears from the outside as a relatively simple strategy was for this mother really helpful, and for her it also validated her need to keep her son safe.

2.3 Improved service coordination

Many students at the Murri School come in contact with a wide range of services which are not always connected or coordinated. The Murri School helps students and parents navigate services by attending meetings/telephone consultations with agencies including DOCS, Centrelink, Housing, Evolve, Kummara, Kurbingui and Distance Education.

The school has also collaborated with the Consortium of Queensland Universities Externship Coordinators which represents Postgraduate Clinical, Neuro and Educational Developmental Psychology externship training programs in Brisbane. This collaboration has led to two interns joining the Psychology Service operating at the Murri School each semester. This has not only enabled the provision of state of the art assessment and treatment of individuals and groups of students, but has also provided opportunities for post graduate psychology students to receive a strong cultural induction into working effectively with Aboriginal and Torres Strait Islander students.


Finally, as the following section will elaborate, the Murri School also coordinates physical health services in collaboration with the Institute for Urban Aboriginal and Torres Strait Islander Health.

2.4 Improved physical health

The Murri School, in collaboration with the Institute of Urban Aboriginal and Torres Strait Islander Health offer the following health services:

- immunisation programs
- speech and language pathology
- exercise physiology
- optometry
- physiotherapy
- health check days
- health and wellbeing expos.

In addition to this, the Healing Foundation holds parent morning teas every week to coincide with paediatrician and allied health visits. Liaison and transport services are also provided for students and family members to attend specialist medical appointments outside of the Murri School such as optometrist, hospital outpatient,



dentist, and hearing services. From January 2016 to June 2016, four health check days were held which involved all students being assessed by audiologists, occupational therapists, podiatrists, optometrists and other allied health services.

The provision of physical health services by the Murri School is extremely valuable, as Aboriginal and Torres Strait Islander Australians have significantly worse health outcomes than non-Indigenous Australians. This is evident when comparing the life expectancy of Aboriginal and Torres Strait Islander and non-Indigenous Australians. In 2010-2012 the life expectancy of an Aboriginal and Torres Strait Islander man was 69.1 years, while for a non-Indigenous man it was 79.7 years. Similarly, Aboriginal and Torres Strait Islander women had a life expectancy of 73.7 years while non-Indigenous women had a life expectancy of 83.2 years (Australian Institute of Health and Welfare (AIHW), 2016).

McCuaig and Nelson (2012) have written a resource sheet for engaging Aboriginal and Torres Strait Islander students through school-based health education, which is in accordance with many of the initiatives at the Murri School. They state that Aboriginal and Torres Strait Islander young people have access to a range of resources in their cultural, social and cognitive lives that educators can recognise and build upon. McCuaig and Nelson also argue that schools are uniquely placed to teach the knowledge, skills and attitudes that underpin healthy living. They emphasise the importance of health education which is informed by local health issues, values and beliefs of individual students and their community and the importance of health education being underpinned by positive partnerships with parents, community members and health professionals.

The relationship between education and health has been established in a number of articles such as the AIHW (2016a) which states:

“Educational attainment is associated with better health throughout life. Education equips people to achieve stable employment, have a secure income, live in adequate housing, provide for families and cope with ill health by assisting them to make informed health care choices.”

The AIHW article implies that in addition to education being able to enable more informed healthcare choices, higher levels of education also improves other areas of life which then improves overall health outcomes.

Another article by Ross and Wu (1995) states that those individuals with higher levels of education are less likely to indulge in risky health behaviours such as smoking, unhealthy eating and alcohol use. These health behaviours are risk factors for a multitude of other health conditions. Analysis which attempted to quantify the effect of education on health estimated that in 2005, a 25 year old man in the United States with a high school education could expect to live 6.7 years longer than a man who did not have a high school education, while a woman would be expected to live 7.0 years longer (Hahn et al, 2015).

Increasing educational attainment for Aboriginal and Torres Strait Islander students will result in a reduction in health expenditure as Aboriginal and Torres Strait Islander people will have better health outcomes. However, to determine the extent of this reduction is difficult to determine. A reduction in risky health behaviours impacts many health conditions to different degrees. For example by reducing risky health behaviours such as smoking, this will decrease an individual's risk of lung cancer, Chronic Obstructive Pulmonary Disease and asthma. As such, capturing and identifying all these benefits cannot easily be undertaken. Hence, they are noted in this chapter as contributing to the quantified benefits discussed and measured in the following chapter.

3 Tangible benefits of the Murri School

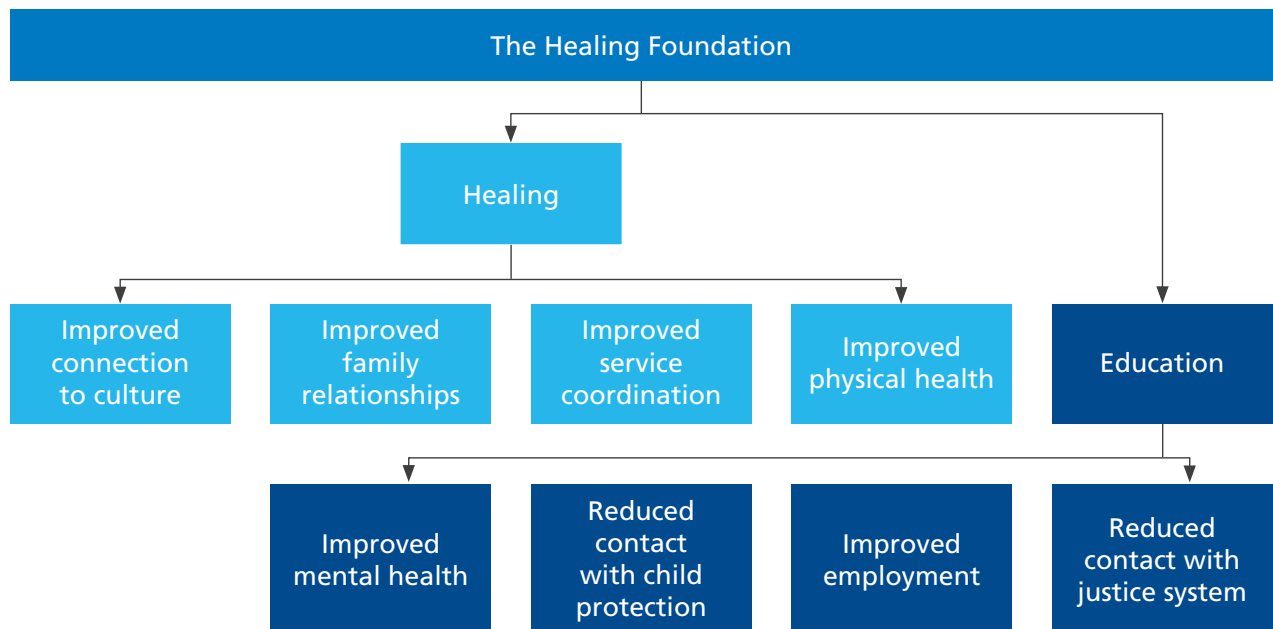
The following chapter provides an overview of the quantifiable benefits of the Healing Foundation initiative at the Murri School. Due to data constraints, the benefits of the Murri School healing program are compared to the outcomes of the average Aboriginal and Torres Strait Islander student in Queensland.

3.1 The relationship between the critical healing elements and the tangible benefits

The four components discussed in section 2 play a critical role in improving life outcomes for children. Although they cannot be quantified they lead to other benefits that can be quantified. The tangible benefits discussed in this section can be directly attributed to the healing elements of the Murri School.

Figure 3.1 shows a simplified version of the relationships between the critical elements of the healing program and tangible outcomes of the program. The critical healing elements discussed in section 2 are the primary output of the Murri School Healing Program. These elements then lead to tangible outcomes, the primary one being education. The critical healing elements then lead to improved mental health, reduced contact with the child protection system, improved employment and reduced contact with the justice system. However, the increased educational attainment also plays a role in improving these outcomes.

Figure 3.1 : Relationship between the Murri School healing program and the tangible benefits



Key: ■ Critical healing element ■ Tangible benefit

Source: Deloitte Access Economics



3.2 Improved educational attainment and school completion

A direct benefit of the Murri School is the improved educational outcomes of students. High school educational attainment is strongly correlated with further education, employment and social wellbeing. As a result, receiving a quality education can act as a springboard for life and play a significant role in determining a person's career prospects, financial security and health (Healing Foundation, 2013).

3.2.1 Benefits of education

A report by the AIHW states that the difference in educational attainment between Aboriginal and Torres Strait Islander and non-Indigenous people is a critical factor in the difference in employment rates between the two groups (Karmel et al, 2014). This claim is supported by analysis performed by the ABS. In 2011, Aboriginal and Torres Strait Islander people were 20.5% less likely to be participating in the labour force than non-Indigenous people (55.9% compared to 76.4%) (Australian Bureau of Statistics (ABS), 2014). Analysis by the ABS found that adjusting for education had the largest effect on the gap in labour force participation rates between Aboriginal and Torres Strait Islander and non-Indigenous people. After adjusting for education, Aboriginal and Torres Strait Islander people were still less likely to be in the labour force (69.9% compared to 80%); however, the gap had decreased by half to a difference of approximately 10 percentage points (ABS, 2014). As such, a key element of the Closing the Gap strategy is to improve the rates of Aboriginal and Torres Strait Islander people who complete Year 12 or an equivalent qualification (Australian Government, 2013).

Education influences the economic outcomes of an individual by increasing their stock of human capital; the skills and abilities that workers can apply to the workplace and to their lives more generally. The human capital theory is perhaps the most widely accepted model used to analyse the contribution that education makes to individual earnings and productivity (McMahon, 2009; Leigh, 2008). Wilkins (2015) found that higher levels of education are associated with increased employment and weekly earnings. After controlling for cognitive ability, Wilkins (2015) found that completion of high school is associated with an 18.6% increase in earnings for men and a 14.5% increase in earnings for women, compared to people who completed Year 11 or below. As levels of education increase past high school, this is also associated with even better employment and earning outcomes; a bachelor's degree for example increases earnings by 40.7% for men and 31.9% for women (see Table 3.1).

Table 3.1: Effects of education on employment and earnings, 2012

	Employed		Employed full time		Weekly earnings full time employees	
	male	female	male	female	male	female
Base models						
Master's degree or doctorate	0.068	0.100+	0.120+	0.156	0.521	0.446
Graduate diploma or certificate	0.011+	0.13	0.061+	0.122	0.492	0.367
Bachelor's degree	0.019+	0.134	0.040+	0.107	0.454	0.335
Diploma or advanced diploma	0.022+	0.082	0.064	0.115	0.316	0.103
Certificate level 3 or 4	0.032	0.119	0.057	0.045	0.202	0.014+
Year 12	0.008+	0.075	0.015+	0.054	0.217	0.159
Controlling for cognitive ability						
Master's degree or doctorate	0.053	0.080+	0.112	0.145	0.471	0.421
Graduate diploma or certificate	-0.001+	0.107	0.056+	0.113	0.445	0.348
Bachelor's degree	0.009+	0.111	0.034+	0.094	0.407	0.319
Diploma or advanced diploma	0.015+	0.065	0.061	0.104	0.289	0.084
Certificate level 3 or 4	0.03	0.109	0.057	0.04	0.193	0.009+
Year 12	0.002+	0.064	0.013+	0.047	0.186	0.145

Note: Effects are compared to attainment of Year 11 and below.

Source: Wilkins (2015).

The Productivity Commission has also estimated average hourly wage increases for people who have completed Year 12 compared to people who have not completed Year 12. As Table 3.2 shows, the estimated increase in hourly wage for those who have completed year 12 is 12.8% for males and 10.1% for females. For people with a university degree, the Productivity Commission estimates a rise in earnings of 38.4% for males and 36.7% for females (Forbes et al, 2010).

Table 3.2: Average marginal effects of education on hourly wages

	Men	Women
Bachelor or higher	38.4%	36.7%
Diploma of certification	13.8%	11.4%
Year 12	12.8%	10.1%

Source: Forbes et al (2010).

3.2.2 Year 12 completion rates

While significant improvements have been made, Aboriginal and Torres Strait Islander people in 2014-15 aged 15 years and over were still less than half as likely as non-Indigenous people to have completed Year 12 or equivalent (rate ratio of 0.4), after adjusting for differences in the age structure of the two populations (ABS, 2016a). Increasing Year 12 attainment rates is therefore a crucial aspect in closing the gap. Table 3.3 shows the number of students enrolled at the Murri School in semester 1 and semester 2 of each year group, in 2014.

Table 3.3: Enrolment Data, 2014

	y8	y9	y10	y11	y12	Total
Semester 1	16	15	11	17	13	72
Semester 2	18	15	9	9	12	63

Source: Murri School (2014).

In 2014, 80% of Year 12 students at the Murri School left with a Queensland Certificate of Education, Vocational Education Training, school based apprenticeships and traineeship or International Baccalaureate Diploma (Queensland Government, 2015). Based on the assumption that of the 16 students who were in Year 8, 13 will still be enrolled in Year 12, the Year 12 attainment rate at the Murri School in 2014 was 60%. The most recent survey that analyses Aboriginal and Torres Strait Islander Year 12 attainment, the 2014-2015 ABS National Aboriginal and Torres Strait Islander Social Survey, found that the proportion of Aboriginal and Torres Strait Islander people who had completed Year 12 or equivalent was 26% (ABS, 2016a), suggesting an additional 34% of children completed Year 12 through the Murri School, or approximately 4 children of the Year 12 semester 1 cohort who may not have completed year 12 had they attended a different school.

“For tertiary-educated Indigenous people, there is no gap”

Malcolm Turnbull, Prime Minister of Australia ³

As mentioned in section 3.1.1, completion of Year 12 results in an average increase in income of 16.6% after controlling for cognitive ability (Wilkins, 2015) ². Average weekly earnings and employment rates were based on ABS (2016e, 2016f) data. This was used to calculate the lifetime income of an individual. An average person can expect to earn approximately \$1,083,447 over their lifetime. By increasing this by 16.6% each year, completion of Year 12 will increase the expected lifetime earnings to \$1,262,757, an increase of \$179,310.

Four additional students were estimated to have achieved Year 12 through the Murri School, resulting in a net benefit of \$0.7 million or \$3,118 per student attending the Murri School in 2016.

3.2.3 Attendance rates

There is a sizable gap between Aboriginal and Torres Strait Islander and non-Indigenous students’ attendance rates. In semester 1 in 2015, the national school attendance rate for Years 1 to 10 was 92.6%. In 2015, the national attendance rate for Years 1 to 10 for Aboriginal and Torres Strait Islander students was 83.7%, over nine percentage points lower than the comparable rate for non-Indigenous students (93.0%) (Department of Prime Minister and Cabinet, 2016). Table 3.5 and Table 3.4 show that for Year 1 to 10, the Murri School had higher average attendance rates than rates for Aboriginal and Torres Strait Islander students in Queensland in all years except 2015. In 2012 to 2016 for year groups 1 to 10, attendance rates at the Murri School were an average of four percentage points higher than the rates of Aboriginal and Torres Strait Islander students in Queensland. The average rate for all Years 1 to 10 from 2012 to 2016 was 88% at the Murri School, higher than both the national average for Aboriginal and Torres Strait Islander students and Aboriginal and Torres Strait Islander students in Queensland (84%).

Table 3.4: Student attendance by year group, Murri School, 2012-2014 (%)

	y1	y2	y3	y4	y5	y6	y7	y8	y9	y10	y11	y12	Y1-10
2016	84	93	89	90	90	92	89	89	90	82	-	-	89
2015	85	86	88	85	91	86	89	75	79	79	-	-	84
2014	89	92	90	85	93	88	92	82	89	82	72	68	88
2013	88	92	93	90	95	86	85	89	77	90	57	61	89
2012	92	90	91	93	93	92	89	94	87	83	81	79	90
2012-2016	90	91	91	89	94	89	89	88	84	85	70	69	88

Source: The Murri School (2014).

² This is an average of the 18.6% increase in earnings for men who have completed year 12 and the 14.5% increase in earnings for women who have completed year 12

³ <http://www.abc.net.au/news/2017-02-14/closing-the-gap-report-to-show-indigenous-policy-progress/8267148>

Table 3.5: Aboriginal and Torres Strait Islander student attendance by year group, Queensland, 2012-2016 (%)

	y1	y2	y3	y4	y5	y6	y7	y8	y9	y10	y11	y12	Y1-10
2016	86	87	87	87	87	87	85	82	79	79	81	85	85
2015	86	87	87	87	87	87	85	83	81	78	81	84	85
2014	86	86	87	87	86	86	85	84	80	76	80	84	84
2013	84	86	86	86	86	85	85	83	78	76	78	81	84
2012	86	86	87	87	86	87	86	83	79	77	79	82	84
2012-2016	85	86	87	87	86	86	85	83	79	76	79	82	84

Note: Attendance rates from 2013-2016 are calculated using a different methodology to 2012 and comparisons between these years may not be possible.

Source: Queensland Government (2016).

School attendance is important for educational achievement. A report by Hancock et al (2013) found that average academic achievement on NAPLAN tests declined with any absence from school, and continued to decline as absence rates increased. The Murri School runs a holistic attendance strategy which emphasises the importance of participation and attendance, and shared responsibility of the school, community, parents and students to ensure daily attendance at school. Under the strategy, the school records and monitors student attendance and contacts a child's family if a child is absent without explanation for more than two days. Where non-attendance persists, family support workers visit the home to assist in minimising causes of non-attendance and to work with parents and carers to plan improved attendance, providing items such as clothing and food where this is an issue. The school also rewards attendance by providing an excursion for the class with the highest attendance rate for the term (the Murri School, 2014).

3.2.4 School engagement

Student engagement in school has been shown to be an important factor not only in encouraging student retention and attendance but also in affecting longer term outcomes for students. A longitudinal study by Abbott-Chapman et al (2014) used a School Engagement Index (SEI) which measures a student's level of enjoyment and boredom at school, as well as items correlated with other domains of engagement including 'learner self concept', 'motivation to learn', 'sense of belonging', 'enjoyment of physical activities', 'health and fitness image' and 'participation in activities'. Abbott-Chapman et al (2014) found that each unit of school engagement was independently associated with a 10% higher odds of achieving a post-compulsory school education. They also found that higher school engagement was independently associated with achieving higher status occupations 20 years later. Importantly, this was independent of a range of background factors.

School engagement is particularly important for Aboriginal and Torres Strait Islander students, as there is often a cultural mismatch between home and school environments for Aboriginal and Torres Strait Islander children attending schools designed around Western systems and values causing students to disengage or fail to see relevance in teachings (Krakouer, 2015). As is discussed in detail in Chapter 2, the Murri School runs many initiatives to improve student's connection to culture

“Through the camps, this student has now started to see himself and others, including the adults around him, in more positive ways and it made a real difference in terms of his engagement with learning.”

The Healing Foundation, 2013

and community, and improve engagement. In 2015, all students in attendance at the Murri School participated in screening through the *Psychological Sense of School Membership (PSSM) Scale – Sense of School Membership Subscale* (Goodenow, 1993). The screening was conducted to identify children who may need more detailed assessment and intervention, and to provide baseline data to help track the students' social and emotional wellbeing and sense of school membership at the Murri School. Of the 245 students enrolled at the time of screening, 162 were present and participated on the day(s) of screening. Student responses ranged from an average of 12.3 (Year 4/5) to 16.3 (Year 11) out of 20, and overall students at the Murri School reported moderate to high levels of school connectedness, indicating that in general students are proud to belong to the Murri School and feel respected by staff at the school, with the benefits quantified by Abbott-Chapman et al (2014) as a likely resulting benefit.

3.3 Improved mental health

Social and emotional wellbeing is a vital component of Aboriginal and Torres Strait Islander culture and is a protective factor against a range of adverse life events. To reflect the importance of this, the Queensland Government created a *Queensland Aboriginal and Torres Strait Islander Social and Emotional Wellbeing Action Plan 2016-18* (Queensland Mental Health Commission, 2016). Social and emotional wellbeing differs from mental illness and mental health wellbeing, as it also takes into account the social, emotional, spiritual, physical and cultural wellbeing of the individual (Haswell et al, 2013). Due to the holistic nature of social and emotional wellbeing obtaining an appropriate measure is difficult; however, it is agreed that there is a significant gap in mental health and life outcomes between Aboriginal and Torres Strait Islander and non-Indigenous people (Queensland Mental Health Commission, 2016).

This is evidenced in the fact that Aboriginal and Torres Strait Islander Queenslanders are more than one and a half times likely to die by suicide than non-Indigenous people, at a rate of 20.5 deaths per 100,000 people for Aboriginal and Torres Strait Islander people compared to 13.0 deaths per 100,000 people for non-Indigenous people (Queensland Mental Health Commission, 2016). Another commonly used measure for mental wellbeing is the reported psychological distress of Aboriginal and Torres Strait Islander people through the *National Aboriginal and Torres Strait Islander Social Survey*, conducted by the ABS (2016a). This survey measures a variety of factors that provide an indication of the social and emotional wellbeing of Aboriginal and Torres Strait Islander people in Australia.

The proportion of Aboriginal and Torres Strait Islander people reporting high/very high levels of psychological distress in the 2008 and 2016 survey are shown in Table 3.6. In 2016, 32.2% of the Aboriginal and Torres Strait Islander population reported having high/very high psychological distress. This is an increase of 3.0% from the 2008 reported figure. Compared to other areas of Australia, Queensland is below average in the proportion of Aboriginal and Torres Strait Islander people who reported feeling high/very high psychological distress. However, the rate of psychological distress in Queensland has increased from 2008 to 2016 at a rate that is higher than average.



Table 3.6: Proportions of those reporting high/very high psychological distress

State/territory	2016 (%)	2008 (%)	Difference (%)
NSW	31.3	31.6	-0.3
Vic.	37.5	35.1	2.4
QLD	32.2	29.2	3.0
SA	33.4	33.4	0.0
WA	38.1	31.8	6.3
Tas.	26.6	28.6	-2.0
NT	32.2	28.1	4.1
ACT	30.3	28.3	2.0
Average	32.7	30.8	1.9

Source: ABS (2016a) and ABS (2009).

Aboriginal and Torres Strait Islander people are affected by social disadvantage in a number of ways, and risks of poor mental health are not limited to Aboriginal and Torres Strait Islander adults. The history of colonisation and forced removal of children from their families has resulted in psychological repercussions including loss of spiritual and cultural identity, emotional and behavioural problems, substance abuse, family breakdown, and parenting difficulties resulting in a trauma which is intergenerational (Dobia and O'Rourke, 2011). Results from the Western Australian Aboriginal Child Health Survey by Zubrick et al (2006) found that over one in five students (22%) aged four to 17 years were living in families where seven to 14 major life stress events had occurred in the past 12 months.

In addition to damaging mental wellbeing, school attendance for children who experience stress events suffers. Zubrick et al (2006) found that of the students who had experienced seven to 14 life stress events, 62.2% had missed at least 26 days of school compared with 43.1% of students in families that had experienced no more than two life stress events. Poor mental health and the presence of stress are also damaging not only for attendance but student engagement and ability to learn (Dobia and O'Rourke, 2011).

3.3.1 The Strengths and Difficulties Questionnaire

In 2015 and 2016, all students in Years 3 to 12 were administered the Strengths and Difficulties Questionnaire (SDQ). The SDQ is acknowledged as a valid measure of emotional and behavioural problems among Australian school students, and is a behavioural screener of students' mental health, resilience and risk factors (Goodman, 1997). The questionnaire consists of 25 items categorised in subscales of emotional problems, conduct problems, hyperactivity, peer problems and pro-social factors. Subscale scores range between 0 to 10 with the total SDQ score ranging from 0 to 40. The SDQ consists of different questionnaire types; the parent-completed SDQ, the teacher-completed SDQ and the self-completed SDQ. At the Murri School the self-completed SDQ was completed by students for all year groups except Prep, Year 1 and Year 2 where teachers completed the questionnaire. In total,

161 students out of 220 students enrolled at the time were present and participated in the survey. Staff at the Murri School used the results from the 2015 survey in order to identify children who may require additional assistance.

There are several methods of categorisation of SDQ results, including a range from 'very high', 'high', 'slightly high' to 'average', or categorisation of 'normal', 'borderline' and 'abnormal'. For the self-completed version of the SDQ, scores of 0 to 15 fall under the 'normal' category, scores of 16 to 19 are 'borderline' and scores of 20 to 40 are 'abnormal'. Table 3.7 shows that of the 161 students who took the SDQ at the Murri School in 2015, 34 students (21%) had an abnormal score between 20 and 40. The abnormal scores ranged from 20 to 28, with an average score of 23. A further 34 students or 21% fell into the borderline category, with the remaining children classified as normal.

Table 3.7: SDQ scores of students at Murri School, 2015

Categorisation	Number of students	Percent	Average score	Range
Abnormal (20-40)	34	21%	23	20-28
Borderline (16-19)	34	21%	17	16-19
Normal (0-15)	93	58%	10	1-15

Source: Murri School (2015)

These results are approximately in line with a large Western Australian study by De Maio et al (2005) which found that almost one quarter (24%) of Aboriginal children aged 4 to 17 years who were assessed through carer responses to the SDQ were at high risk of clinically significant emotional or behavioural difficulties. Data from SDQ interviews collected by the New South Wales Health Department shows that an estimated 23% of Aboriginal children in New South Wales were at high risk of clinically significant emotional or behavioural difficulties. By comparison, the proportion of non-Aboriginal children in New South Wales at risk was found to be 9%. De Maio et al (2005) also conducted a survey of non-Aboriginal children in Western Australia for comparison and found that 15% of non-Aboriginal children were at high risk of clinically significant emotional or behavioural difficulties, a higher score than the New South Wales results but still significantly lower than scores for Aboriginal and Torres Strait Islander children.

Of the 161 students who were surveyed at the Murri School in 2015, 74 students were available and surveyed again in 2016. Of the 74 students who completed the questionnaire both in 2015 and 2016, 15 (20%) fell into the abnormal category and 16 (22%) fell into the borderline category in 2015. However, of the 15 students who in 2015 fell into the abnormal category, only two were still in the abnormal category in 2016. Of the remaining 13 students who were classified as abnormal in 2016, eight had dropped down into the normal range, and five into the borderline range. Within the cohort of students who completed the survey in 2015 and 2016, there were significantly fewer students in the abnormal category in 2016 than in 2015 (3 compared to 15) and more students in the normal range (56 compared to 43). The overall average score for all 74 students who completed the SDQ in 2015 and 2016 had dropped from 14.4 in 2015 to 11.8 in 2016. The 2015 and 2016 SDQ scores of students at the Murri School are shown in Table 3.8.

Table 3.8: SDQ scores of students at Murri School, 2015 and 2016

Category	2015	2016
Abnormal (20-40)	15	3
Borderline (16-19)	16	15
Normal (0-15)	43	56
Total	74	74

Source: Murri School (2015).

The burden of disease of mental illness or disability can be measured in disability-adjusted life years (DALYs), an approach developed to measure pain, suffering and premature mortality that was developed by the World Health Organization. The approach enables a comprehensive assessment of mortality and disability from diseases, injuries and risk factors, and is used in Australia by the AIHW (e.g. Mathers et al, 1999; AIHW, 2011). DALYs have two components - premature mortality, measured in years of life lost due to premature death (YLLs), and morbidity, measured as years of healthy life lost due to disability (YLD), where:

$$DALYs = YLLs + YLDs$$

In this case, no YLLs will be calculated through the SDQ scores. YLDs are calculated using disability weights determined by an expert group where a weight of 0 represents a year of perfect health and a weight of 1 representing death. In any year, the disability weight of a condition (for example, 0.447 for self-inflicted injuries) reflects a relative health state. In this example, 0.447 would represent losing 44.7% of a year of healthy life if the patient had self-inflicted injuries for a year. Furber et al (2014) conducted a mapping study and found that the disability weight for abnormal SDQ scores is 0.30, and the disability weight for borderline SDQ scores is 0.23.

The DALY approach has been successful in avoiding the subjectivity of individual valuation and is capable of overcoming the problem of comparability between individuals and across nations. DALYs can be converted into a dollar figure, using an estimate of the 'value of a statistical life year' (VSly), which in turn is derived from the value of a statistical life (VSL). As the name suggests, the VSL is an estimate of the value society places on an anonymous life. Economic literature focuses on willingness to pay – or, conversely, willingness to accept – measures of mortality and morbidity, in order to develop estimates of the VSL.

The Department of Prime Minister and Cabinet (2014) has provided an estimate of the VSly of \$182,000 in 2014. This was inflated to 2016 dollars using CPI (ABS, 2016d), resulting in the value of the VSly in 2016 dollars of \$184,730. Multiplying DALYs by the VSly gives the dollar value of the burden of disease or wellbeing lost for children from health conditions.

Taking into account a disability weight of 0.30 and VSly of \$184,730, each child in the abnormal SDQ range represents a loss of wellbeing of \$55,419 in 2016⁴. Similarly, each child in the borderline range with a disability weight of 0.23 costs \$42,488. Based on the assumption that intervention from the Murri School healing program caused the drop of 8 children's SDQ scores from abnormal to normal, this results in a benefit of \$443,352. A further 5 children went from abnormal to

⁴ Assuming that the SDQ score represented the average state of wellbeing for the student for that year.

borderline (saving \$12,931 a child), resulting in a benefit of \$64,656. Finally, 12 students moved from the borderline to the normal range, resulting in a saving of \$509,855. As a result, the total benefit calculated through the improvement of the SDQ scores or the burden of mental health is approximately \$1.0 million. This equates to \$4,425 per enrolled child at the Murri School.

Table 3.9: Benefits of the Murri School in mental health intervention

SDQ change 2015-2016	Benefit per student	Number of students	Total benefit
Abnormal to normal	\$55,419	8	\$443,352
Abnormal to borderline	\$12,931	5	\$64,656
Borderline to normal	\$42,488	12	\$509,855

Source: Murri School (2016), Furber et al (2014) and Deloitte Access Economics calculations.

In 2014-15, Aboriginal and Torres Strait Islander children were six times as likely as non-Indigenous children to be receiving child protection services in Queensland.

AIHW, 2016b

3.4 Reduced contact with child protection

Child abuse is any type of action, or inaction, that resulted in, or is likely to result in, significant harm or injury to a child, or risk of significant harm or injury to a child. Child abuse includes emotional and psychological abuse, neglect, physical abuse, sexual abuse and a child being forced to live with family violence.

Aboriginal and Torres Strait Islander children and young people are over-represented in the child protection system. In the 2014-15 financial year, Aboriginal and Torres Strait Islander children were six times as likely as non-Indigenous children to be receiving child protection services in Queensland (AIHW, 2016b). Child protection continues to be a problem within Aboriginal and Torres Strait Islander communities as the number of Aboriginal and Torres Strait Islander children in child protection has increased significantly in Queensland from 20.8 Aboriginal and Torres Strait Islander children in out-of-home care (OOHC) per 1,000 children aged 0 to 17 years in 2004-05 to 52.4 per 1,000 children by 2014-15 (AIHW, 2016b; AIHW, 2006).

Contact with child protection services is more common for children who live in low socio-economic areas compared to those living in high socio-economic areas. The AIHW recorded the number of children who were subjects of substantiations⁵ by socio-economic area and Aboriginal and Torres Strait Islander status in 2014-15. Analysis of these data found that Aboriginal and Torres Strait Islander children with the lowest SES level were 11 times more likely to be the subject of a substantiation than Aboriginal and Torres Strait Islander children with the highest SES level (AIHW, 2016b).

Child abuse has long lasting impacts and is costly for both the victim and the government.

- In terms of **mental health outcomes** child abuse victims have higher rates of major depressive disorder and post-traumatic stress disorder compared to children who have not suffered from child abuse (Widom, 2007; Widom, 1999).
- Child abuse victims are more **susceptible to physical illness and injury**. According to Norman et al (2012), child abuse victims are more likely to suffer from chronic pain, headaches, arthritis, ulcers and some forms of cancer.

⁵ A substantiation is a report of child abuse that has undergone an investigation and found that child abuse has occurred, or the child is at risk of harm (AIHW, 2016c).

- Children who are victims of child abuse and are in OOHC have worse learning outcomes which then impacts their **employment outcomes** later in life.
- **Increased justice system costs** due to increased policing costs, incarceration of perpetrators and also victim support services for victims.
- Victims of child abuse are more likely to partake in crime and be perpetrators of violence which results in an **increase in second generation crime**.
- Funding child protection services is a significant **cost to government**. According to the 2016 Report on Government Services (Productivity Commission, 2016), total recurrent expenditure on child protection, OOHC, family support services and intensive family support services across Australia was \$4.3 billion in 2014-15.
- **Deadweight loss** attributed to government expenditure and to lost income tax due to the victims of child abuse having lower lifetime earnings.

Deloitte Access Economics (forthcoming) estimates the cost of child abuse on the New South Wales economy. According to this report, **the lifetime net present value cost per victim of child abuse was \$90,667**⁶. This takes into account all the costs listed above.

3.4.1 The Murri School's ability to reduce demand for child protection services

The Murri School could reduce the number of children entering child protection services and progressing through the system as they provide culturally competent, family based preservation services and early intervention services.

A report by Deloitte Access Economics (2016b) analysed the impact of delivering a holistic approach to child protection services. The components that were studied in the report included:

- **Cultural competence** which refers to the provision of culturally appropriate services to Aboriginal families. According to a study by Chandler (2012), Aboriginal and Torres Strait Islander communities are best placed to provide Aboriginal and Torres Strait Islander services as they understand the issues that confront Aboriginal families. As such, community-led organisations and programs that were delivered and managed by Aboriginal people were found to deliver better outcomes.
- **Family based preservation services** which are intensive, short-term, in-house crisis intervention services that support families in which a child is at imminent risk of out-of-home-care placement. Aboriginal culture places high importance on community and family, as such, family preservation is key. In addition, family preservation is preferred to OOHC as children in OOHC have been found to have worse outcomes than those in the general population and OOHC is significantly more expensive than other child protection services (Tully, 2008).
- **Early intervention** which aims to reduce the likelihood of a child entering the child protection system, or escalating in the child protection system. Early intervention and prevention services have been found to be highly cost-effective as they stop the abuse and subsequent costs from ever occurring.

There were only a few studies that analysed the impact of these components on reducing the entry of Aboriginal and Torres Strait Islander children into child

⁶ Costs and benefits in this section are lifetime net present value unless specified otherwise

protection and OOHC placements. These studies were analysed by Deloitte Access Economics to determine the effectiveness of the different components. The results are presented in Table 3.10.

Table 3.10: Effect sizes of programs on entry into child protection and OOHC

	Impact on entry into child protection	Impact on OOHC
Cultural competence	N/A	Reduction in placements by 2.83%
Family based preservation services	N/A	Reduction in placements by 30.1%
Early intervention	Reduction in notifications by 18.5%	Reduction in placements by 0.07%

Source: Deloitte Access Economics calculations, Deloitte Access Economics (2016b)

The healing program offered by the Murri School encompasses all three of these components. The Murri School provides culturally competent services to Aboriginal and Torres Strait Islander children by employing Aboriginal and Torres Strait Islander staff. They also offer family based preservation services, although they may not be in-house crisis intervention services, the services provided by the Murri School aim to empower parents and to improve family connection. The services are also offered to all students which acts as early intervention. Therefore, the Murri School is likely to result in a reduction of children entering the child protection system and in OOHC placements of those already in the system. The effect that the Murri School has on reducing the number of children entering the child protection system and the number of children who will be placed in OOHC is assumed to be the sum of the effects shown in Table 3.10 ⁷. This implies that the Murri School will reduce children entering the child protection system by 18.5% and reduce OOHC placements by 33.0%.

According to stakeholders from the Murri School, 65 children had contact with child protection services in 2016, while 23 children in 2014 ⁸ were in OOHC, this represents 28% and 10% of the 2016 Murri School cohort respectively. AIHW (2016) data show that approximately 10% of Aboriginal and Torres Strait Islander children in Queensland have received child protection services. Therefore, the Murri School has a higher than average number of children who have had contact with child protection services.

The Murri School is likely to have a higher than average number of child protection cases due to being located in a low SES area. The Murri School is located in Acacia Ridge which was rated the fifth most disadvantaged area of greater Brisbane in 2008 (ABS, 2008). More recent data from the My School website also indicates that the Murri School is located in a low SES area. The My School website reports on the ICSEA which was discussed in section 1.3.1. The ICSEA ranks schools based on parents' occupation and education, geographical location and the proportion of Aboriginal and Torres Strait Islander students at the school. The ICSEA has an average score of 1000, any lower than this value indicates the lower the level of educational advantage of students who go to the school. The last recorded score for the Murri School was in 2013 where they were given a score of 686 (ACARA, 2014).

⁷ While there would be some areas of overlap between programs, there would also be synergies from having the one organisation running all three types of intervention for the same population.

⁸ This was assumed to be representative of the 2016 cohort



To calculate the number of children that have not entered the child protection system as a result of the Murri School, the number of children who would have entered the system without the Murri School was first calculated. Using AIHW (2016) data it was estimated that 24 children in the Murri School who have not had contact with the child protection system will have contact with the children protection system in the future. Assuming that the Murri School reduces the number of children coming into contact with the child protection system by 18.5% this would result in the Murri School preventing approximately four cases. For those children who have already had contact with the child protection system but are not in OOHC (42 children), the Murri School was assumed to reduce OOHC placements for this cohort of children by 30.0%; this results in a reduction of 14 cases in total (results are shown in Table 3.11).

Table 3.11: Decrease in child protection cases and OOHC placements attributed to the Murri School

	Impact on entry into child protection	Impact on OOHC
Cultural competence	-	1.19
Family based preservation services	-	12.64
Early intervention	4.38	0.03
Total	4.38	13.86

Source: Deloitte Access Economics calculations.

By reducing four children entering the child protection system this will save the economy the cost of four cases of child abuse. With the lifetime net present value cost of child abuse being \$90,667 per victim, this results in savings of approximately \$0.4 million. When averaged over the entire Murri School cohort this results in savings of \$1,728 per student.

Calculating the savings due to a reduction in OOHC placements requires calculating the cost of an OOHC placement. Studies such as Cashmore and Paxman (2007) have shown that OOHC causes negative mental and physical health outcomes and that individuals who have been in OOHC have a high reliance on government income. Children in OOHC were found to have worse employment outcomes due to interrupted schooling through moving in and out of homes. As a result, they were more reliant on government support. Another consideration is that only the worst cases of child abuse result in OOHC placement which indicates that the physical and mental health of children in OOHC will be worse than children who have been abused but are not in OOHC. Therefore, the average OOHC cost per child will exceed the average cost per child that has not been in OOHC but has been abused.

To calculate the cost attributed to only being placed in OOHC, it is difficult to not include costs that may be due to the abuse. As a result, the costs that can be calculated for OOHC include only those that can be directly attributed to OOHC and are a conservative estimate. Three costs of OOHC that can be captured are reduced employment outcomes, government spending on OOHC and the associated deadweight loss of these costs.

Reduced employment outcomes for a child in OOHC results in a loss of lifetime income of \$176,266 per OOHC placement, according to Deloitte Access Economics (forthcoming). This is due to children in OOHC having worse learning outcomes which impacts their employment outcomes later in life.

For government spending on OOHC, it was assumed that an individual who enters the OOHC system will spend approximately five years in OOHC. This assumption is based on data from the AIHW (2016b) which show that of children in OOHC, 41.2% spend over five years in continuous care (AIHW, 2016b). Assuming that some children will leave OOHC and return, it is thought that the overall time spent in care will be longer for some children and the majority of children in OOHC would spend on average five years in OOHC. The average cost to government for funding OOHC in Queensland was calculated to be approximately \$9,441 per child per year (Deloitte Access Economics, 2016b). Multiplying this figure by the average five years in care results in a total government cost of \$47,205 per person.

The last cost included in the OOHC cost is deadweight losses which occur when there are transfer payments. Transfer payments (government payments and taxes) are not a net cost to society, as they represent a shift of consumption power from one group of individuals to another. If the act of taxation did not create distortions and inefficiencies in the economy, then transfers could be made without a net cost to society. However, these distortions do impose an efficiency loss on the economy.

In a practical sense, this distortion reveals itself as a loss of efficiency in the economy, which means that raising \$100 of revenue requires consumers and producers to give up more than \$100 of value. In order to calculate the size of this additional inefficiency which is needed to raise the \$100 of tax revenue, Deloitte Access Economics' standard methodology is to apply rates used by the Productivity Commission in its study of distortions in the pharmaceutical industry (Productivity Commission, 2003). These rates are \$0.275 per \$1 of tax revenue raised, plus \$0.0125 per \$1 of tax revenue raised for Australian Taxation Office administration, i.e. 28.75% of the value of the transfers in total.

Due to the government spending additional money on OOHC and losing money from reduced income tax there is deadweight loss. Deadweight loss due to the reduction in income and therefore reduction in income tax collected was calculated to be \$18,142 per placement. While deadweight loss from government spending on OOHC was calculated to be \$13,572 per placement. Adding the deadweight loss to the earlier costs results in total lifetime net present value of OOHC costs of \$255,185 per person, this calculation is shown in Table 3.12.

Table 3.12: Lifetime cost per child for OOHC and child abuse

Item	Child abuse cost (\$)	OOHC cost (\$)
Health system	3,958	
Reduced employment	1,787	176,266
Crime	4,982	
Government funding	38,449	47,205
Deadweight loss	11,238	31,714
Second generation	114	
Loss of wellbeing	30,138	
Total	90,667	255,185

Source: Deloitte Access Economics calculations.

Note: Numbers may not sum due to rounding

Applying this figure to the number of diverted OOHC cases results in savings of approximately \$3.9 million to the economy. Averaging the \$3.9 million across the entire Murri School cohort results in an average benefit of \$17,105 per student. The results are shown in Table 3.13.

Table 3.13: Savings due to a reduction in child protection services

	Impact on entry into child protection (\$ m)	Impact on OOHC (\$m)
Cultural competence	-	0.30
Family based preservation services	-	3.23
Early intervention	0.40	0.01
Total	0.40	3.54

Source: The result of multiplying Table 3.12 and Table 3.11.

The improvement in parenting behaviour and subsequent reduction in child abuse may also benefit other children who are not enrolled at the Murri School. Families at the Murri School may have children who do not attend the Murri School, any improvements in parenting behaviour due to the Murri School program may also benefit these children and result in improvements in those children’s wellbeing and reduce their likelihood of entering the child protection system.

3.5 Reduced contact with the justice system

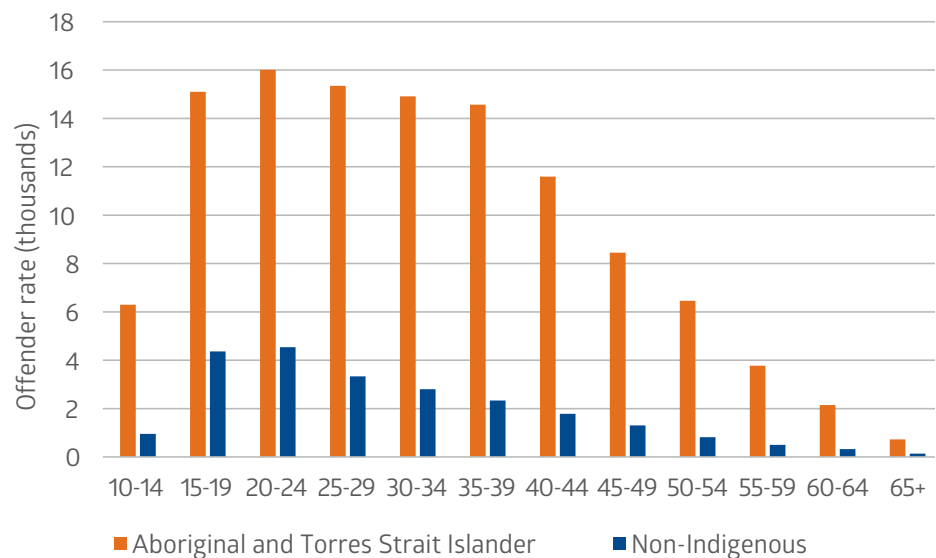
In Australia, any young person over the age of 10 years can be held legally responsible for their criminal actions (Richards, 2011). Despite Aboriginal and Torres Strait Islander people comprising only 3% of the Australian population, Aboriginal and Torres Strait Islander people are over-represented in the justice system. The crude ⁹ imprisonment rate in Queensland for Aboriginal and Torres Strait Islanders was 1,851 per 100,000 which is significantly higher than the rate for non-Indigenous people (140) (ABS, 2015).

“We do better at keeping Aboriginal people in prison than in school.”

Mick Gooda, Aboriginal and Torres Strait Islander Social Justice Commissioner

9 Not age standardised

Chart 3.1: Queensland offender rate by age 2014-15, Aboriginal and Torres Strait Islander and non-Indigenous.



Source: ABS (2016b).

In addition to higher rates of incarceration, reoffending is higher in Aboriginal and Torres Strait Islander people compared to non-Indigenous people. Of those Aboriginal and Torres Strait Islander people who were in a Queensland prison in 2015, 81.8% had been in prison before, while only 58.7% of non-Indigenous prisoners had been in prison before (ABS, 2015).

Incarceration imposes significant costs on society. In 2012, Deloitte Access Economics (2012b) estimated direct financial costs of \$358,915 per year of incarceration. This estimation includes the likelihood of reoffending but does not include indirect financial costs such as lower employment. In addition to financial costs, there are also burden of disease costs. Deloitte Access Economics (2012a) calculated that the expected costs of Hepatitis C from incarceration of Aboriginal and Torres Strait Islander Australians with drug and alcohol related problems was \$23,281 and the cost of Aboriginal and Torres Strait Islander premature mortality was \$92,254 due to incarceration (relative to residential rehabilitation). Adding wellbeing costs yields a total cost of \$474,450 per case in 2012 dollars or \$510,439 per case in 2016 dollars when adjusted using CPI (ABS, 0216d).

3.5.1 The Murri School impact on the justice system

The Murri School is able to reduce the burden of Aboriginal and Torres Strait Islander incarceration through improving educational outcomes in Aboriginal and Torres Strait Islander children and in improving community connection.

A number of studies such as Prichard and Payne (2005), Weatherburn et al (2006), Hunter (2001) and Ferrante (2013) have found that low educational attainment and justice system contact have a positive relationship. Weatherburn et al (2006) hypothesizes that lower educational outcomes may result in increased criminal activity because leaving school early increases the risk of an individual having lower

lifetime income and subsequent welfare dependency which increases the risk of offending. This is similar to the theory of Hunter (1993) which states that low levels of education result in economic dependence which in turn is linked to violence.

One factor that has been found to decrease the offending rate of Aboriginal and Torres Strait Islander people is community connection. Community connection refers to the sustainability, resilience and overall strength of the community that the individual is a part of. The literature hypothesizes that having a strong community will lower the offending rate of Aboriginal and Torres Strait Islander Australians as members of the community are held accountable for their actions by their elders and peers.

A study by Ferrante (2013) analysed the factors that influence the prevalence and frequency of offending by Aboriginal and Torres Strait Islander Australians. The factors analysed in the study included financial stress, alcohol misuse, employment status, cultural ties, community connection, educational attainment and family stress. The study used regression modelling to estimate the effect of each risk factor on the prevalence and frequency of arrest. Ferrante (2013) found that Aboriginal and Torres Strait Islander people that reached senior high school were 11.4% less likely to be arrested compared to those who did not. The study also found that if an Aboriginal and Torres Strait Islander person classified their community connection as “strong” compared to “not strong” it resulted in a 16.4% reduction in likelihood of being arrested.

Due to the Murri School improving educational outcomes for students and focusing on establishing family and cultural connections, the Murri School could reduce the number of incarcerations amongst their cohort. To estimate the number of diverted justice system cases attributed to the Murri School healing program it was assumed that the Murri School impact on reducing the likelihood of offending would be the average of the educational attainment and community connection impact. This results in the Murri School reducing incarcerations by 13.9%. According to Murri School stakeholders, 35 Murri School pupils had contact with the justice system in 2016. Assuming the Murri School reduces this number by 13.9% results in a reduction of approximately five cases.

The cost of an incarceration was adjusted to take into account that many of the children who are diverted from the justice system are not necessarily incarcerated. According to a report from the Australian Institute of Criminology (2014) approximately one third of those convicted will go to jail, to reflect this, the cost per incarceration was multiplied by one third¹⁰. Applying the new cost per incarceration to the number of diverted cases results in savings of \$0.8 million. This results in a benefit per child of \$3,599, these results are shown in Table 3.14.

Table 3.14: Reduction in juvenile justice cases

Number of cases diverted	Value of the cases diverted (\$ m)	Benefit per child (\$)
5	0.8	3,599

Source: Deloitte Access Economics calculations.

¹⁰ This calculation assumes that persons in juvenile justice under sentence cost the same as those in adult detention, which may be a slight over-estimate. Conversely it is assumed that those in juvenile justice without sentence (a larger number of persons) and those in community service impose minimal justice system costs. Overall, it is likely that the costs of juvenile justice are under-estimated.

4 Costs of the Murri School

This section provides a comparison of the Murri School to the average Queensland state school and to the Murri School “equivalent” state school.

4.1 Comparison to the average Queensland government school

The average 2016 cost per student at the Murri School was calculated to be approximately \$19,341 per student. This was calculated by taking the average of the 2012 to 2014 Murri School funding from the My School website, adding the additional funding the Murri School receives from the Healing Foundation, and inflating the cost to 2016 dollars using CPI ¹¹.

The Murri School funding is higher than the average funding received by Queensland government schools from State and Commonwealth sources which in 2013-14 was \$15,563 per student and inflated to 2016 dollars was \$16,151 ¹² per student (Productivity Commission, 2016). These figures indicate that the Murri School is \$3,190 per student more expensive than the average Queensland school.

However, the Murri School is not an “average” school. Commonwealth funding recognises that it costs more to educate Aboriginal and Torres Strait Islander students than non-Indigenous students, and students in lower than average socio-economic areas. Accordingly, the Murri School receives additional government funding as a result of their low SES status and the high proportion of Aboriginal and Torres Strait Islander children in their cohort. This needs to be taken into account when comparing the funding of the Murri School to an equivalent Queensland government school.

4.2 Comparison to costs of an equivalent state school

The counter-factual for this cost analysis is that the Murri School approach is replicated for education in state schools that have similar features to the Murri School. Therefore, the costs of a state school with similar characteristics to the Murri School is the appropriate comparator.

The Queensland state school funding system is very complex, with staff being centrally allocated based on complex formulas and approximately 80 different grants available to schools (Department of Education and Training, 2016). As a result, selection of a valid comparator school is difficult. Ideally, the equivalent state school would be as similar to the Murri School as possible. This is due to funding being provided to schools based on certain characteristics. Schools that are in a remote location are eligible to receive a variety of grants, as are schools that have a high proportion of low SES students, or a high proportion of Aboriginal and Torres Strait Islander students. Therefore, the equivalent state school comparator of the Murri School would receive some funding for having a high proportion of Aboriginal and Torres Strait Islander students, and being in a low SES area, but not for rurality.

For state funding of government schools there appears to be a correlation between the proportion of Aboriginal and Torres Strait Islander students at a school and the level of state funding received by the school. Using data from the My School website,

¹¹ Ideally the My School data is used as the benchmark as it enables comparability between the schools. However, it appears that the My School figures do not include Healing Foundation funding, probably because this funding is not solely used for educational purposes. However, as the school adopts a holistic approach, we believe it is appropriate to include Healing Foundation funding. The direct impacts of Healing Foundation funding are improved connection to culture, family relationships, service coordination and physical health, which then increase educational outcomes.

¹² Data from the Productivity Commission includes additional cost components that reflect the cost to capital to schools. Figures in this report based on the My School data have been made without including capital expenditure provided to schools.



a comparison was made between a Queensland Government school that had a low proportion of Aboriginal and Torres Strait Islander students, a school that had about 70% Aboriginal and Torres Strait Islander students and another two schools that had over 90% of Aboriginal and Torres Strait Islander pupils. Analysis of these schools and their funding received from the Queensland government found that a 1% increase in the Aboriginal and Torres Strait Islander proportion of students resulted in an increase of per student funding of approximately \$80. Therefore, a school with approximately 70% Aboriginal and Torres Strait Islander students, would receive \$5,607 per student more in additional funding than a school which did not have Aboriginal and Torres Strait Islander students. For a school that had 93% of Aboriginal and Torres Strait Islander students, which is the 2014 recorded proportion for the Murri School, the school would receive \$7,450 per student additional funding compared to a school with no Aboriginal and Torres Strait Islander students.

A simple method to estimate costs for the comparator school would be to assume that the average funding for a Queensland state school (\$16,151) would be increased by \$7,450. This method assumes that the average Queensland state school has a low proportion of Aboriginal and Torres Strait Islander students, in line with the total population, while the comparator school had a similar proportion of Aboriginal and Torres Strait Islander students to the Murri School (93%).

However, the average cost per student may not be an accurate measure as Queensland has many small schools with a small student cohort – for example, Queensland has over 100 schools with less than 25 pupils (Productivity Commission, 2016). Given that there is a substantial fixed cost element to schooling, small schools will push up average costs per student. That is, the average school may have fewer pupils and higher average costs than the median school.

This could explain why, even though state schools with mostly Aboriginal and Torres Strait Islander students do receive around \$7,000 more funding per student than those with only a handful of Aboriginal and Torres Strait Islander students, these schools do not cost \$7,000 per student more than the average school – because they are not the tiny schools that are driving up the average student cost.

The Murri School is considerably smaller than the average Queensland school. The average number of students at the Murri School between 2012 and 2014 was calculated to be 204 (My School website), while the average in Queensland was calculated to be 432 (Productivity Commission, 2016). However, the aim of this exercise is to estimate the benefits of replicating the Murri School healing program in largely Aboriginal and Torres Strait Islander state schools; so another approach was utilised.

4.2.1 Using comparator schools to represent the equivalent state school

While Aboriginal and Torres Strait Islander students in average schools are performed used for cost and outcome benchmarks, it is still a useful exercise to estimate what a similar state school would cost to run. To find an approximate cost of the state school comparator of the Murri School, two schools with similar characteristics to the Murri School were selected to represent the comparator school. The Doomadgee State School (Doomadgee) and the Garbutt State School (Garbutt) were chosen to represent the comparator school due to the similarities between these schools and the Murri School.

The first similarity between Doomadgee and the Murri School is that they have a similar proportion of Aboriginal and Torres Strait Islander students. The proportion of Aboriginal and Torres Strait Islander students at the Murri School was 93% in 2014 compared to 99% at Doomadgee. Doomadgee also had a similar number of students to the Murri School; the average number of students at the Murri School from 2012 to 2014 was 204 while for Doomadgee the number of students was higher at 311.

One difference between the two schools is that Doomadgee is classified as a “very remote” school and as a result receives additional funding. One program that provides additional funding for rural and remote schools is the Rural and Remote Education Access Program. This program is run by the Queensland Government and provides funding to schools to help students who may be geographically isolated. Funding for Doomadgee was \$27,401 in semester 1 of 2016 (the Rural and Remote Education Access Program, 2016). This figure was doubled to give a per year result and averaged across the number of students at Doomadgee (311), this resulted in \$88 per student per year.

Although this figure may appear small, it only represents one form of funding that may be provided to Doomadgee as a result of their very remote location. We recognise that there are other components of location based funding that may be provided to Queensland state schools. Using the average of Doomadgee and another school with similar characteristics to the Murri School that is not remotely located will help offset the impact of additional funding received by Doomadgee as a result of its very remote location and thus provide a better benchmark of the expected funding level of a comparator school to the Murri School.

The second school that was used to represent the equivalent state school of the Murri School was Garbutt. Garbutt has a similar number of pupils to the Murri School; over the 2012 to 2014 period Garbutt had an average 130 students while the Murri School had 204. Compared to the Murri School, Garbutt had a lower proportion of Aboriginal and Torres Strait Islander students in 2014; 75% compared to the Murri School’s 93%. Like Murri, Garbutt is not located in a very remote area.

To represent the equivalent state school comparator of the Murri School, averages of Garbutt and Doomadgee data were taken. Using the average of Garbutt and Doomadgee data results in a similar proportion of Aboriginal and Torres Strait Islander students to the Murri School, results in an average number of students similar to the Murri School and also offsets the impact of additional funding due to different remoteness classifications. All these figures are shown in Table 4.1. Finding an appropriate comparator state school to the Murri School is difficult, but this average of similar state schools chosen for this analysis does provide some indication of potential costs of the state school equivalent to the Murri School.

Table 4.1: Selected characteristics of the Murri School, Doomadgee, Garbutt and the equivalent state school of the Murri School.

	The Murri School	Doomadgee	Garbutt	Equivalent state school*
Average funding (\$)^	19,341	19,190	18,776	18,983
Number of students#	204	311	130	221
Proportion of Aboriginal and Torres Strait Islander students in 2014 (%)	93	98	75	86.5

Note: *These figures are the average of Doomadgee and Garbutt figures. ^This is calculated as the average funding the school received over the 2012 to 2014 period and inflated to 2016 dollars. #This is the average number of students over the 2012 to 2014 period.

Source: My School website and the Murri School Financial Statements 2014

The average funding for Doomadgee and Garbutt over the 2012 to 2014 period and inflated to 2016 dollars was calculated to be \$19,190 per student and \$18,776 per student respectively. Therefore, the state school equivalent of the Murri School had average funding of \$18,983 per student. The Murri School had average funding over the same period of \$19,341 per student in 2016 dollars (including Healing Foundation funding). The difference between these two figures was \$359 per student, with the Murri School per student funding being approximately 1.9% higher than an equivalent state school.

4.3 Cost comparator for the analysis

The preferable comparator used in this analysis, for both benefits and costs, would be the cost per student at a state school equivalent of the Murri School. However, no data was available to compare the benefits of Murri School students against those in an equivalent state school. Therefore, the benefits of the Murri School students were compared to the average Aboriginal and Torres Strait Islander student.

For costs there are two options for the comparator as both the cost per student in an equivalent mostly Aboriginal and Torres Strait Islander state school and the cost per student for an average Queensland student are known. The average Queensland state school was chosen as the appropriate comparator. This is a conservative outcome, as Aboriginal and Torres Strait Islander students would be disproportionately represented in remote, small or low SES schools, all of which have higher than average costs. We have also assumed that the vast majority of Aboriginal and Torres Strait Islander students attend state schools, and therefore the average Aboriginal and Torres Strait Islander cost per student is the same as the average cost for all state school students. Table 4.2 summarises the information that is known for each of the possible comparators.

Table 4.2: Potential comparators used in the analysis

	1st preferred comparator	2nd preferred comparator	3rd preferred comparator
	Student at an equivalent state school	Average Aboriginal and Torres Strait Islander student	Average Queensland state school student
Costs	✓	✗	✓
Benefits	✗	✓	Not applicable

Key: ✓ refers to known values. ✗ refers to unknown values.

5 Results

This section presents the total benefits of the Murri School healing program and the total costs of the program compared to the average Queensland School.

5.1 Benefits

The tangible benefits of the Murri School include improved educational attainment, mental health improvements, reduced child protection cases and reduced incarcerations. The total benefits as a result of the Murri School is \$6.5 million which is approximately \$28,248 per person. The largest benefit was the savings from decreasing usage of child protection services (\$17,105) followed by improvements in mental health (\$4,425). The total benefits and per person benefits are shown in Table 5.1.

Table 5.1: Total benefits attributed to the Murri School

	Total (\$ m)	Per person (\$)
Education	0.7	3,118
Mental health	1.0	4,425
Child protection	3.9	17,105
Justice system	0.8	3,599
Total benefits	6.5	28,248

Source: Deloitte Access Economics calculations.

Note: Numbers may not sum due to rounding.

5.2 Costs

As noted in section 4.3, the comparator used in the cost analysis is the cost per student in an average Queensland state school. Compared to the average Queensland school the Murri School is \$3,190 per student more expensive.

5.3 Benefit cost ratio

The benefit cost ratio (BCR) is calculated as the ratio of the sum of the discounted benefits of the Murri School healing program, relative to the cost of undertaking it. A BCR between 0 and 1 represents a net cost, while a BCR above 1 represents a net benefit.

The benefits of the Murri School healing program are \$28,248 per student, while the costs are an additional \$3,190 per student compared to the average Queensland state school. The BCR for the Murri School healing program is 8.85. Therefore, on average, for every dollar invested in the Murri School healing program there is an \$8.85 return in benefits. Table 5.2 shows the BCR calculations. This calculation is a conservative estimate of the BCR of the Murri School program as it compares the costs of the Murri School healing program to the average Queensland state school, the actual costs of a state school equivalent to the Murri School are likely to be higher than the average and therefore result in a higher BCR.



Table 5.2: BCR calculation

	Per person
Benefits	\$28,248
Costs	\$3,190
BCR	8.85

Source: Deloitte Access Economics calculations.

These estimates indicate that the Murri School healing program provides value for money in terms of improving educational attainment, mental health outcomes and decreasing contact with child protection and the justice system for Aboriginal and Torres Strait Islander children.

Appendix A: NAPLAN results of the Murri School

The NAPLAN is an annual assessment for all students in Years 3, 5, 7 and 9. It tests the types of skills that are essential for every child to progress through school and life, covering skills in reading, writing, spelling, grammar, punctuation, and numeracy. Table A.1 and Table A.2 show the average 2015 NAPLAN score for Aboriginal and Torres Strait Islander students in Queensland, and at the Murri School.

Table A.1 : Mean NAPLAN scores Aboriginal and Torres Strait Islander students in Queensland, 2015

	Reading	Persuasive Writing	Numeracy
Year 3	359	357	338
Year 5	436	418	435
Year 7	493	443	489
Year 9	525	474	539

Source: Productivity Commission (2016).

Table A.2 : NAPLAN scores at the Murri School, 2015

	Reading	Persuasive Writing	Numeracy
Year 3	392	385	385
Year 5	407	356	434
Year 7	488	442	498
Year 9	491	392	509

Source: My School (2016).

While the Murri School results fall below the average for Aboriginal and Torres Strait Islander Students in Queensland in most cases, it is important to take into account the socio-economic backgrounds of the children the school services when comparing student achievement. Analysis from the ABS has found that students who identified as being Aboriginal or Torres Strait Islander were more likely than non-Indigenous students to score below the national minimum standard on the NAPLAN (ABS, 2014). The ABS analysis further found that there is a strong relationship between the socio-economic status (SES) of the area in which the child lives, as measured by the SEIFA Index of Relative Socio-economic Advantage and Disadvantage, and NAPLAN performance. Similarly, in terms of household income, 16% of students in low income households (less than \$600 per week) scored below the national minimum standard for reading, compared with 11% of those in high income households (\$3000 or more per week). Finally, the more highly educated the father or mother the better the child performs on the NAPLAN, students of younger mothers score less well, and children of married couples perform better (ABS, 2014).

In order to enable fair comparisons, the My School website shows 2013 NAPLAN scores from the Murri School compared to NAPLAN scores of schools serving students from statistically similar backgrounds, based on SEIFA scores. The data in Table A.3 shows that NAPLAN scores at the Murri School were higher than average scores at schools serving students from statistically similar backgrounds in most year groups and NAPLAN



categories. In 2013, the Murri School scores for all NAPLAN categories and all year groups were on average 29 points higher than the scores for students from statistically similar backgrounds. As can be seen in Chart A.1, this difference increases in older age groups. Year 9 NAPLAN scores for students at the Murri School were an average of 63 points higher than the average scores for students from statistically similar backgrounds, with a difference of 43 points for reading, 92 points for persuasive writing, 50 points for numeracy, 71 points for spelling and 58 points for grammar.

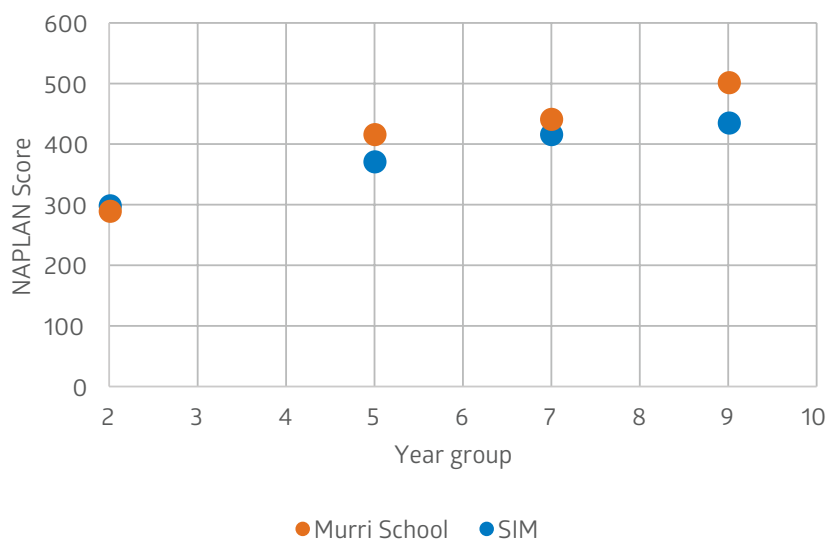
Table A.3 : NAPLAN scores at the Murri School and SIM Schools, 2013

	Reading		Persuasive Writing		Numeracy		Spelling		Grammar	
	Murri	SIM	Murri	SIM	Murri	SIM	Murri	SIM	Murri	SIM
Year 3	306	296	284	284	332	298	278	294	255	286
Year 5	429	399	377	343	432	386	407	384	404	372
Year 7	440	425	426	376	439	443	459	439	426	394
Year 9	512	469	473	381	518	468	538	467	467	409

Note: SIM = schools serving students from statistically similar backgrounds. The Murri and SIM scores have a margin of error which may overlap at a 90% level of confidence.

Source: My School (2016).

Chart A.1 : Average of all NAPLAN scores, 2013



Note: SIM = schools serving students from statistically similar backgrounds.

Source: My School (2016) and Deloitte Access Economics calculations.

NAPLAN scores are likely to be indicative of Year 12 completion rates and future earnings and wellbeing; however, research in this area has been too inconclusive to enable these benefits to be quantified.

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Report prepared by

Deloitte.
Access Economics



HealingFoundation
Strong Spirit • Strong Culture • Strong People

Phone: (02) 6272 7500

Fax: (02) 6272 7599

Email: info@healingfoundation.org.au

www.healingfoundation.org.au
