

BUILDING A STRONGER EVIDENCE BASE TO SUPPORT EFFECTIVE OUTREACH STRATEGIES FOR ABORIGINAL AND TORRES STRAIT ISLANDER STUDENTS: INCREASING IMPACT AND UNIVERSITY PARTICIPATION

EQUITY FELLOWSHIP REPORT



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Building a stronger evidence base to support effective outreach strategies for Aboriginal and Torres Strait Islander students: Increasing impact and university participation

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“Inspirational stepping stones” by Aunty Denise Proud (2021)

The painting depicts the role of outreach programs as a stepping stone for Aboriginal and Torres Strait Islander students into university. The large circle to the left signifies the university while the large circle to the right represents the importance of culture. The small circles represent the Aboriginal and Torres Strait Islander students who attend outreach programs and who come from diverse places across Australia to participate. They bring their connections to Country and culture with them when they attend outreach programs. The slightly larger circles at the bottom right represent the important roles of student ambassadors or mentors who work on outreach programs.

The brown and white curvy dotted lines that join the circles signify the pathways or stepping stones between students and universities through attending outreach programs. The pathways are interconnected to highlight the importance of staff maintaining connections with Indigenous students who participate in outreach activities so that students are supported beyond undertaking the outreach program, from school, into university and beyond.

The circles are all connected and linked – when students attend outreach programs they make important connections with their peers, as well as connections to student ambassadors, and university staff. The culture circle is connected and linked to all of the other circles because of the importance of strengthening the cultural aspects and Indigenous perspectives in the curriculum in outreach programs.

Earthy colours are used in the painting to signify the important spiritual connection to land, family, community and Country for Aboriginal and Torres Strait Islander students. The gold in the artwork represents the importance of family and community for students.

About the artist

Aunty Denise Proud is an Honorary Research Senior Fellow of The University of Queensland and is an internationally renowned educator, author and artist. Aunty Denise is a proud Aboriginal woman who was born and raised on Cherbourg in Queensland. As a consultant Aunty Denise delivers cultural and educational workshops across a range of sectors and industries to better support organisations in engaging and collaborating with Aboriginal and Torres Strait Islander peoples and communities.



“Inspirational Stepping Stones”

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Abbreviations

ATAR	Australian Tertiary Admission Rank
FiF	First-in-Family
DESE	Department of Education, Skills and Employment
FIFO	Fly-in-fly-out
Go8	Group of Eight
HEPPP	Higher Education Participation and Partnership Program
HDR	Higher Degree by Research
NCSEHE	National Centre for Student Equity in Higher Education
OLT	Office for Learning and Teaching
Q&A	Question and Answer
RA	Research Assistant
TAFE	Technical and Further Education
UA	Universities Australia
UQ	University of Queensland
WPLS	Widening Participation Longitudinal Study

Executive Summary

Background

This Equity Fellowship has focused on outreach programs for Aboriginal and Torres Strait Islander¹ students and examines “what works” and what could be improved in these programs. Most universities are running outreach initiatives for Indigenous high school students. Many of these programs involve week-long, intensive camp experiences that bring school students onto university campuses for information sessions, workshops and events that attempt to demystify university culture and cultivate a sense of belonging to build and sustain student engagement. The theoretical case for these initiatives is strong, as much data exists about the barriers Indigenous students face in entering university. However, before this Fellowship occurred, the research and evidence base for these equity programs remained largely underdeveloped and limited (Bennett et al., 2015; Gore et al., 2017b).

Methods

The Fellowship involved a mixed-methods approach (combining qualitative and quantitative methods) to identify “what works” in outreach programs for Indigenous students and strategies to strengthen and improve outreach programs specifically for Indigenous students. Through collaboration with an expert Indigenous advisory group and staff at universities, the Fellowship documented and mapped the range of outreach programs universities are running for Indigenous students and then evaluated two outreach camp programs specifically for Indigenous students at Australian universities. Working closely with staff at selected universities, qualitative data was collected from Indigenous tertiary students who had previously attended a high school involved in outreach activities before their transition to university. The project also involved interviews with Indigenous and non-Indigenous staff who run outreach programs for Indigenous students and with caregivers/parents of Indigenous students who participated in outreach programs to explore their perspectives on the impact of outreach activities on their child. Quantitative data obtained through a nationally circulated survey of Indigenous university students who participated in an outreach program while at school was also analysed.

Key findings

Key findings from the Fellowship were:

- The peer-to-peer connections Indigenous students form are a key success factor of outreach camps.
- Camps are part of a suite of outreach activities that many Indigenous students undertake while at school. Therefore, causality between outreach activity and transition to university is difficult to prove.
- Camps play an important role in demystifying university and provide “a taste” of university life for Indigenous students.
- Most Indigenous students participated in outreach camps during year 10, 11 or 12 and they were already considering transitioning to university.
- More cultural aspects and more Indigenous perspectives in the curriculum are needed in some camps.
- Post-camp engagement with Indigenous students is particularly important and needs to be strengthened in some camps.
- More practical resources are needed for staff to assist them to evaluate their programs.

¹ While acknowledging the diversity among and between Aboriginal and Torres Strait Islander people, in this report the term “Indigenous” is used to refer to both Aboriginal and Torres Strait Islander people.

Outputs

An output of the Fellowship was an online panel discussion with two Indigenous experts, Professor Maria Raciti and Professor Gawaian Bodkin-Andrews, who provided practical tips and advice to outreach practitioners on how to evaluate their programs. The project findings have also established strategies that can be adopted by all universities across Australia to strengthen and improve outreach equity initiatives for Indigenous students. The Fellowship is also developing resources for outreach staff to assist them in evaluating their programs targeting Indigenous students.

Recommendations

The eight key recommendations derived from this Fellowship are outlined below according to each of the targeted audiences:

Key stakeholder recommendations

1. University leadership needs to ensure more training opportunities for outreach staff to provide them with the necessary skills to be able to evaluate their programs.
2. University outreach staff should continue to engage post-camp with Indigenous students who participate in outreach activities so that they are supported beyond undertaking the camp, through the whole-of-student-life cycle, from school, into university and beyond. Follow up should be offered in a diversity of media (phone, online, face-to-face).
3. University leadership and outreach staff should work together to ensure clear, agreed-upon “measures for success” in relation to outreach programs. These should take into consideration a range of factors, not just transition into university, but also the more subtle benefits of outreach programs; for example, the connections students made with their peers, changes in their aspirations and their expectations about university.
4. University outreach staff should work collaboratively with Indigenous centres and Indigenous academic staff within universities to ensure Indigenous perspectives are strongly embedded in the “hands-on” activities on outreach camps.
5. University outreach staff should further develop stage- and age-appropriate outreach programs for Indigenous students in primary school and early years of high school as there is growing recognition that the current major investment in outreach activities in the later secondary years may begin too late.
6. Universities should ensure there is Indigenous leadership of outreach programs for Indigenous students.

Australian Government recommendations

7. The Australian Government Department of Education, Skills and Employment (DESE) could test the feasibility of including evaluation of Indigenous outreach programs as a specific part of the current investment in the Student Equity in Higher Education Evaluation Framework and the Widening Participation Longitudinal Study (WPLS).
8. The Australian Government Department of Education, Skills and Employment (DESE) should build on the work of the Widening Participation Longitudinal Study (WPLS) so that data on the engagement of Indigenous students in outreach activities is included and linked to administrative data on the transition of Indigenous students into university.

Introduction

While the number of Indigenous students participating in higher education has markedly increased since the 1960s, Indigenous students are still grossly underrepresented in higher education. The Universities Australia *Indigenous Strategy Annual Report* noted that although Indigenous people comprise about 3.1 per cent of Australia's overall population, they accounted for only 1.9 per cent of higher education enrolments in 2018 (UA, 2020, p. 12). There is a need to continue to build pathways and raise levels of aspiration and confidence of Indigenous students to consider university study as an option (UA, 2017; Behrendt et al., 2012). The majority of universities run outreach initiatives for Indigenous school students that attempt to elevate aspirations of Indigenous students to go to university (Brady, 2012). Many of these programs involve week-long, intensive camp experiences that bring school students onto university campuses for information sessions, workshops and events that attempt to demystify university culture and cultivate a sense of belonging that can build and sustain student engagement (Kinnane et al., 2014). However, there is a "relative dearth of publicly available, peer-reviewed research or evaluation, conducted with rigorous methodologies, on the effects of equity initiatives" (Naylor et al., 2013, p. 7). Further Gore et al. report that "the evidence base for equity initiatives targeting Indigenous students is weak" (Gore et al., 2017b, p. 165). This could be because "it is much harder to obtain data and evaluate an initiative's effectiveness, given that other factors such as differences in the student body, school culture, staff capacities and other factors may confound the analysis" (Naylor et al. 2013, p. 16).

It is important to note that there have been a number of research projects undertaken at universities across Australia that provide evidence of the effectiveness of equity programs. For example, Bennett et al. (2015) include the following programs that involve Indigenous students in their equity target groups: In2Uni at University of Wollongong, Indigenous Youth Sport Program at CQU, Young Achievers at UQ and UNSW Aspire. The UniCamps outreach program from University of South Australia (Thomas et al., 2014) is one of the few Indigenous-specific, intensive camps that provide some published evidence of effectiveness. Significantly however, the authors note that a more formal evaluation is required to provide a thorough examination of the impact of the initiative in terms of strengths and weaknesses (Thomas et al., 2014). Kinnane et al.'s (2014) Office for Learning and Teaching (OLT)-funded report on the transition of Indigenous students into higher education describes a number of outreach partnerships between universities and schools across Australia, but it does not discuss the evaluation of these programs. Harwood et al. (2013), as well as McKnight et al. (2018) and Priestley et al. (2015), examine the effectiveness of a related, but different, form of outreach: the Australian Indigenous Mentoring Experience (AIME) program that works to inspire Indigenous participation in school and further education. Smith et al.'s NCSEHE Equity Fellowship report (2018) argues that evaluation in the Indigenous higher education context "is important now, more than ever" (p. 5) and notes the development of a national Indigenous higher education performance and evaluation strategy is urgently required to advance Indigenous student outcomes. Raciti's NCSEHE-funded work (Raciti & Dale, 2019) examines a related issue of the timing of widening participation activities for equity groups, while Brett's NCSEHE Equity Fellowship report (2017) calls for further research and evaluation to strengthen accountability. Yet, "rigorous, comprehensive and nuanced" evaluation of Indigenous student outreach programs remains sparse (Frawley et al., 2017, p. 10). This Fellowship fills this gap by strengthening the evidence and research base about the effectiveness of intensive camp outreach strategies targeting Indigenous students and will, in turn, assist in strengthening outreach programs by identifying effective practice.

Importantly, the Fellowship responds to the Higher Education Participation and Partnerships Program (HEPPP)-funded review of "evidence of impact of equity initiatives in higher education" (Bennett et al., 2015) that calls for the need to evaluate equity programs and build a stronger evidence base about effective strategies. It also aligns with the Universities Australia Indigenous education strategy (2017), which states that "universities can and must

do more to improve Indigenous success in higher education” (p. 17) and articulates the need to “collaborate and enter into partnerships to achieve these goals, particularly through outreach and participation building activities” to meet targets (p. 27). The Fellowship also responds to the *Review of Higher Education Access and Outcomes for Aboriginal and Torres Strait Islander People: Final Report* (Behrendt et al., 2012) which notes the need for universities to focus more on outreach programs that support aspiration and the need to evaluate and improve these programs (p. xii). This project aligns closely with The University of Queensland’s (UQ’s) Strategic Plan 2018-21, which emphasises the need to increase the representation of Indigenous students within UQ (UQ, 2018). The Fellowship also responds to the HEPPE evaluation (ACIL Allen Consulting, 2017), which emphasised the necessity for evaluation to guide universities in quality improvement, and Gore et al. (2017b), who call for better evidence of the effectiveness of equity initiatives targeting Indigenous students.

Positioning of the Equity Fellow and theoretical framing

I developed an interest in outreach programs and pathways in higher education for Indigenous students through my work in the Aboriginal and Torres Strait Islander Studies Unit at The University of Queensland (UQ) over the last 12 years. I am a non-Indigenous woman who grew up on Jagera and Turrbal country in Brisbane, Queensland, Australia. This Fellowship builds on my longstanding ongoing national and international partnerships in Indigenous higher education. I have completed several projects with Indigenous researchers (Barney & Proud, 2014; Barney & Solomon, 2010). One project, with Aboriginal researcher and student support officer Monique Proud, explored the experiences of Indigenous postgraduate students and considered how UQ could better support them. This then led me to undertake an OLT National Teaching Fellowship (Barney, 2016) in collaboration with an Indigenous advisory group exploring pathways to Higher Degrees by Research for Indigenous students. I was also a co-leader of the Australian Indigenous Studies Learning and Teaching Network with Professor Martin Nakata and Professor Cindy Shannon. The network involved collaboration with Indigenous colleagues at universities across Australia in order to build relationships with scholars in the discipline and explore teaching and learning practices in Indigenous studies. I also organised a national workshop for the network where 40 scholars from universities across Australia networked and developed key foundational principles of Australian Indigenous studies. I also continue to collaborate with Indigenous colleagues on ethnomusicological research projects. I am particularly passionate about the possibilities of collaborative research projects and partnerships between Indigenous and non-Indigenous researchers as a way of working to privilege Indigenous knowledges, build dialogue, and contribute to a way forward for Indigenous and non-Indigenous people to work together. These numerous projects then led me to undertake this Equity Fellowship.

Critical pedagogy has provided me with a way of puzzling through my position as a non-Indigenous researcher working in Indigenous higher education contexts. As Darder, Bartodano and Torres (2009b) point out, critical pedagogy can provide a “powerful lens of analysis from which social inequalities and oppressive institutional structures can be unveiled, critiqued and, most importantly, transformed through the process of political engagement and social action” (p. 24). As such, critical pedagogy has underpinned my research, from my PhD in 2002 to my many collaborative research projects and partnerships with Indigenous researchers and colleagues (Barney & Proud, 2014; Barney & Solomon, 2010).

This Equity Fellowship also drew on critical pedagogy (Freire, 1996; Giroux, 1992; Greene, 2000; hooks, 2010; Kincheloe, 2008) as its theoretical and methodological framework to build a stronger evidence base about effective outreach strategies for Indigenous students. As Kincheloe (2008) points out, there are many definitions of critical pedagogy, differing according to those who devise them and the values they hold. bell hooks (2010) suggests that “critical pedagogy encompasses all areas of study that aim to redress biases that have informed ways of teaching and knowing in our society” (p. 23). Critical pedagogy is committed to social justice, grounded in dialogue (Freire, 1996) and aims to empower culturally

marginalised students (Darder et al., 2009a). It also involves both reflection and action (Monchincki, 2008). Giroux (2009) proposes that critical pedagogy should be “fundamentally concerned with student experience insofar as it takes the problems and needs of the students themselves as its starting point” (p. 453). In keeping with this, the methodology used in the Fellowship positions Indigenous voices at the centre. This Fellowship reflects on the experiences of Indigenous students who have participated in outreach programs while at school, as well as staff and caregivers/parents of students, but also provides actions or practical outcomes to assist in strengthening outreach programs targeting Indigenous students. The Fellowship aims to bring about a positive change in Indigenous student participation in higher education by exploring ways universities can strengthen outreach programs to encourage more Indigenous students to transition to university.

Collaboration with an expert Indigenous advisory group

The Fellowship built on my established national partnerships and collaborations by working closely with an expert Indigenous advisory group. The members of the advisory group were: Associate Professor Clair Andersen, Professor Tracey Bunda, Professor Bronwyn Fredericks, Associate Professor Graeme Gower, Professor Martin Nakata and Professor Maria Raciti. Two advisory group meetings were held during the Fellowship to ensure that expert Indigenous advice, feedback and perspectives are interwoven through the Fellowship. Regular email/Zoom/Skype discussions with advisory group members were also conducted. I also worked with an Indigenous evaluator, Professor Susan Page, who provided formative evaluation throughout the Fellowship by monitoring the progress of the Fellowship, attending advisory group meetings and the webinar on tips for outreach staff on evaluation, evaluating my engagement of key stakeholders, and providing regular formative feedback to me throughout all phases of the Fellowship.

Impact of COVID-19 pandemic and restrictions on the Fellowship

The Fellowship was mostly able to progress as planned despite COVID-19 with some minor changes to the original project plan. The interviews with outreach staff, Indigenous university students and caregivers/parents of students occurred via online/phone rather than face-to-face as originally planned. The advisory group meetings also had most members participating via online rather than face-to-face. The originally planned placement with the Department of Education, Skills and Employment (DESE) did not occur but an online presentation to DESE about the Fellowship is planned for August 2021. The originally planned face-to-face national symposium shifted to an online webinar panel discussion on tips for outreach staff on how to evaluate outreach programs for Indigenous students, with expert Indigenous panellists Professor Maria Raciti and Professor Gawaian Bodkin-Andrews. The advantage of having the webinar online rather than face-to-face was that more practitioners could participate, with 65 people registering for the online event. One negative effect of COVID-19 was there were fewer student survey respondents than I had hoped; however, it is important to note that the survey was circulated when many parts of Australia were in “lock down” with university students having to “pivot” to online learning with numerous complex challenges for students, including the psychological impacts of COVID-19 on health and wellbeing, cultural isolation and digital isolation (Uink, 2020).

Background

Outreach programs into schools are identified as important for building Indigenous student aspirations (Behrendt et al., 2012) and a number of universities run week-long, intensive camp experiences that bring Indigenous school students onto university campuses for information sessions, workshops and events. However, high-quality, research-based evidence of the impact of these programs is limited. It is unclear when the first outreach programs specifically for Indigenous students occurred, but the number of outreach programs have grown substantially since the implementation of HEPPP funding in 2010. In response to the government sponsored *Review of Australian Higher Education* (Bradley et al., 2008), the HEPPP was introduced to improve higher education participation among people from low socioeconomic status (low SES) backgrounds (DEEWR, 2009). HEPPP funding, provided to all Australian public universities, has led to an expansion in outreach programs for prospective students and also in retention and support programs for low SES university students (DEEWR, 2009). Outreach is defined in the HEPPP evaluation final report as being activities aimed to “increase awareness of higher education pathways, opportunities and associated careers by supporting and developing aspirations and expectations” (ACIL Allen Consulting, 2017, p. 43). Outreach activities include aspiration raising, academic preparation and support for school students, on-campus visits to demystify university, peer mentoring programs, and academic skills development workshops. Programs are also provided for specific cohorts, such as Indigenous students. Outreach programs to secondary schools from years 10 to 12 are the most common (Naylor et al., 2013, p. 43), although outreach to earlier years of schooling is increasing (Cupitt et al., 2016). As Kinnane et al. (2014, p. 80) note “many universities collaborate with schools and communities to provide outreach to a great number of Indigenous students”. This Fellowship focuses on intensive camps for Indigenous students, which are part of a suite of outreach activities being undertaken by universities for Indigenous students (Bennett, 2015, pp. 38-39). Other forms of outreach include one-day on-campus experiences, mentoring programs, and school visits. However, on-campus camps for Indigenous students are a frequently used form of outreach occurring at 24 universities (see Appendix 1 for full details). Initial discussions with outreach staff highlighted camps as a critical, but resource-intensive element of outreach programs. As a result, camps are the focus of this study, but it is hoped that the findings will be applicable to other outreach programs for Indigenous students more broadly. On-campus outreach camps for Indigenous students share many similarities: usually three to five day on-campus experiences for school students, a variety of information sessions, and workshops and events led by Indigenous and non-Indigenous outreach staff and Indigenous student ambassadors or mentors. These activities are all aimed at demystifying university culture, so that, hopefully, those students enrol in and attend university.

In international contexts, universities in the United Kingdom (UK), United States of America (USA), and Canada have been operating outreach programs to address barriers for students from low SES backgrounds for some time (Armstrong & Cairnduff, 2010). In relation to programs for Indigenous students, Gale et al. (2010) report on the range of programs introduced for Canada’s First Nations people including, for example, the Carleton University High School Outreach program, which is a collaboration between the university and an Indigenous high school using university student mentors. Elsewhere, Parent (2017, p. 162) discusses Aboriginal university transition programs (AUTPs) in Canada and their importance in solidifying “their sense of belonging to the university” and helping “them to develop academic and time management skills”. In the UK context, Harrison and Waller (2017, p. 81) note that “practitioners are being placed under increasing pressure to evaluate the success of their outreach activities, both by government and by their own universities” and certainly evaluation of outreach programs is being acknowledged as increasingly important to maximise program effectiveness (Naylor, 2015).

Evaluation of outreach programs

There are a number of examples of evaluation of outreach programs. Many evaluations use mixed-method approaches to identify the effects of programs and the majority of impact studies are based on secondary school outreach initiatives and university experience programs (Bennett et al., 2015, p. 36).

Skene et al. (2016) drew on the factors identified by Gale et al. (2010) in their research on effective outreach initiatives to evaluate Aspire UWA (University of Wollongong) — a program designed to encourage and support students from low SES backgrounds to continue into higher education. Drawing on surveys with students and ambassadors, teachers and principals at different time points from 2009 to 2015 and enrolments data, Skene et al. (2016, p. 18) found “positive trends in university enrolments and progression for the target group” and that long-term partnerships with schools underpin its success.

Austin and Heath (2010) also used Gale et al.’s Design and Evaluation Matrix for Outreach (DEMO) to evaluate and enhance school outreach programs from the South Coast of New South Wales and draw on qualitative feedback from students and teachers to argue the program is effective in “raising student aspiration” (2010, p. 9).

The evaluation of the large scale HEPPP-funded Bridges to Higher Education program (KPMG, 2015) found that students felt more prepared for university, more motivated to go, and more engaged with their studies as a result of the program. Teachers confirmed students were more engaged, and also reported that they themselves had better access to professional development and information about post-school educational options. Parents reported more ambition for their children, along with having more information about higher education and its benefits, and felt better able to support their children in achieving their educational goals. Further, “university acceptance rates among schools in low socioeconomic areas were improved by the Bridges program” (KPMG, 2015, p. 129).

Vernon et al. (2018) drew on survey data to examine changes in university aspiration over time in schools in the Murdoch Aspiration and Pathways for University (MAP4U) program. Comparing regional and urban students, they found that while regional and urban students shared an aspiration to attend university, only for the urban students did their desire and expectation that attending university was possible grow and strengthen over time.

Evaluating the effectiveness of university outreach activities in rural Australia, Walton and Carrillo-Higuera (2019) used a mixed-method design combining “multilevel growth models and in-depth interviews of careers advisors”. They found that while teacher testimonies demonstrated “positive opinions of campus visits ... statistical modelling showed on-campus visits had no statistically significant influence on the number of students progressing to university” (p. 811). In contrast, Zacharias and Mitchell’s (2020, p. 35) mixed-methods study of differences in university applications between students from low SES backgrounds versus regional and remote schools in Queensland found that widening participation programs had a “positive and statistically significant effect on application rates to university in highly engaged schools”.

Cuthill and Jansen’s (2013) five-year impact study of UQ’s Young Achievers program drew on a sample of the cohort and employed a longitudinal tracking approach with primarily qualitative methods including interviews, workshops and observations. The program includes on-campus experiences such as residential camps, study bursaries, mentoring by current students, assistance with study and career planning, advice on university study options, a scholarship for university study, and a guaranteed place at “this university” upon completion of year 12. Cuthill and Jansen (2013) found four key impact themes emerged from the data: 1) recognition – enhanced self-esteem, confidence, worth; 2) raised awareness – course options, pathways, support services; 3) relief – concern over factors such as financial costs, accommodation, living expenses; and, 4) strengthening of their social connections.

The impact of UC 4 Yourself, a university campus experience day for students from financially disadvantaged backgrounds at the University of Canberra, is explored by Fleming and Grace (2016). They found that students who participated were more likely to plan to attend university and were able to imagine themselves as university students after their campus visits.

Lynch et al. (2015) drew on pre- and post-questionnaires to evaluate a HEPPP-funded mentoring program from 2011 to 2013 that targeted the aspirations of year 9 regional secondary students with university mentors. They note that shifts in “knowledge, aspiration and confidence ... were small and sometimes seemingly contradictory” (p. 157).

While there is “no simple formula for successful outreach activities” (Sellar et al., 2010, p. 4), the existing research has identified several factors which characterise effective outreach (Cupitt et al., 2016; Gale et al., 2010). The features identified as successful in the evaluation of the HEPPP-funded Bridges to Higher Education program (KPMG, 2015, pp. 130-132) were:

- parent engagement tailored to the parents’ characteristics
- alignment of the program with the students’ ages and stages of development
- clearly defined project objectives related to the value of education and the capacity of students to achieve
- continuity of effort over several years
- tailored approach which recognises differing needs of students, schools and communities
- building positive school cultures
- building student confidence, aspiration, sense of achievement and belonging
- effective transitions.

These are similar to Gale et al.’s (2010, p. 35) findings about the aspects of programs that worked: “people-rich” programs providing financial support; early long-term interventions; sustained recognition of difference; enhanced academic curriculum; collaboration across education sectors; targeting cohorts of students to provide information about higher education; and university on-site experiences.

Bennett et al. (2015, pp. 40-42) also highlight similar key features of effective outreach initiatives: collaboration; on-campus experience; mentoring and role models; collaborative teaching; and in-school learning activities.

Edwards et al. (2013, p. 73) concur, finding that the following were effective in outreach programs: enhancing knowledge of the benefits of tertiary education; raising aspirations in disadvantaged communities; improving selection processes for entry to courses; financial support; and building partnerships “between communities, schools, tertiary providers, employers, industry groups, and social enterprises that aim to develop qualifications that will benefit the regions they serve”.

Evaluation of outreach programs for Indigenous students

Smith et al. (2017, p. 47) noted that “HEPPP has financed many successful university outreach activities to improve participation of disadvantaged students (especially Indigenous and low SES students)”. However, there is limited published evaluation of outreach programs for Indigenous students.

Thomas et al. (2014) focus on the UniCamp program at the University of South Australia, a partnership with Mimili Anangu School. The program is run multiple times per year for years 9 to 12, accompanied by teachers and Aboriginal Education officers (2014, p. 28). Drawing on student and teacher responses to a survey, Thomas et al. (2014, p. 29) found that UniCamp “may have increased students’ level of self-esteem and confidence, along with their feeling comfortable interacting with unfamiliar people” but did acknowledge that a more formal evaluation would be useful to demonstrate strengths and weaknesses.

Macgregor et al. (2015) focus their evaluation on Central Queensland University's Indigenous Youth Sports Program for 10- to 15-year-olds. Drawing on a pre- and post-survey, they argue that the program "successfully increased student knowledge of higher education opportunities that exist for these students" (2015, p. 87).

Paige et al. (2016) undertook interviews with staff and drew on Gale et al.'s (2010) Design and Evaluation Matrix for Outreach (DEMO) to examine the core features, outcomes, strengths and challenges of six outreach programs. These six programs attempt to improve successful higher education study pathways for Indigenous students in disciplines underpinned by mathematics (including the Aboriginal Summer School for Excellence in Technology and Science and the Curtin University Indigenous Australian Engineering Summer School). Significantly, they found that "unfamiliar, unsupportive and challenging university cultures" are an issue for Indigenous participation in higher education (p. vi) and that there is potentially a mismatch between Indigenous knowledges and Western worldviews on aspiration and success.

In a related form of outreach, the Australian Indigenous Mentoring Experience (AIME) was evaluated by Harwood et al. (2013) to identify the potential impact the AIME Core and Outreach programs may have on the schooling aspirations, engagement and identity of participating mentees. In line with current perspectives on the need to focus on "success factors" in relation to Indigenous students, the evaluation focused on capturing the positive experience of mentees (Harwood et al., 2013, p. 6). The team drew on a mixed-method design involving qualitative interviews with program facilitators, mentors and mentees; review of AIME documentation; and a quantitative survey of mentees. Findings included that the program had a positive effect on:

- strength and resilience of mentees
- pride in being Indigenous
- making strong connections with Indigenous peers, mentors and culture
- aspiration and engagement for finishing school
- aspirations for continuing to further study
- school retention rates (Harwood et al., 2013, p. 7).

Linked with the evaluation of outreach programs for Indigenous students is the evaluation of enabling programs for Indigenous students (Hall, 2015; Taylor et al., 2020). Edwards-Vandenhoeck (2016, p. 986) discusses the evaluation of the Marngo Designing Futures camp at Swinburne University of Technology which was set up to "connect young Indigenous students with university and the world of design". Drawing on "mixed participatory modes of evaluation", with an emphasis on reflection, creativity and discussion, Edwards-Vandenhoeck (2016., p. 993) notes that "while it is impossible to quantify the long-term impacts at this early stage, the program's focus on self-actualisation—building resilience, confidence, self-esteem, cultural knowledge, belonging and identity—marks the beginning of a transformative journey for its participants, whatever paths they chose to take".

Complexities of evaluating outreach programs

There are a number of complexities in evaluating outreach effectiveness identified in the literature. For example, Harrison and Waller (2017, pp. 83-84) highlight five challenges for evaluating outreach activities:

1. **Selection and self-selection biases:** Those families already predisposed towards education are likely to disproportionately take up opportunities.
2. **Priming and social desirability effects:** Young people become attuned to the idea that there is a "correct collection of attitudes to express to practitioners, teachers and parents".

3. **Deadweight and leakage:** Deadweight is described as when “a disadvantaged young person who was already on the pathway to higher education without the need for outreach activities participates” while leakage is when “the targeting method fails and relatively advantaged individuals are erroneously included within the target group ... it will tend to cause an over-estimation of an activity’s effectiveness by capturing individuals who were always likely to apply to university”.
4. **Complexity and bounded rationality:** The lives of all young people are “messy”.
5. **Confounding factors and non-linearity:** “There are many confounding factors at work. In particular, the impact of the school and its teachers, where young people spend far more time than in outreach activities, are very likely to effect changes to knowledge about and attitudes towards higher education ... there is also the risk of assuming that there is a linear and positive cumulative effect over time – i.e. that each activity goes a little way further to tipping them towards higher education. This is likely to be fallacious”.

In response to these complexities, Harrison and Waller (2017, p. 82) suggest a “small steps” approach to evaluation by focusing on defining “effectiveness” as “judging the amount of change which can be ascribed to an activity”.

Naylor et al. (2013, p. 35) note that “evaluation of equity programs and initiatives is hampered by a number of complexities and confounds. Clearly, there are a large number of factors that affect whether an individual chooses to go to university, and whether they are successful once there”. They note that “for many initiatives, there are too many variables to control in any rigorously methodological way, which makes establishing causal relationships between initiatives and effects extremely difficult”; further, there are too many factors that “affect post-school aspirations and progress to reliably determine their effectiveness. Even if effective, students may not enrol in the institution implementing the initiative, which also confounds the result” (Naylor et al., 2013, p. 35-36).²

Similarly, in examining the impact of equity scholarships, Reed and Hurd (2016, p. 1246) note that “causality is a complex, messy process ... it would therefore be more appropriate to consider ... the connections of drivers and influences” that impact students’ decision-making (also see Walton & Carrillo-Higueras, 2019, p. 802).

James et al. (2008) emphasise that “it is very difficult to compare the effectiveness of universities’ equity programs given that the success of a program is directly related to the university’s particular student demography and catchment area [and there is] ... little quantitative assessment available”.

The HEPPP evaluation final report (ACIL Allen Consulting, 2017, p. 58) pointed out there are:

several limitations to the evaluation of HEPPP outreach activities. A natural limitation is that the ultimate impact of such activities is not known until participants graduate from high school. Working with school students to prepare them to apply to and progress through university is a long-term, collaborative task, and due to this, many of the ultimate impacts of HEPPP outreach activities are yet to materialise.

The issue of attempting to track post-school outcomes for students who have participated in outreach programs was noted by Bennett et al. (2015) as a problem for measuring the impact of programs. Reiterating Naylor et al. (2013), this is particularly so where students participated in programs run by one university but go on to enrol in another. Although ad hoc collaborations between institutions may allow some of this data to be collected, there are currently no systems in place for tracking these outcomes in Australia.

² It is important to note that the DESE has commissioned The University of Queensland to develop a Student Equity in Higher Education Evaluation Framework to be completed in 2021 for implementation from 2022.

Zacharias and Mitchell (2020, pp. 35-36) concur, noting there is “little published evidence for a link between widening participation programs and subsequent university behaviour through longitudinal evaluations” and there are “no ready-made solutions in the international literature”. For example, in the UK, Passy and Morris (2010) struggled to find a link between participation in the (now discontinued) national Aimhigher outreach program and improvement in progressions to university.

However, Zacharias et al. (2018, p. 14) do point out that:

More sophisticated evaluation of widening participation activities in the UK is now being enabled through the Higher Education Access Tracker Service (Heat.ac.uk, 2018), as well as a collaborative evaluation data-base, to link individual student engagement in outreach activities and link this to administrative data ... enabling participating universities to explore relationships between student participation in outreach programs and subsequent achievement and progression.

They recommend that the Australian Government Department of Education, Skills and Employment consult with equity practitioners on a more comprehensive means of tracking engagement with outreach programs at the school and student level to enable more effective nationwide monitoring and analysis (Zacharias et al., 2018, p. 87).³

The importance of timing, strong university-school partnerships and student ambassadors in outreach programs

The timing of outreach activities is highlighted as being particularly important. Gale et al. (2010, p. 71) point out that “early, long-term and sustained” outreach is key because “it is too late in the last two years of schooling to maximise the effects of the intervention ... hence programs that are designed to work with primary school children and then continue as they transition into the middle years and on into high school would seem ideal”. This is supported by Raciti and Dale (2019), who found that the “timing of the decision to go to university can occur at any point in compulsory schooling” and that earlier outreach exposure ... “would optimise WP [widening participation] activities aimed at increasing LSES [low socioeconomic status] uni participation” (p. 47). They noted the timing of such activities may need to harmonise with the decision-making process of today’s high school students and that around one-third of low SES participants are crystallising and exploring career and university options prior to year 10 (Raciti & Dale, 2019, p. 56).

The importance of deep and serious engagement by universities with their local schools and communities is emphasised in a number of evaluations (Armstrong & Cairnduff, 2012; Skene et al., 2016; Zacharias & Mitchell, 2020). Skene et al. (2016, p. 82) discuss strategies to sustain meaningful relationships with partner schools mentioned by Aspire UWA participants, including information sessions, letters to parents with an invitation to make contact, contact with key community groups, working with other organisations, and holding activities that are culturally appropriate and inclusive. In relation to Indigenous students, Smith et al. (2017, p. 38) note the importance of building trusting and respectful relationships with students, their families and the communities to which they belong in order to engage in discussions about pathways into higher education.

The role of student ambassadors/mentors in outreach programs is highlighted by a number of researchers (Cupitt et al., 2015; Fleming & Grace, 2016; Green, 2018; Ylonen, 2013). Fleming and Grace (2016, p. 314) note that “university programs for widening participation commonly employ current university students for outreach work. Although the terminology used for these

³ In 2020 the DESE commissioned the Australian National University to develop the Widening Participation Longitudinal Study (WPLS): 2020 Scoping and Implementation Study with a focus on examining the impact of equity interventions that aim to enhance participation in higher education.

roles varies widely, they share a single purpose of serving as mentors, role models and advisers to young people”. Focusing on the University of Canberra Aspiration Agents (ambassadors) in the Aspire UC program, they emphasise the benefits that the ambassadors perceived with regard to their own professional futures (Fleming & Grace, 2016, p. 315). Similarly, Green (2018) also highlights the benefits of having university students as ambassadors in widening participation programs by exploring their influence on retention rates and successful outcomes. Cupitt et al.’s (2015) NCSEHE-funded position paper focused on the experiences of the student ambassadors involved in outreach programs to schools that were undertaken by the Queensland Widening Tertiary Participation Consortium universities. They found that ambassadors were very positive about the effect they had on students and were motivated in three main ways: giving to others, personal gain and promoting education (2015, p.35). Importantly, Cupitt et al. (2015, p. 35) argue that:

One of the most valuable assets ambassadors bring to the program is their own lived experience of university and their pathway in accessing it, in the form of the stories they can share about those experiences. This expert knowledge helps bridge the gaps between school students and higher education, and de-bunk misconceptions held by school students, particularly those stereotypes about who can go on to university and what they can study once there.

Frameworks and resources for evaluating outreach

Attempting to evaluate outreach activities without knowledge of evaluative or investigative research methods is noted by Holland et al. (2017) as a significant barrier for outreach practitioners. Gale et al.’s (2010, p. 12) Design and Evaluation Matrix for Outreach (DEMO), which includes four strategies and 10 characteristics of effective programs (see Table 1 below), has been utilised by a number of practitioner-researchers as a useful tool to evaluate outreach programs (Austin & Heath, 2010; Rigney, 2017; Skene et al., 2016).

Table 1. Gale et al.’s (2010) Design and Evaluation Matrix for Outreach

ASSEMBLING RESOURCES	ENGAGING LEARNERS	WORKING TOGETHER	BUILDING CONFIDENCE
People-rich	Recognition of difference	Collaboration	Communication and information
Financial support and/or incentives	Enhanced academic curriculum	Cohort based	Familiarisation/site experiences
Early, long-term, sustained	Research-driven		

The four strategies developed by Gale et al. (2010, p. 13) and their correlating characteristics are described below:

- **Assembling resources:** committing human resources (people-rich), financial resources (financial support and/or incentives) and time resources (early, long-term, sustained) to support and implement outreach programs and activities.
- **Engaging learners:** learning about programs, their effects and intervention strategies more generally (research-driven), high-quality and rigorous student learning driven by quality teaching (enhanced academic curriculum), and learning from and valuing the knowledge of others (recognition of difference).
- **Working together:** cooperation and partnership at the level of program design and implementation (collaboration) and in terms of engaging student communities through programs, rather than just targeting individuals (cohort-based).
- **Building confidence:** strengthening students’ awareness of university structures, pathways and opportunities (communication and information) and increasing students’ familiarity with university contexts and lifestyles (familiarisation and/or site experiences) in order to promote the view that access to and participation in higher education is for everybody.

However, Walton and Carrillo-Higueras are critical of the matrix and point out that it “failed to explain ways to assess outreach effectiveness” (2019, p. 800).

Other frameworks and resources include the Framework for Evaluation of Equity Initiatives developed by the Centre for the Study of Higher Education (CSHE, 2010) for the Group of Eight (Go8) universities to evaluate the effectiveness of their equity initiatives and interventions in the context of Australian Government policies and the distinctive missions and responsibilities of the individual Go8 institutions. This framework focuses on three broad areas: access and participation, attainment and achievement, and graduate outcomes. The framework considers a range of equity groups, including people from low SES backgrounds; Indigenous people; people from rural and regional Australia; people from cultural minorities; people from various non-English speaking backgrounds; people with disabilities including those with mental health issues; and the gender variations in particular fields of study and occupations.

Wilkins and de Vries (2014) provide a short summary “to assist practitioners who are commissioning, planning or commencing evaluations of equity initiatives in higher education” (p. 1) and highlight that evaluation involves five key aspects: inputs, activities, outputs, outcomes and impacts. They list additional readings in relation to evaluation, equity evaluation and student equity evaluation.

Naylor’s (2015) *Understanding Evaluation for Equity Programs: A Guide to Effective Program Evaluation* is divided into three main sections: a description of the major concepts in evaluating equity programs, effective evaluation strategies in the three main phases (planning, monitoring, summative phase), and further resources. Naylor et al.’s (2013) *Critical Interventions Framework for Advancing Equity in Australian Higher Education* was revised by Bennett et al. through the development of the Equity Initiatives Framework (Bennett et al., 2015).

The framework provides a detailed frame of reference for the planning, monitoring and evaluation of equity programs, but notes that programs are context-specific. The framework includes the entire higher education student life cycle: i) pre-access: outreach to schools and communities; ii) access: pathways and enabling pathways; iii) participation: transition, engagement and progression; and iv) attainment and transition out. The framework provides examples of data sources and evaluation methods relevant to equity initiatives. Further, Bennett et al. (2015, p. 9) argue that “there is scope to develop an interactive web-based toolkit as a shared resource for institutions and program providers to help plan and evaluate equity initiatives in higher education. This site could present hyperlinks with a drill-down capacity to provide details on planning and evaluation including examples of proven interventions and exemplary evaluation practice”. This framework has been further developed as an “equity initiatives map” by Zacharias (2017). University of Wollongong’s (2019) Framework for Evaluation of Equity Programs outlines nine core principles of effective evaluation which could be used to guide design, implementation and appraisal of evaluation activities.

There are very few resources for practitioners who coordinate outreach programs specifically for Indigenous students. In relation to evaluation in Indigenous higher education more generally, Rigney (2017; also see Paige et al., 2016) draws on Gale et al.’s (2010) matrix to propose a conceptual Design and Evaluation for Indigenisation Framework (DEIF). Smith et al. (2018) contextualise evaluation in Indigenous higher education by arguing that Indigenous knowledges should be repositioned as a central element and core principle underpinning evaluation. They also emphasise that the work on Indigenous data sovereignty and the culturally appropriate use of data is relevant (also see Kukutai & Taylor, 2016; and Walter et al., 2020). Smith et al. (2018, p. 68) propose a “conceptual model for potential performance parameters to strengthen Indigenous higher education monitoring and evaluation in Australia”. The conceptual model includes potential performance parameters and four interrelated spheres: students; families and communities; schools and other organisations; and

universities. Importantly, Smith et al. (2018, p. 17) note that “Indigenous student success stories can provide important contextual information about achievements in the Indigenous higher education landscape”.

Methods

The Fellowship involved a mixed-methods approach (combining qualitative and quantitative methods) to identify the range of strategies and initiatives that are used to increase higher education access specifically for Indigenous students. The Fellowship drew on the Equity Initiatives Framework (Bennett et al., 2015; Zacharias, 2017) and Smith’s “conceptual model of potential performance parameters to strengthen Indigenous higher education monitoring and evaluation in Australia” (2018) to then undertake an evaluation of two selected outreach initiatives. Additionally, strategies were developed for strengthening and improving outreach camps through engagement with an expert advisory group and staff at universities.

The Fellowship comprised four phases (see Table 2 below). A fifth phase was opportunistically added to the Fellowship towards the end of 2020.

Table 2. Relationship between phases of activities and significance

ACTIVITIES	SIGNIFICANCE
Phase 1: Establishing the Fellowship program (January–March 2020)	Theoretical
Phase 2: Evaluating outreach programs: Case studies of intensive outreach camps (April–August 2020)	Theoretical, Practical
Phase 3: Developing strategies to strengthen and improve outreach camps (September–October 2020)	Practical, Strategic
Phase 4: Sharing lessons and improving the evidence base (November–December 2020)	Strategic
Phase 5: Broadening impact/dissemination (January–June 2021)	Strategic

Phase one: Establishing the Fellowship program (January–March 2020)

An Indigenous research assistant Hayley Williams was recruited and appointed during this phase. The first Indigenous advisory group meeting was held at UQ (and via online) to ensure that the goals, approaches and outcomes of the Fellowship activities were firmly established, understood and agreed upon. At this meeting, the advisory group members provided feedback on the planned activities, outcomes and timeline. These aspects were reviewed for their potential to improve outreach activities for Indigenous students. Numerous discussions were undertaken with potential universities to organise case studies for the Fellowship. Hayley Williams then worked on mapping outreach programs for Indigenous students across Australia (see Appendix 1), which involved a desktop search of outreach programs; Hayley and I had numerous discussions with outreach staff across Australia to find out more information about the programs and evaluation processes. The mapping found that 24 universities coordinate outreach camps for Indigenous students. There are also five multi-university outreach camps where Indigenous students visit multiple universities during the camp (e.g., The National Indigenous Business Summer School, the Victorian Indigenous Engineering Winter School). There are equal numbers of general outreach camps and specific discipline camps (e.g., science, engineering). There are also equal numbers of camps for senior high school students (years 11-12) and junior high school (years 7-10) and there are 11 outreach camps that target Indigenous students in all high school years (years 7-12). There is some publicly available information about the evaluation strategy and impact of programs for 23 programs. These usually involve pre- and/or post-program student surveys. However, some programs do not have clear evaluation strategies available. In some contexts evaluation is underway but not publicly available and three universities noted in phone/email discussions that evaluations were in-process but that no findings were yet publicly available. However, this does indicate that further work needs to be done to strengthen the evaluation of Indigenous student

outreach programs. This desktop mapping will be explored further in future publications. A literature review of articles relating to the topic was also undertaken. A crucial aspect of this phase was completing all required ethical clearance processes. In phase one, I also attended the 2020 Equity Fellows meeting in Perth.

Phase two: Evaluating outreach programs: Case studies of outreach camps (April–August 2020)

This phase involved data collection with interviews being undertaken with 32 Indigenous university students who participated in outreach programs while at school, 15 outreach staff and five caregivers/parents. Staff participants were identified through my contacts and networks at universities while students were invited by the outreach staff to participate in an interview. Students were asked if their caregiver/parent would be willing to participate in an interview. The interviews were transcribed by a professional transcription service and then analysed using NVivo data analysis software. A survey was also circulated via Indigenous centres across Australia (see this report's findings section for more detail). Conducting both interviews and a survey allowed for rich data to be collected. The interviews allowed me to gather detailed information about student, staff and caregiver experiences of outreach activities. The survey enabled the presentation of a profile of students' characteristics.

Phase three: Developing strategies to strengthen and improve outreach camps (September–October 2020)

In phase three, a second Indigenous advisory group meeting was held. At this meeting, the group reviewed the data analysis, discussed the development of resources for outreach staff, and discussed the shift of the originally planned national symposium to an online webinar due to COVID-19. This meeting also evaluated the Fellowship results to ascertain if the objectives and outcomes had been achieved. This phase also involved the development of strategies to strengthen and improve outreach camps for Indigenous students. I also presented a "lightning talk" as part of the Equity Fellows Snapshot Forum which focused on three reasons why outreach programs "work" in this context and three ways to strengthen outreach programs. This was followed by Q&A time with advisory group member Professor Maria Raciti and facilitated by Dr Nicole Crawford (see ncsehe.edu.au/ncsehe-student-equity-snapshots-forum-katelyn-barney/).

Phase four: Sharing lessons and improving the evidence base (November–December 2020)

A webinar with expert panel members Professor Maria Raciti and Professor Gawaian Bodkin-Andrews was held instead of the originally planned face-to-face national symposium in November 2020 due to COVID-19 travel restrictions. The webinar focused on practical tips for outreach practitioners on planning for evaluation, examples of evaluation practice, and how to design effective evaluation. This in turn aimed to contribute to building a stronger approach to the evaluation of Indigenous student outreach programs to improve Indigenous student university participation (see ncsehe.edu.au/event/ncsehe-panel-discussion-evaluate-outreach-programs-indigenous-students/). The final report was completed in December 2020. I also began developing a suite of resources for outreach staff (video clips, podcast and handout) during this phase to be completed in phase five.

Phase five: Broadening impact/dissemination (January–June 2021)

In order to continue to raise awareness of the Fellowship activity program and further disseminate findings, a fifth phase was added. A dissemination plan has been developed to submit peer-reviewed articles and media articles during this time based on the findings. During

this phase the resources to assist outreach staff in evaluating their programs will also be finalised.

The following section describes the data collected as part of the Fellowship. The research project was approved by the UQ Human Ethics Research Committee (2020000909).

Qualitative data collection: Interviews and open-ended survey questions

The qualitative part of this Fellowship involved in-depth qualitative interviews with: Indigenous students across five universities who participated in outreach programs while at school; outreach staff who coordinate outreach programs; caregivers/parents; and an online survey for Indigenous university students who participated in outreach programs while at school. The purpose of these interviews/surveys was to explore their experiences of outreach activities and their pathways into university. Interviews were undertaken online (via Zoom or Skype) or phone due to COVID-19 restrictions; details of the interview questions are included in Appendix 2. Informed consent was obtained from participants and interviews were audio recorded with their permission. The semi-structured interviews were approximately 30 minutes in length. I undertook all of the interviews with outreach staff, RA Hayley Williams and I shared the student interviews, and Hayley Williams undertook the interviews with caregivers/parents. Table 3 highlights the overall participant type, number involved and the method of recruitment.

Table 3. Participant type, number of interviews, method of recruitment

PARTICIPANT TYPE	NUMBER OF INTERVIEWS	METHOD OF RECRUITMENT
Indigenous university students who had participated in an outreach camp while at school across 5 universities	32	Outreach staff invited students via email to participate in an interview.
Outreach staff across 5 universities	15	Targeted email invitation.
Caregivers/parents of students interviewed across 5 universities	5	Students who were interviewed were asked if they would invite their parents/caregivers to participate in an interview.

Of the 32 students who were interviewed there were:

- 10 who had participated in camp 1
- 10 who had participated in camp 2
- 5 who had participated in camp 3
- 5 who had participated in camp 4
- 2 who had participated in camp 5.

Due to this data, the decision was made in consultation with the Indigenous evaluator Professor Susan Page to focus on two case studies (camp 1 and 2). The interview data from camps 3, 4 and 5 did however contribute to the overarching themes identified in the Fellowship and will be discussed in subsequent publications.

An online student survey was developed in Checkbox online survey tool. This was distributed to outreach program staff at 19 universities across Australia for further distribution to their Indigenous student contacts who had participated in an outreach program while at school. The survey was disseminated to Aboriginal and Torres Strait Islander Centres nationally.

Ninety-eight Indigenous students who had participated in an outreach program while at school completed the survey. The open responses completed by these students were uploaded to NVivo and coded line by line.

Qualitative data analysis

All recorded interview data was transcribed by a professional transcription service and then de-identified with names, locations, and institutions replaced with codes. The transcripts were then imported into NVivo 12. Line-by-line coding was then conducted with each transcript to enable themes to be identified from the data. The themes were then repeatedly examined and analysed for consistent themes and sub-themes. This process was complemented by a reflective journal that involved interrogating and examining the themes. The themes identified in the data were then shared with the Indigenous advisory group at the second advisory group meeting, the focus of which was to receive feedback on the data and themes presented.

Quantitative data collection: Statistical findings from survey

The online student survey included 35 items separated into three sections: 1) participant's background (16 items); 2) outreach program experiences (17 items); and 3) influences for university choices (2 items).

Section 1: Participant's background

Participant background information was gathered on participant demographic details, course/degree details, previous experience with university studies, caregivers' education experience, and whether the participant was the First-in-Family (FiF) to attend university. Demographic details included age, gender, Aboriginal and/or Torres Strait Islander identity, geographical location (metropolitan, regional or remote area) prior to and during university studies, and travel time to university campus. Information captured on course/degree details included level of course/degree, university of enrolment, field of study, study load, study format and length of time studying. Participants' caregivers' education experience included whether caregivers had finished high school and if they attended university. The item relating to each participant's FiF status included whether they were the first among their caregivers, siblings, aunts/uncles and cousins to attend university.

Section 2: Outreach program experience

Information was collected on participants' outreach program experiences including participation in outreach camps and/or other outreach programs, and age at the time of participation. Participants were asked to rate their overall experiences with the outreach programs and staff on a 5-point Likert scale ranging from 1 (very bad) to 5 (very good). Participants were also asked to indicate how much they felt the outreach program content was engaging and relevant, and whether outreach staff maintained contact with them post-program; this was also rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Participants were given seven statements relating to the impact of the outreach program content on their aspirations to attend university and again were asked to rate these on 5-point Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree). Finally, participants were given an open-ended question as to what they found most useful about their program experience.

Section 3: Your other influences

Participants were given a list of potentially influential factors that are internal (14 items) and external (17 items) to their course/degree and university. Participants were asked to rank each of these factors in relation to how much each one influenced their choice to enrol in university and their course/degree, using a 5-point Likert scale ranging from 1 (not at all) to 5 (very much).

Quantitative data analysis

A combination of frequency and descriptive analysis was used to explore participant characteristics. A series of Pearson Chi-square analyses was conducted between outreach

program type (camps, school visits, career fairs, and/or one day events on-campus) and the degree to which participants agreed with statements surrounding the impact of the outreach program content on them (the statements referred to above in Section 2: Outreach program experience). The significance level used was $p < 0.05$.

Limitations

There are inevitably some methodological limitations to this research. Firstly, the quantitative survey involved a statistically low number of respondents (98 students) so therefore any extrapolation needs to be undertaken with caution. Secondly, the qualitative aspects of the Fellowship involved students, outreach staff and caregivers/parents being asked for their views based on their experiences and these responses are by nature subjective. Thirdly, other possible limitations in relation to evaluating outreach programs, as outlined by Harrison and Waller (2017, pp. 83-84) are the influence of:

- **Selection and self-selection biases:** Those students already predisposed towards education are more likely to disproportionately take up opportunities.
- **Priming and social desirability effects:** Young people become attuned to the idea that there is a “correct collection of attitudes to express to practitioners, teachers and parents”.
- **Deadweight and leakage:** Deadweight is described as when “a disadvantaged young person who was already on the pathway to higher education without the need for outreach activities participates” while leakage is when “the targeting method fails and relatively advantaged individuals are erroneously included within the target group ... it will tend to cause an over-estimation of an activity’s effectiveness by capturing individuals who were always likely to apply to university”.

However, the wider body of knowledge regarding evaluation of outreach programs, consisting of other research both national and international, also informs the findings included within this report. Care has been taken to ensure that findings derived from quantitative and qualitative interview data are also supported by other research and/or other relevant data. Therefore, it is reasonable to assume that these findings are generally transferable to the wider context of outreach programs for Indigenous students in Australia.

Findings

This section presents the findings in four main sections: outreach camp case study 1, outreach camp case study 2, caregiver/parent interviews, and student survey findings.

Case study 1: Outreach camp 1

About the program

This outreach program is run at a large metropolitan university with a team of three Indigenous outreach staff. The outreach staff work with specific faculties at the university to run six discipline-specific camps for Indigenous school students over the year in different disciplinary areas. The program has been running since 2014 and is held during the school holidays. Most of the camps are for students in years 11 and 12 and one camp is for years 9 and 10. Students stay in a residential college for five nights. The aim is to provide Indigenous students with insight into the wide range of study options. The students participate in interactive workshops and lectures, and workplace/industry visits. They receive guidance from student ambassadors and industry experts about study and career opportunities. Students apply for the camps and are chosen according to criteria that include examining their school reports from year 7 to the current year (students have to be achieving Bs and above). They are also required to have 90 per cent attendance at school and be on an ATAR (Australian Tertiary Admission Rank) pathway to be accepted to attend the camp.

About the students

Ten current university students were interviewed as part of this case study. Of the 10 students, four had moved from regional areas to attend university. Seven of the students transitioned to the university where this specific camp was held, with the other three now attending other universities. The students had diverse pathways from school into university with some transitioning straight into university, others taking a gap year before commencing university, and others attending one university and then transferring to another, which demonstrates the difficulties in tracking students through school into university. Many of the students participated in multiple outreach programs in addition to the camp while at school.

Examples of two student pathways are illustrated in Figures 1 and 2. The examples (details removed to ensure student anonymity) demonstrate the diverse pathways and the multiple programs these Indigenous students had participated in.

Themes in case study 1 student interview data

Student perspectives on success factors of the camp: What works

Students discussed a number of success factors of the camp that are detailed below within themes:

- connections
 - peer-to-peer
 - student-to-ambassador
 - student-to-staff
 - student-to-own cultural identity
- the important role of the ambassadors
- the important role of cultural activities on the camp.

The connections and relationships that students made—peer-to-peer, student-to-ambassador, student-to-staff and to their own cultural identity—while attending the camp were key success factors.

The word “family” and the phrase “like a family” were used by many interviewees:

It just was basically a family by the end of it ... It was just an amazing environment to get to learn that with all these new people.

They felt more like a family than [other universities]. There was a big factor for me ... Yeah, it just felt very like family.

You felt like home when you went there.

It's so diverse and they really built up the family aspect to the Indigenous culture.

The biggest selling point for me was the family-like staff ... It was just sort of a stepping stone that just pushed me further into wanting to go to university and that family side of things.

I could do a major in mechanical engineering at ... pretty much anywhere, but to get that added benefit of the family aspect.

Peer-to-peer connections were a key success factor of the camp, with the opportunity to meet like-minded Indigenous students with aspirations to attend university:

I think the best aspect for me was being around like-minded young Indigenous students like myself who wanted to go to university and wanted to pursue further education.

It was good for me to meet other people who are like-minded ... I'm even in contact with a few of them. I was thinking of moving in with them while I'm doing university.

People at the camp, the other participants, I have built relationships with them and I maintain them ... just having that connection there definitely made coming to uni a lot easier.

I'm still in touch with so many people that I went to [camp 1] with.

This was particularly important as students noted they were often one of the few Indigenous students at their school:

At my school we had very, very low Indigenous numbers ... so I never really got those opportunities to hang out with young Indigenous students my age and discuss about things that we have experienced ... going to those camps and having those chances of rooms filled with these students was so good.

I'm from a smaller school in [town], and there were no other Indigenous students in my grade. It was great to be able to get to know people in that sort of environment.

Many of these connections continue to be maintained on social media after the camps:

We have a group chat on Snapchat with everyone, and then I can contact with a few direct people as well.

I still have so many people on social media platforms ... It's been great, because we'll meet up sometimes, we'll discuss how uni is going, we'll discuss personal lives. That's been so good ... I'm still in contact with some of them via social media or email or phone call, which is great. It's been so good.

When I was there for my camp, by the end of it, we had a huge group chat on Snapchat which there were ambassadors and stuff in. We could talk to the people who were the ambassadors there all the time.

Some students also talked about the connections they made with student ambassadors who were current Indigenous university students working as ambassadors/mentors on the camp:

I love the fact that the people that were running the camp were students of the uni already, and that they were Indigenous students, as well.

Which I think was a really good part too, actually, is that they had the students be the leaders of most of the camp, because we can relate to them a bit more.

There were a few people that I met on the camp who were students studying law at uni already in third and fourth year and stuff like that. So I've managed to see them around campus and stuff like that and I've talked with them in Orientation Week and stuff like that and even just ongoing a little bit as well. So that was good to be able to know some people, even just [to] ask really simple questions.

I think being our age of 16, 17, 18 it was really good to see someone who's just turned 20 or in their early 20s ... So, it was good to see that they picked their degree, and even then, wanted to continue their study. Whereas us still at high school may not have been sure of our degree but we wanted to continue study... having that interaction with the student ambassadors really helped.

I just remember when I was a [school] student that was really helpful to hear — to get to know their [the ambassador's] story and kind of learn from their experiences in a way.

Some students also discussed the connections they made with outreach staff and other faculty staff on the camp and how this then assisted them to feel more comfortable and familiar with the university campus:

I think for me it was good to get some connections before actually heading to campus, especially with the Indigenous unit for me was a big thing, just knowing a few of the staff members there and stuff like that and even just meeting some of the people in the law faculty for me. But yeah, I think just making those connections and becoming familiar with the campus and what I would be studying, it really helped me.

The staff members that were leading the camp, I have seen them around campus and that has been really good. Starting as well, just knowing there's familiar faces, especially in the Indigenous unit. It's nice to go into a space where I know people and I don't feel out of place. Knowing someone already has definitely made it a bit easier for me, especially in studying what I study on-campus and stuff like that, I felt a lot more comfortable going somewhere where I know people, especially staff members and stuff.

The importance of having the opportunity to connect with one's own cultural identity on the camp was also highlighted by many students, especially as for some students they did not

have many opportunities to connect to their identities in other contexts, such as at school or at home:

I definitely think it was getting to connect with my heritage more, and connecting with others because I'm from a smaller school ... and there were no other Indigenous students in my grade.

It just really allowed you to express your Indigenous culture.

I always wanted to learn more because I didn't understand why he [my Dad] was so negative towards Indigenous people, Indigenous culture when he is Indigenous and that is his culture. So yeah, it was really nice to, yeah, from these camps have all those cultural activities and all these stories from the elders and just learn about it.

We did a lot of activities like getting to know each other and then we did a lot of activities about our background, about what we thought, cultural-wise, and I really, really enjoyed that because you don't really get to experience that at school or anything. So it's nice to be with like-minded people.

This illustrates the importance of cultural activities within the camp to provide opportunities for students to connect with like-minded Indigenous students and to help students affirm their Indigenous selves (Raciti et al., 2017).

Student perspectives on aspects to improve and strengthen camp 1

Three areas discussed by students on ways to improve the camp are examined below:

- better post-camp engagement with students
- further Indigenous perspectives in the curriculum of the camp
- more opportunities for students to reflect and connect with their own cultural identities on the camp.

Post-camp engagement was highlighted by numerous students as something that could and should be improved. Students talked about a lack of follow up from the camp:

I believe one of the staff members contacted us with a letter to see how we went ... But after that, I don't think we really had anything after that. But yes, the follow-ups could be improved, I believe.

That would be good if there was more engagement.

I can't recall anything, but seeing we are all on social media and I was Facebook friends with the people that were running it and stuff, they would send me a chat whenever, but it wasn't like, oh how are you going, kind of thing, what are you doing with your studies? It wasn't like that. It was more like just on a friend basis. I think that would definitely help.

The camp was halfway through the year and it wasn't until the following year that I started uni. So even during that over six-month period I think it would have been nice just to have maybe a bit more connection there, just a bit of a follow-up just to see how I'm going, my options and stuff like that, what I'm thinking about doing.

Other students suggested post-camp engagement activities:

If they could have organised a meet-up again, after the thing, to get everyone to — that sort of thing. I understand that's hard, because at this camp everyone was literally from everywhere, all over the state ... So, I understand that's hard but that would have been nice to have sort of a meet-up thing after the camp, a few months later or something.

Definitely if there was more engagement, like, just to help guide students who maybe had finished high school and they've already got an OP [Overall Position]⁴, just to maybe help them look at different pathways, different stepping-stones like what I did.

Even if it's just like at the start of the year putting a shout-out to all the students from the previous year or two, whether they did want to come together and meet because I know a lot of the students went on multiple camps, so they know a lot of people across camps. So even having a small get-together at the start of the year for anyone who did come to one of those camps just as a bit of a reconnect.

Another aspect which students discussed could be improved on the camp was more Indigenous perspectives in curriculum, emphasising the need for the hands-on activities included within the camp to be further Indigenised:

We're at an Indigenous camp; we're all Indigenous; we should be talking about Indigenous perspectives within our degrees.

At the end of the day it is a camp for Indigenous students, but I think there could be some more aspects incorporated throughout the camp.

I feel like we didn't talk about that as much as we should ... So that would have been definitely a great conversation to have, which, unfortunately, we didn't, but definitely something to improve on.

Maybe it can be like, we're going to blow away the myth that Indigenous people didn't know science. That will be really a great thing for them, as well, because when I researched that, I was like, wow, my people were intelligent.

Students also noted that more discussion and reflection on cultural identity would further strengthen the camp:

I think there are some more cultural aspects that probably could be involved, whether it be just little things throughout the day or even the nights to focus on that. As I said, at my school we had a very low Indigenous population there, so going to this where I know I'm surrounded by Indigenous students, it would be good to experience and learn. That's one thing I noticed is during the introductions a lot of students that were there that didn't really know much.

That would probably be great if we could do more, just because I feel like we never really get the chance to speak about that. It was just so nice hearing other people's perspectives and being able to share your own story, like your family background. That would probably be — if I had any improvements, that would probably be one thing, just maybe to focus on that a bit more because I feel like it's hard for people to speak up about that unless they're in a setting like this where it's very, very comfortable.

It would be great if they did have a couple more opportunities just reflecting on that identity and stuff like that ... Even introducing something a bit more cultural. I know we shared a bit of our stories on day one and stuff like that, but it wasn't anything huge. So maybe something like that could be implemented.

Another aspect that could be improved is having more outreach camps earlier in schooling. Many students mentioned that they were already planning to go to university before attending the camp:

I was definitely set on going to university. I just didn't know where.

⁴ Overall Position (OP) refers to a tertiary entrance rank used in Queensland to guide selection into tertiary study. From 2020, the OP rank was replaced with the ATAR, bringing Queensland in-line with all other Australian states and territories.

I was in grade 12 at the time and I was still figuring out which uni I wanted to go to.

I wanted to do engineering at university but I was still undecided on which campus.

I was leaning towards [studying] law already ... I think throughout the whole camp something that I really appreciated was that we were always getting told if there's something you want to do you can do it, if you're willing to put in the effort and you reach out to the support that's available you can achieve what you want to.

This aligns with Raciti and Dale (2019, p. 56), who note students in later years of high school are “affirming” and “confirming” their decisions about university study and that the timing of outreach needs to be earlier than the senior years. Similarly, Bennett et al. (2015) point out that outreach initiatives are often focused on students at the later stages of schooling, while Gore et al. (2017a, p. 1384) highlight the “growing recognition that the current major investment in careers education and outreach activities in the later secondary years may begin too late”. Certainly outreach camps that are later in schooling are valuable. However, camps in earlier grades could be an important addition to outreach activities. The focus of camps in year 7 to 9 would need to be tailored differently. For example, camps for younger students are likely to require a different format (e.g., fewer days) due to the age and maturity of the students. Parental concerns are likely to be higher and thus formats like a ‘parent and child’ camp may be needed for junior secondary school (year 7 or 8).

Overall, the connections students made at the camp emerged as a key strength of the program. As one student noted: “I feel like the community of the camp is equally as important as the message and the education”. Students also noted that the camp allows Indigenous students to learn more about the university in a safe space with other Indigenous students, ambassadors and staff:

Just the uni exposure and being able to do the uni stuff as if you were in a normal mainstream cohort, but then, having black people around you is, like, that comfort, so I feel safe.

It's just a safe place.

The camps did help a lot with my confusion towards going to university. I think a lot of people experience the same struggles where their families don't really know anything about university. It seems like a really scary place. A place that's hard to connect with and knowing that there's such a community and a culture there and just like a loving space where you can build a family and be really close with the support staff there and just know that it's not such a scary place, as well as learning about all — the education part as well. It makes university feel a lot, well to me, it made it feel like university was a lot more accessible.

Overall, the camps played an important role in demystifying university for students, and importantly created a safe space for students to connect with each other, with ambassadors, staff and with their own cultural identities. These students indicated that the inclusion of more post-camp follow up, increased focus on Indigenous perspectives in the camp content and providing more opportunities to reflect on their own identities would further strengthen the program.

Themes in case study 1 staff interview data

Staff perspectives on success factors of camp 1: What works

Four Indigenous outreach staff who have worked on the camps were interviewed as part of this case study. The success factors highlighted by staff are discussed in three themes below:

- connections
 - peer-to-peer

- student-to-ambassador
- repeat attendance of students to camps at this campus
- the role of student ambassadors.

Similar to the students, staff also talked about the important connections students make with their peers:

I think the biggest highlight of the camps is the beautiful networks and friendships they make within the camp ... You definitely see students becoming friends with one another. Sometimes they'll talk to each other about applying for another camp, so you definitely get that relationship-building and connecting on their own.

I guess the real power of the camps was the students connecting with each other ... But when they come to the camp, they're surrounded by kids or young adults that are all thinking the same way, so I don't know if normalise is the right word, they feel like they're not the only one in the world that's thinking like this.

You know like a lot of the students actually stay in touch with each other after the camp which is really good for them because they're speaking to other students who are potentially on the same pathway as they are. Some of them come from small communities where they don't have anyone to speak to about going to university, so it's a really good thing that they stay in touch with each other.

Just to see the way they all engage with each other; it was like lifelong friends. You can see that there'd been some magic happen.

Staff also noted that there were many repeat attendees to the camps:

For our younger students, they're generally camp repeaters. So they'll come to other camps.

It's like a taster for them. They might come to, for example, the health science camp and realise that health science is not for them, so then they might go to a law camp and then they go, yes this is what I want to do.

Yeah it is great, it's great that they want to keep coming back. Quite a few of the students who have done multiple camps have actually come on to go to [name of] uni.

Quite often the student would come to junior camp twice then to senior camp. We had one student that just came to, I think, every camp one year and he was quite intelligent and he was considering lots of different careers.

The student ambassadors working on the camp were also highlighted as a success factor of the camps:

I think it's important for them to see who they could become or see who they could come to uni with and see. I think they definitely build a strong relationship and you can tell that they keep in contact after camp.

I think having ambassadors and staff so they feel — students feel the safety of having an adult but also feel the encouragement of having someone who's young with them, but still in a leadership capacity.

Staff noted that some of the ambassadors are alumni of the camp themselves:

A lot of the time they were alumni, so they'd been in the participant's shoes before which worked really well.

A number of our student ambassadors are also alumni to the program. They're proud and they're excited to have these conversations with the students because they relate to

them so very personally. They remember going to camp themselves and being quite nervous. Having a bit of an idea, and how learning all that information had set them on the path that they are [on] now. How that's affected them personally. How that's affected their community and their family. How they've seen fellow family members within their family also then take on that same path. So it's had this really lovely flow-on effect in every regard.

There are some that have actually done the camp, so that is also really good for the students because it shows them that transition in the pathways.

Staff perspectives on areas to improve and strengthen camp 1

There were a number of factors staff raised in relation to improving the camp further and these are discussed below in three themes:

- more clarity on what “success” means
- more evaluation – better data gathering/better implementation of feedback
- better post-engagement.

In terms of the “success” of the camp, staff noted that there were varying views on what “success” means in relation to the program. Certainly “Indigenous outreach success is defined differently by different stakeholders” (Raciti, 2020). For staff, success was defined as a multi-layered construct. For example, one aspect of “success” discussed by staff was whether students made the decision to go to further study or whether their aspirations for university study were further confirmed:

A huge success for us is when a student does make a decision about going onto further study, tertiary or otherwise. It's about students making a decision as opposed to being stagnant in the decision.

I think it definitely helped a lot of students even just seeing university as an option. I know there's quite a few that are doing things closer to where they live and stuff like that or similar kind of degrees. So I think it was really valuable in just that encouragement factor and providing the opportunity and encouragement.

For me, [success] is when students have those “aha moments”; when they've started to gather their information and they go “yes, it is possible for me to go to university”. Like, from everything I've seen and heard now and the fears I've had, I know now that it is possible to go.

Other markers of “success” discussed by staff were the growing numbers of students applying for the camps, the students being more motivated when they returned to school, or even deciding that university study was not for them:

It's quite amazing how those numbers keep going up, which means we're having success with the camps, word is getting around.

Getting the feedback after the students have left, some of the feedback we get from the parents and the teachers is quite astounding you know. In some cases they're saying it's changing students' lives. They're more motivated, they're more resilient, they're more proactive in taking up those opportunities outside of their study to take up roles within the schools.

Just because they don't go to uni doesn't mean it's been a failure; it means that they've found out enough to know it's not for me. I think it's pretty effective.

A tension between outreach staff members’ understanding of “success” and university management views on how “success” should be measured was discussed by one staff member:

We were getting evaluated early on about our success rate. The only thing that was being evaluated was how many students were coming from camp the year before into a full-time enrolment at [university name] and I didn't think that told the full story. So, that's why I tracked every year 12 student from the previous year to find out (1) where they ended up and (2) if they preferenced us. What we found was we had three conversions to [university name], we had one deferral out of 31 and a total of 12 first preferences for [university name].

This highlights the disjunction between widening participation agendas versus marketing agendas which aim to encourage the students to come to a specific university:

We're funded by HEPPP and everything's funded by HEPPP which is about getting more disadvantaged groups into university, it's not a funding for more [university name] students. So, while we'd like to see more students come and we feel like we can support the students well, it's not a loss if that meant — yeah, I think it was 26 — the first year was 26 out of 31 that were in university.

This aligns with recommendation within *The Review of Higher Education Access and Outcomes for Aboriginal and Torres Strait Islander People* (Behrendt et al., 2012) that the HEPPP guidelines be revised to provide further clarification that funding under the program should be targeted at promoting higher education in general, rather than promotion of specific institutions.

Staff also emphasised the need for better data-gathering to track student pathways post-camp and better implementation of feedback from students to improve the program each year:

That is definitely something that we also need to improve on, is how we capture data. For us, particularly, our biggest challenge is not having the appropriate or the right programs to be able to properly capture the data. So then there's no ability to analyse and find out if those students are enrolled within [university name]. So we do it. It's labour-some. So at the moment it's a labour-some task. We physically call students and find out how they're going and where they are.

My conversations with other outreach teams are not dissimilar to our issues. It's just finding the right program to capture the unique information that we are capturing.

Moving forward, I don't know whether we're going to have a data person or not so I'm not sure whether we'll still be collecting the data like that ... I don't know whether they had really good systems in place when...

Staff noted that they did do pre- and post-surveys with students, but did not think they were necessarily effective:

We do surveys but we don't do it really well. We haven't done that well at all in the last couple of years, or I don't think we've done it well, period. We obviously do get surveys and they [students] do do them, but I just don't think — I don't know if we don't ask the right questions or the students are just so tired ... We do, we obviously evaluate it, but I just don't think it's worked so far.

Honestly, we haven't done that well. We definitely know what students come to [university name] and particularly if they're engaged in the [Indigenous] unit. But if they don't come to [university name], that's when it can get a little bit murky and if they have a gap year, that can sometimes be a bit murky. I think also the changing of staff can sometimes affect it, as well.

We captured that data but we didn't do a lot with it. We didn't have anyone that would analyse it and turn it into something that we could use to improve the camps.

So it's nice to pull out some nice comments and feel good about the camp, but I think there was probably an opportunity missed — that if we had a data specialist who could crunch that, we could see whether we did make an impact in understanding of pathways and confidence.

Staff noted that they did do some post-camp follow up with students, but that it could be improved, and there is a need for further post-camp engagement with students to continue the connection and relationship:

We have always spoken about this, but our post-engagement isn't great ... I think if we had had better post-engagement — and I think there's some ways that we could improve the outreach team transition to student support.

Our follow up hasn't been as good as it should be. I think that's about doing better systems and making sure we're following up constantly with the students.

We need to be able to continue to develop and get better at connecting the students on a multitude of levels.

It's about that relationship building and making sure they are receiving all the information that they require about university. It's also building that trust, like, in order for someone to come to the university, they have to be able to trust you and know this is a good place to come.

Overall, the strengths of the camp noted by staff were similar to those of students (connections, ambassadors). As was the case with the students, staff also highlighted the need to improve the post-engagement with students after the camp. Staff also focused on the importance of further evaluation of the program year-to-year, to continually revise, rework and strengthen the program.

Case study 2: Outreach camp 2

About the program

The program is coordinated by one non-Indigenous outreach staff member in collaboration with other non-Indigenous staff and Indigenous student ambassadors who work as leaders on the camp. It is focused on a specific disciplinary area and has been running at a large metropolitan university since 2010. It is hosted by the university and funded primarily by an external charity. The program has also been run at another university for 24 years. This week-long camp is open to students in years 9 to 12 during the school holidays once a year and usually about 20 to 25 students attend. It provides Indigenous students from around Australia with the opportunity to experience what it is like to study the disciplinary area at university and explore careers post-university. Students travel from across the state and interstate to attend the camp and stay near campus. They participate in practical hands-on activities, site visits, cultural activities, and networking opportunities to meet Indigenous alumni and industry representatives. If students are selected to attend the camp, they qualify for a school scholarship to assist with education expenses in years 10, 11, and 12. If students complete year 12 and get a place at any university in Australia in the specific discipline or related degree, they are eligible for a tertiary education scholarship.

About the students

Ten current university students were interviewed as part of this case study. Of the 10 students, three had moved from regional areas to attend university. Five of the students transitioned to the university where this specific camp was held, with the other five now attending other universities. Four were studying degrees in the same disciplinary area as the camp, while the other six were studying other degrees. The students had diverse pathways from school into university with some transitioning straight into university, others undertaking

bridging courses before attending university, or taking a gap year before commencing university. Others attended one university and then transferred to another, which again demonstrates the difficulties in tracking students through school into university. Many of students attended the camp multiple times or participated in multiple other outreach programs in addition to the camp while at school.

Figure 3 is an example student pathway (with details changed slightly to ensure anonymity) which demonstrates the diverse pathways and the multiple programs students had participated in.

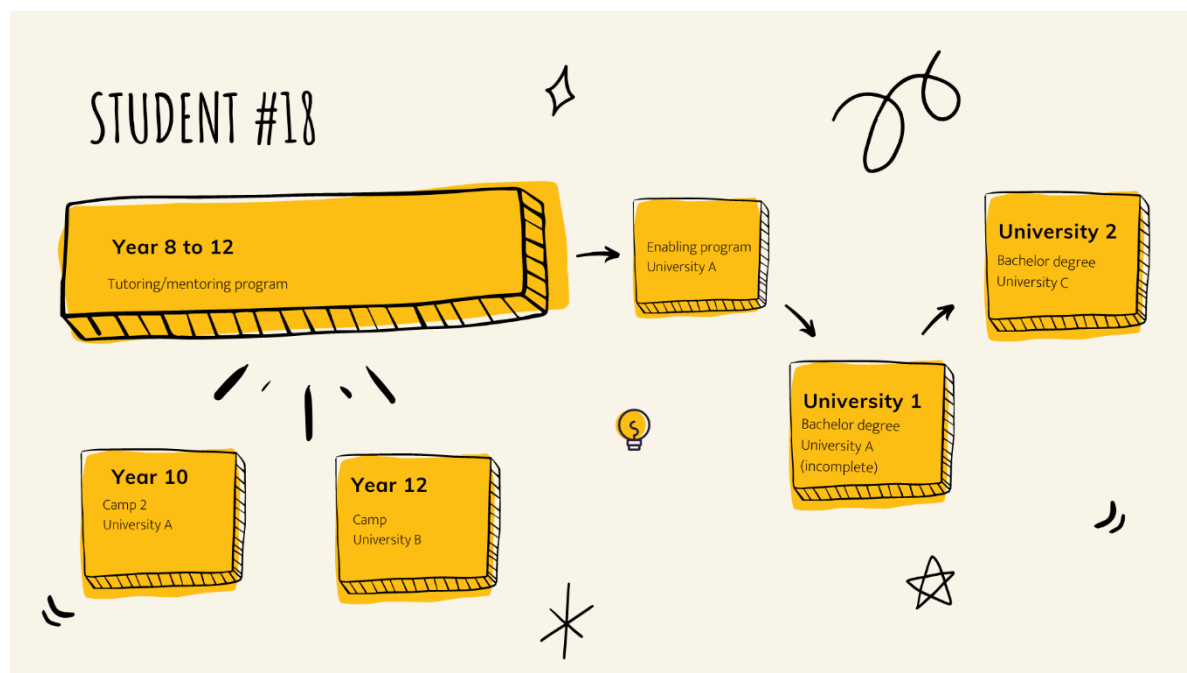


Figure 3. Student #18 pathway into university

Student #18, illustrated in Figure 3, participated in camp 2 during year 10. She also attended a different camp in year 12 as well as participating in a tutoring/mentoring program from years 8 to 12. After school she undertook an enabling program before enrolling in the university where the camp was held before transferring to another university and a different degree.

Themes in case study 2 student interview data

Student perspectives on success factors of the camp: What works

Students discussed a number of success factors of the camp that are detailed below within themes:

- connections
 - peer-to-peer
 - student-to-industry
- hands-on activities
- student ambassadors
- cultural aspects of camp
- positive post-engagement.

Like students in case study 1, students spoke at length about the connections and relationships they made with other like-minded Indigenous students on the camp:

I was able to spend time with about 20, 25 other students from different high schools around the state ... I'm actually still in contact with quite a few of them.

I got to meet a lot more of a larger network and a lot more people in the Indigenous community here, which was really nice because, like, all my family is from elsewhere ... I don't really know anyone here too much. But yeah, that was awesome because it opens you up to having a much stabler [experience] and you can help each other.

I really enjoy talking to people that really care about it and want to help — want to do things and stuff. So that was huge. It was nice to meet people, like-minded people.

Just getting to know everybody from their different cultures and values, knowing that there's other like-minded people the same as yourself. I think that was more of a personal one for me. Because growing up, I didn't really know too many other Indigenous people following the same sort of lifestyle as me at the time. So, it was kind of a relief. It was like, oh, there's great opportunity still.

Students also spoke about the connections they made with industry representatives who spoke to the students at the camp:

I was able to meet a lot of industry professionals ... good opportunity to understand the different careers out there and just get in contact with the industry ... meeting all these different companies, it was really good, really well set out ... From this camp, I was able to secure a position with a company that was interested in benefiting Indigenous people. So, it's not like these companies participated just to tick the box; they were actually searching [for] the different people, students, that might be able to work in these sorts of companies.

I think the best part, I would say, is actually talking to the industry representatives, talking to people in the field ... like a one-on-one conversation. They will tell you what they did, how they did it, what they thought about it. I think those parts were the most eye-opening.

I remember meeting someone from [industry], and he took me and mum out for lunches a few times, talking about the cadetships, afterward ... I met him on the summer school. He gave me his email and contact information. Then we got in contact with him, and we sorted out some cadetships.

Students spoke with excitement about the varied hands-on activities on the camp:

I think it was the varied activities, if I'm going to be honest. ... We were able to go through hands-on activities, learning different things as well ... We were able to go out into the city to visit the [building name] building.

We got to use telescopes and look at planets and stuff like that. It was just kind of like whoa!, not many people get this access to have this creativity when they want to do things.

I think the highlight of the trip was definitely going into the stadium before it was finished being built and we got to tour around there when all the electrical wires were still hanging out and before the grass was put down on the oval. It was just really, before even half the seats had been put in as well, so it was just really — that was probably the highlight.

Student responses regarding student ambassadors in camp 2 were similar to student responses in camp 1. Student ambassadors play an important role on the camp leading the activities and staying with the students in accommodation. They act as mentors to the students answering questions about studying at university:

They kind of told you straight what uni was like and what you'd go through and stuff like that. There wasn't really any hand-holding which was kind of nice. They were just very

much like, this is for real. You've got to work; you can't just come in here expecting to do nothing.

The mentors we had were really nice. They were all Indigenous and really passionate about Indigenous education and outreach programs and stuff and I could see that. They wanted to be there and that was cool.

The [ambassadors] were good, because they weren't that much older than us—like a few years—five years, or so. So they're still pretty relatable. They'd been through the whole process pretty close to what we were, so it was easy to talk to them and relate to them a bit more.

Like the students who attended camp 1, a number of the students who attended the camp are now ambassadors/mentors on the camp:

I did help run the camp ... I would still count that as a very learning experience that I got from the camp.

So I've been doing that for a few years now and I'm loving that. That's from my connections that I made when I was at the camp.

I came back, I think two years ago, and I was [an ambassador].

Similar to student responses in relation to camp 1, the cultural aspects of the camp are important, allowing students to connect with their cultural identities and, for some students, learn more about their culture:

The cultural aspects were quite rewarding, as well, like an eye opener. I don't really have that much connection with—in my Aboriginal family—so the cultural side was quite—what's the word—probably eye opening, and just interesting to learn and listen to because we had a few people that came in and told stories and what not.

When I was younger, I didn't know too much about it. ... He [an Elder] was really good with it, because he — on the first night, he came in and he did the smoke ceremony with us all, and just told us a bit about — well, some stories and a bit of our culture and stuff that no-one, a lot of us, didn't know about — like a bit more sense of the community. That was really good. I loved that.

Not only was the camp [discipline area]-focused, but it actually had a lot about traditional teaching, culture, awareness, which was really great as well. It was like two different sides ... We learned things mainly based on identity or just certain questions that we all had. It's like, can I really be—this is [a] personal one—it's like there's no culture back where I am. So, I'm [spoken in Indigenous language] from the southwest of Australia but our culture got lost basically. So, it's always been in the back of my mind, I'm Aboriginal, but then I'm not at the same time. So, there were a good couple of key speakers that just explained it in a way that made me feel comfortable and, I don't know how to put it into words, but it was like — it was sort of comforting. So, it was really good. You got the answers to your soul-searching.

Especially for students who are unsure about their identities and knowledge, these cultural activities are very affirming and celebrate their Indigenous identities.

In relation to post-engagement with students after the camp, responses from students were mixed with some discussing positive experiences of their engagement with staff after the camp (the outreach staff member's name has been changed to the pseudonym John):

Obviously, I'm still in contact with John and also some of his contacts.

Me and John speak quite frequently. Yeah, no, there's quite a lot of follow-up.

A little bit. John occasionally just sees how I'm going. Messages me. He asks what path I'm on. I was pretty lucky because I got a scholarship ... John congratulated me.

John's probably one of them. He's good to keep in contact with.

Suggestions from students for improvements to the camp are discussed below.

Student perspectives on aspects to improve and strengthen camp 2

Two main themes on how to strengthen the camp were evident in interviews with students and were two of the same themes identified in camp 1:

- more post-engagement with students
- more Indigenous perspectives in curriculum.

As mentioned above, there were mixed responses from students about the post-engagement after the outreach camp, and a number of students noted they would have benefited from further follow up:

I feel there was a lack of that with this particular camp. I feel like it would have benefited a lot more students if there was the follow-up of how was your experience? Not necessarily for feedback, but to — it's like a reminder, especially because a lot of us were going into or were already in the ATAR pathway, so we've been thinking about attending university. I think that would have been really important to have it in mind that, hey, look, we're still here. Thanks for attending our camp. I hope you've left with some valuable experience.

No-one contacted me after the camp. I'm not sure if they did for other people. But as far as I'm aware, there wasn't for me.

Not really. I don't think after the camp there was any — no, there was no communication after the camp until university started back up ... But I think that was during the transitional period between who was running it as well, so I think a bit of that got lost in the wires. But I think that's definitely something that — [I've] been trying to push and I think it is a good thing to push, hence I'm trying to stay in contact with a few of them and be just like, hey guys, how are you doing? Because I think that's good, checking up and being like, how are you doing, even if they don't necessarily — like even if it's, I'm going good, at least it prompts that thought process.

This aligns with student responses in relation to camp 1. Also similar to students who attended camp 1, students discussed the need for further Indigenous perspectives to be embedded in the content of the camp:

We celebrate Western perspectives on this kind of stuff ... but especially, like, Indigenous knowledge with biology and coming into the world of biotech and genetic engineering and stuff like that, I feel like Indigenous people have a massive, massive place in that area, because they know how the plants react, how things react, how stuff like that happens which can be instrumental in saving a lot of people from starving in the next hundred years or whatever. Yeah, I just wish it [the curriculum] was a bit more diverse.

It would also be very nice to see how it's been adapted and used, especially when it comes to things like hunting or in the smaller Indigenous communities; I think that would have been very interesting to cover as well, hands-on experience with.

It's been mentioned at, I guess, all the meetings that we have. It's probably been brought up, I guess, as what we can build on and how we can make it specific to Indigenous people.

Importantly, as the student notes above, there is more and more discussion within the outreach team about incorporating Indigenous perspectives into the hands-on activities, and this is also discussed by staff below.

Overall, the strengths of camp 2 emerged as being the same as camp 1: the connections students make with each other and with industry representatives, the hands-on activities, the student ambassadors leading the camps, and the cultural aspects of the camp. For some students the camp had a powerful impact on their pathway post-school:

It literally changed my life.

I was actually really stuck on doing TAFE and just doing FIFO work ... because of the stereotypes that I brought up before ... I'm not going to university because no-one else in my family has done it in my Indigenous side of the family, and I had sort of the idea, earn money straightaway and all the rest of it. But after the camp, it was like, well, I probably have the capability to do it, so I want to challenge myself.

The two statements above powerfully demonstrate the ways the camp can be a transformative experience for students. The second quote highlights the way the student reconceptualised herself “as an Indigenous person who can attend university” (Harwood et al., 2013, n.p).

Themes in case study 2 staff interview data

Staff perspectives on success factors of camp 2: What works

Three non-Indigenous staff who have worked on the program were interviewed about the camp. Staff discussed a number of success factors of the camp that are detailed below in two themes:

- connections
 - peer-to-peer
 - ambassador-to-student
- student ambassadors (who are often alumni of the program).

Like the students in both camp 1 and camp 2, staff discussed the peer-to-peer connections as being one of the most significant success factors of the camp:

The camp is about camaraderie. It is about brotherhood, sisterhood. It is about connecting and joining in a safe, culturally appropriate kind of environment for students to come and explore without any pressure whatsoever.

At the end of the week, they're firm friends; they have built some really outstanding and strong relationships.

The fact that these networks kind of existed organically between the students for that need—that communal need or that kind of cluster need that students actually have—to see that happen organically is really rewarding.

I think honestly the relationships they build ... That's when the richness can really grow ... That idea that there's support in numbers and in like-mindedness and not feeling like you're alone, I think that's important.

Staff noted that many of these connections between the students occur after the camp via social media:

They create bonds, yeah, they do, but it's what happens nowadays — it's Facebook stuff; it's Instagram things.

It is the networking, the Facebook groups afterwards, the What's App groups afterwards, those bonds are probably the most important thing.

Connections between students and ambassadors working on the camps were also highlighted as important:

That bonding that happens over the course of the week in the cultural space, but also the leadership that's shown to young students attending that nothing is beyond their reach ... So, talking to those other students, talking to those role models, the student ambassadors and mentors, they realised that they can go to uni. They realised that the university is connected to culture and they can succeed there. There is support.

The student ambassadors who are current Indigenous university students are a key component of the camp and they are often alumni of the program:

Depending on availability, that's not always possible, so sometimes we may have of the four or five house [mentors], we might have three who are alumni and two who are not but are studying in the [discipline-specific] space at university.

They share their story as they get to know [the ambassadors/mentors] through the week, and it's like, if they can do it, I can do it too. They've come from where I've come from so I can do it too, and they understand. The students who have become [ambassadors/mentors] also have really good insight into the services and support that's available to them at the different universities and between university networks as well. We find that selecting the ambassadors is probably the most crucial part of the camp, because they're the ones that really connect to the students. They facilitate, and there's always a lead ambassador as well. They are the glue because they are the ones who are facilitating the development of those relationships and team building and all that sort of stuff that occurs over the week.

Staff also noted the importance of ambassadors/mentors being Indigenous university students:

So, two years ago we had 100 per cent [of ambassadors who identified as Indigenous]. The leader of the gang of mentors was a past participant and every single one of the mentors was a First Nations person and they were in charge. They were in charge of steering, planning, motivating, the entire gamut of responsibilities was devolved to them ... that was when I felt really good because I felt that it's far more beneficial for the students to meet someone who they possibly identify with.

Staff perspectives on ways to improve and strengthen camp 2

Staff discussed a number of ways to improve the camp further and these are detailed below in five themes:

- more evaluation – better data gathering/better implementation of feedback
- better post-engagement/follow up with students
- more Indigenous perspectives in curriculum
- more clarity on what “success” means in the program
- rethinking the types of students targeted.

Like the staff working on camp 1, staff noted that there was a lack of data tracking students who attended the camp and their pathways to university after the camp, and that the evaluation of the program was limited:

It's pretty superficial, partly because of the way that our team works within the university and within our context is that once it's done, we don't have a really — I don't think we've instituted really great systems to get deeper better stats. It's right, next thing, let's move on.

I don't know if anyone has ever really done any data collection. I know that there is anecdotal stuff and there's a little bit here and a little bit there and they could probably give basic statistics ... There's probably a spreadsheet or two.

This is something we were trying to get on the database, is flagging them at participation in the outreach program so that then they can be captured upon enrolment as being flagged as having participated in however different number of outreach activities.

While a post-survey is conducted with students, staff are unsure how effective it is:

The stats that we do keep are more typical event management stuff, like, on Monday you did this event, did you like it or not like it? Yes. If no, why? That sort of stuff, so, to be honest, not very good.

But we don't make the time to do that, because that's not what we do. We're the boots-on-the-ground type of people, I guess.

This highlights the importance of developing resources for staff to assist them in further evaluating their programs.

Also similar to camp 1, staff noted the importance of post-camp engagement with students and suggested ways to increase it:

Not just finding out where they are and scholarships, but actually following up and being able to support them if they need, identifying where the gaps are. If there are students that are really keen on going into, whether it's engineering or science or anything at university, and then life gets in the way, things happen and they withdraw or they drop out at first year or they don't quite make it into university. If we had more of a finger on the pulse and were able to see, okay, where are the gaps? How can we address those gaps?

Even if we could have follow-up activities or do some road trips. I mean, it's all budget. This is pie-in-the-sky stuff, but this is all budget dependent and resource dependent. But even if we could do road trips to go out and re-engage with the cohorts to run workshops afterwards. Or now, through COVID, we are using Zoom a lot more. That gives us some scope to perhaps reconnect at various intervals with the alumni of the camp. Bring everyone together via Zoom and run some study skills workshops or that sort of thing. I'd love to be able to see us do that, but again, it's resourcing and it's people's time availability and that sort of thing as well.

The need for further Indigenous perspectives in the curriculum was also discussed by staff:

I think that a better way to do it would be to foster some more of that, well, this is from a cultural and historical perspective ... I think the bushfire stuff at the moment is a perfect example of that, trying to rely on traditional owners' ways of working, managing bushfires, or managing the bush burning would be a better way to do things. So, from a top level that's one of the things that I think we try to focus on. We did do a little bit of that last year.

We are hoping that this year and going forward to have more Indigenous content ... looking at Dark Emu, for example, some of the concepts and designs that Bruce Pascoe talks about through that book. That's something that we want to draw into the camp, to have Indigenous perspectives in addition to Western.

Staff noted that there are differing views on what "success" means in relation to the program depending on stakeholder perspective. Sponsors often view success as students transitioning to a degree in the specific disciplinary focus of the camp, while university leadership are looking for students to transition to that specific university:

For me, it's a huge success, but not for the reasons that it was established ... So I fought a few battles there with the deans and the heads of the faculty. But eventually we saw that a student retained to [university name], retained to a degree or completing a degree is far more important than having 20 students enrol in [discipline] and drop out after six months because it's not exactly what they want to do.

But I feel that from a [disciplinary specific] point of view, the program is not successful. But in so many other ways the program is successful because it creates that network; it creates the bond for the students.

Similar to camp 1 findings, this highlights the disjunction between widening participation and marketing agendas, and the mismatch between outreach staff perspectives, the expectations of university leadership and the sponsors of the camp:

For me, that's a really difficult part ... a lot of the funders and a lot of people who view the program or are interested in the program are really interested in your kind of conversions to bums-on-seats for the university and obviously their kind of selfish recruiting needs to meet KPIs [key performance indicators]. I don't like that, and I feel that that is a, it's possibly one of the weaknesses of the program ... it doesn't deliver what people expect it to deliver. So, the funders who pay a lot of money to the central body that actually runs this, they probably need a bit of re-education as to the responsibility that they have.

What we have to do is we really try to keep the integrity of the program as to what it was, exposing students to university. We try to disassociate a KPI or a transition to remove some of that pressure on students, families and communities.

In contrast to camp 1 findings, one staff member suggested it could be important to rethink the types of students targeted to attend the camp, to ensure students from regional and remote locations are given the opportunity to attend; also that coordination with other universities is required:

I feel that we're not really reaching the kind of student that is sitting in a small town of a population of 300 or 400 people who's never had access to a university or not thought about doing university because their local school, their local high school, doesn't. So, I felt that we were targeting — largely at one stage we would be getting students from private schools from the metro area, and I felt that we needed to kind of expand that a little bit. It was good and it was fantastic, because we had to start somewhere and sourcing a support through our local schools is far easier than it is in the far-flung regions. But I really, I still believe that we have — part of the resources should really be going to those students from the Tiwi Islands or from the Torres Straits, or kind of where no-one else goes or very few people go, rather than — I would often go to some of the high schools in the area and I'd be pulling in while two other university cars were pulling out.

Another staff member noted that selection processes should be broadened:

Let's just accept kids on how they've been going and how their teachers rate them as good workers and good humans. I think that's probably a better way that the uni can work, and I think that it is starting to do that a little bit ... taking kids in who have the potential and who are willing to have a go ... but let them have the opportunity to slowly build the skills they need within the university context.

This aligns with Bennett et al. (2015), who highlight that careful consideration is needed in relation to “the possibility of participant selection bias and the impact this may have on program effects”. Similarly, in a different context, Macgregor et al. (2015) note that students were nominated to participate in an Indigenous Youth Sports Program if they “showed positive attitudes towards learning at school” (Macgregor et al., 2015, p. 94), which may indicate

participant selection bias and may exclude other students who would benefit (perhaps more so) from the program.

Overall, the strengths of the camp noted by staff aligned with those of students (connections and ambassadors). Staff also advocated the need for further evaluation and data collection, improving post-engagement with students after the camp, further Indigenous perspectives in the camp curriculum, more clarity and agreement of what “success” means, and reconsidering student targeting and selection processes. The next section focuses on the perspectives of five caregivers/parents of Indigenous students who participated in an outreach camp.

Caregiver/parent interviews

Participant characteristics

Five Aboriginal and/or Torres Strait Islander students recommended a caregiver who was willing to be interviewed for the Fellowship. These caregivers’ children had participated in at least one outreach camp. Following their outreach camp experiences, the caregivers’ children had enrolled in various universities across Australia or were currently considering options for future enrolment. Two of the caregivers were working within the education sector and provided responses from both a caregiver and educator perspective.

Themes in caregiver/parent interview data

Importance of outreach camps

All of the caregivers emphasised the importance of outreach camps and the positive experiences their children had at their respective camps. The caregivers interviewed also expressed that this type of outreach activity was not available to them when they attended high school:

We had our traditional university open day things, but nothing like a camp like that, particularly for Indigenous kids.

This was back in the 80s and 90s, so it was a different era. There were things out there, but it wasn’t widely advertised as much as what it is today because back then, when there was opportunities that come up, families just hear about it and then the corporations, they’re supposed to tell everybody else, but they don’t.

I had nothing like that at school ... I’ll be plain and simple — we’re dumb, we’re dumb. That was it. So, you’ll get all the smart ones in the smart classes. Like I said, we didn’t have no opportunity to get — like, even if I wanted tutoring now, like they was going to organise [for my daughter] and stuff like that, we couldn’t afford it. You know what I mean? Back in those days, 20 bucks an hour was, or 15 bucks an hour was, heaps. No, we just couldn’t ... my parents probably could of, if they — if I wanted to. But I just, I didn’t want to because I — it was pretty hard in those days.

The caregivers explained that any outreach programs that were available during their schooling were minimal or not advertised or promoted well to eligible students who might have been interested in pursuing further education:

Prior to [me] going to uni, I didn’t even know they existed. So, I didn’t know — I don’t think it was ... that was a long time ago. I don’t blame anyone for that, I just think we’ve come a long way since then.

[Compared] to what kids can get these days with education and study and all that, it’s good and gives them that opportunity.

One caregiver further highlighted the recency of outreach camps in Australia and explained that these opportunities were not available even when their older children were transitioning

from high school to the workforce or considering further studies. The caregivers spoke about the improvements in outreach program availability since their own or their older children's high schooling years and emphasised the importance of these opportunities for Indigenous students:

His sisters both sort of took part in more, like, work experience, but there wasn't really anything offered to them like [my son] had. Yeah. No opportunities like that at all.

Two caregivers explained that their own experiences with limited educational opportunities motivated them to strongly encourage their children to participate in these types of opportunities:

The short answer is no, I didn't have an experience like this. That's why we feel blessed that [my son] has had that opportunity.

I was a year 10 dropout and not well educated, and so that's why I was a big pusher for her to be more educated. Yeah, because you need an education.

I just saw all the opportunities that were made available [to my child] that I was never exposed to or had never been given and I just went — no...they're going to have a go; they're going to have that chance.

Coming from smaller country towns, you don't get a lot of opportunities like that really. Especially if you're not well educated or come from a well-to-do family. You kind of — the system fails you a bit, I find. You've either got to be at the top of the rung or the bottom of the rung. If you're in the middle, there you seem to get forgotten about. At the top you make the school look good, and if you're at the bottom they want to make you better so that they can say, well I've done something for you. If you're in the middle then you just sort of go through without any problems; they don't have to worry about you.

Another caregiver highlighted that it is crucial to have these types of opportunities available to help Indigenous students become vital changemakers for the future:

I think it's really important that we do the things that you do to ensure that these kids have access to equality for education or opportunities for education, particularly in the tertiary sector. Because we can't — as an Indigenous parent, we can't afford for these generations of kids not to go through and be educated and be changemakers in whatever field they're in. Trust me, I'm not coming from a higher moral ground here. I'm not saying that. I'm talking about equality.

Caregiver perspectives on success factors of outreach camps: What works

Caregivers/parents discussed a number of success factors for outreach camps that are detailed below in themes:

- increased confidence and independence
- increased cultural understanding and pride
- connections: peers, student mentors and staff.

All of the caregivers emphasised that a significant aspect of the outreach camp was the increased confidence and independence their children gained from the experience:

She just got confidence. In year 11 she lost a bit of that confidence and she just got a lot of that back by going to that camp up there and she found herself.

When she went on that camp it put a bit more burn back into her to think, well, I am good enough to go to uni; I don't have to listen to what this teacher has said, that I'm not good enough.

It really showed her that you're your own person, you can improve yourself and you can — don't listen to, listen, but you don't have to think because someone else says something that that's going to be the way it is.

This was particularly important for students who had previously lost confidence in themselves and their academic abilities. Caregivers described how being part of the outreach camp reignited their children's confidence and aspirations for further studies:

[My daughter gained] a bit of confidence in herself. She was only 17 or whatever then, when she went. But she grew in herself, anyway. No, the course was great.

I just think socially it just gave him a bit of an eye opener around where he could be moving forward outside his comfort zone.

Caregivers explained that the outreach camps gave their children an opportunity to engage with their culture and gain a strong sense of pride surrounding their identity. One caregiver proudly spoke about the opportunity their child had to deliver a Welcome to Country. This experience was described as being pivotal in giving their child a strong sense of cultural pride and responsibility:

That's where he gave the welcome and got to speak in the Nyungar language. He was just beside himself. He just thought that was the best thing ever. And just, I don't know, it just — you could tell it gave him a real sense of pride. Yeah, just totally different, I think. It just set him up. It was just — yeah, it was almost [like turning] a corner, I guess. Having that responsibility and ownership of something.

Another caregiver highlighted that their child now knows more about their Aboriginal culture than they do and that their child knows about other opportunities available to them and their generation:

She learnt a lot when she was up there about her culture and all that as well. Yeah, I think they did very well. She knows a lot more about her culture than I do because of the different ages and everything ... and all as well, which is really good.

Most of the caregivers spoke enthusiastically about the opportunities their children had to form new connections with other students that attended the outreach camps. Some caregivers also spoke about their child being able to blend their previous peer connections from high school with these new connections formed at the outreach camps:

I think those sorts of things are very important because that social aspect that was offered at that point allows kids to be more genuine in their interactions. Not just with each other but also with the people who are running those camps. I just found, to be honest, [my son] spoke as positively about that as he did about the sports science day and getting involved with that crew and doing those activities and stuff. So, that's just him.

She's got friends from wherever they come from. From parts of Adelaide and Darwin, um, and even Queensland. I think there was a couple of people from Queensland. So, it was good.

Caregivers emphasised the importance of their children being able to form connections with like-minded peers. One caregiver emphasised the importance of maintaining these connections as a vital support base for them during their university studies:

He still has contact with a few of the people that he went to the camp with and he still has contact with a number of the supervisors or the support workers or whatever, the leaders. The fact that that was only a week and he's still making contact with probably four or five people out of that group is pretty good, really. He uses them in that support basis. The kids are — they're similar to him in where they're at and what they're doing.

The caregivers explained that their children were able to use social media platforms to maintain a strong connection with these peers since finishing the camp and during their university studies:

He got on really well with everyone and he's made friends; he's got them all on whatever is, Facebook or whatever other things that he's got.

She's made a lot of connections and that through people. I think she still — well, I know she still does have connections with a few of them now ... yeah, well with social media they do all that.

Most of the caregivers spoke about the important connections their children also formed with the outreach camp program facilitators and the positive impact that had on their children's study choices. One caregiver described the lengths one program facilitator went to for their child to be able to participate in the outreach camp:

I think once he got there and he met a few people he did really click with a few of the facilitators and [that] did spark his interest.

We couldn't come down, but one of the leaders literally drove him to the railway station to put him on the railway, put him on the train. Yeah, it was that — those are the one percenters that we talk about that make all the difference. Those things—that's when he comes home and he tells a story like that—it just shows that level of care that can go missing at times but has a great impact. It just showed, to him, it showed that the university cared about him as a person.

This caregiver explained that this level of support demonstrated to their child that the university cared about them as a person and, ultimately, resulted in their child only being interested in that particular university. Similarly, another caregiver spoke about the impact that meeting and connecting with the program facilitator had on their child's interest in pursuing engineering as a study and career option:

Because he had that relationship with [the program facilitator], even when he finished and walked away from engineering, he was still part of that program. He does the robotics with [the program facilitator]. Because I know that he went to the engineering camp last year, he did a speech at the dinner for the 10-year anniversary.

Him and [the program facilitator] still keep in contact. They did that robotic thing when they were getting these volunteers and whenever [my son] can give them a hand in certain things in that, he'll go and do it. They still have a good relationship.

Most of the program facilitators mentioned by the caregivers had maintained connections and support towards the children following their outreach camp experience, and throughout their studies:

If it wasn't for him [the program facilitator], that was always checking in with him and emailing and — he's just been brilliant. He used to keep me in the emails as well, at the beginning. He kept [my son] going and checked up on him all the time and invited him to come back. He's the one that's, I think, made it easier for [my son] to keep in touch.

I think [the program facilitator] asked him back to talk to some peers, to the younger ones coming up ... They're still in touch quite a lot, so, which is really good.

But if [my daughter] contacted them, I know that they'll be open arms anyway.

I wouldn't even hesitate if she said, dad, I want to go back there and study, because I know she's got people there to support her and stuff like that.

Caregivers emphasised the importance of this continued support in helping their child make decisions about their future studies and career options, and in continuing to provide

opportunities for them after the camp. Some caregivers explained that their children had returned to the outreach camp as student mentors and continued to support the program facilitator in other avenues due to the close connection they had formed during the camp.

Some caregivers spoke about their child having the opportunity to meet university lecturers and connect with industry networks and Indigenous centre staff.

One caregiver emphasised how important their child's connections with the Indigenous centre staff were, in encouraging their child to enrol in that particular university. This caregiver also commented that the level of support the unit staff have provided to their child during COVID-19 has been instrumental in their child's success throughout this year:

I think the other thing that has been a key component of that, and that support for him, would be touching base with the [Indigenous centre]. Again, those relationships he developed with those people who were there in that short—it was only a week, not even a week—a short period of time have really set him up for this first semester of difficulty that you've all been through, that we're going through with online learning. None of these kids will ever experience anything like it again, we pray. I know as someone who went through university, I never went through anything like this.

One caregiver explained that this support resulted in their child staying at university rather than leaving. Another caregiver explained that the difference in Indigenous centre support and information between two universities was the key deciding factor for the child's university choice:

This other girl ... she had everything, bang, bang, bang, all set up for him and he's come and that's good; computer science is a strong field in another uni, so that's when he jumped ship [changed universities].

The people who were leaders there are able to give him advice around decisions that he's — particularly, with that decision to change courses, I think he sought a couple of people out to have a conversation around what they thought he was doing, what gives him input into his decision around that. As we said to him, we'll support him regardless of what he does ... We came from that emotional component — if you're not happy, if you're not loving going to [uni], and you can't see that career path there now, it's not going to be there in four years' time. So, you're better off to make the change now to something that you want to do. So, you can put your whole heart and mind into it. But he did certainly seek a couple of them out.

Caregiver perspectives on areas for improvement and strengthening of camps

Caregivers/parents discussed a number of areas in which outreach programs could be strengthened:

- university skills sessions
- outreach camp timing
- more mentorship and networking.

Caregivers discussed how outreach camps could better prepare students for the transition into university studies. One caregiver explained that their child initially struggled with learning the correct format for a university assignment, as this was never taught to her:

[It] took her a little while to get the right formatting of the assignments ... Yeah, whereas if she already had that when she was in high school, then she wouldn't have been behind the eight ball to start with ... because people that are going to the outreach program are ones that, I suppose, they're the ones that want a bit more help or a bit more guidance.

Oh, yes, the biggest challenge is, she was never taught the format of doing an assignment properly. Apparently, there's a proper format to do an assignment. I don't know but I'm not well educated. But she tells me there's a proper format and she was never ever shown it or taught it. Whereas her cousin, the one I was talking about, he did his schooling through [distance] education and he said that they were actually given—which he never told us until after the fact—a print out on the actual way of doing an assignment. Yeah, so, it's just the lack of being prepared for doing assignments a proper way.

This caregiver emphasised that this is something that could be included in the outreach camps to help students start their university studies successfully.

Some of the caregivers spoke about the timing of outreach camps and the importance of capturing students' attention and engagement at an optimum time. One caregiver explained that their child's outreach camp was held late in their senior year and this did not provide enough time for them to process the information and make a decision about their future studies:

One is the timing, and I don't think you've got any control over that. If you hold these things too far out for those kids who are going to straight into uni, you're going to lose the impact of what you're trying to do. But if you hold them too far close, then you're running into a whole range of problems with end-of-year exams. Not just schoolies, but people like to have downtime and do holidays after they're finished. Not to mention that these kids have been busting their gut for 13 years. They need some downtime when they finish, even while the other kids in school are going. I know that [my son] was just totally spent emotionally from his exams.

Similarly, another caregiver described the impact of holding outreach camps too early or too late during students' senior year. This caregiver explained that holding programs too early loses momentum for students if connections are not maintained, but holding the programs later resulted in their child's camp conflicting with their high school assignments. However, this caregiver also acknowledged that this is difficult to control and the competing priorities also provided their child with an opportunity to learn about time management:

There was a clash with something. Whether it was an assessment or — it wasn't exams, but it was some assessments he had due.

[He said], I've got these assessments due, and I said, well, you need to make sure you get them done prior to going or you're on top of them. I think he actually took some work with him and did some work while he was down there anyway. For him, it was okay. He was able to manage it. He was able to know — the fact he knew further enough out that this camp was coming that he was able to plan around it. I think, as I said to you, that's why I don't think timing is really that big a deal.

Another caregiver suggested outreach camps be held earlier than year 10 in students' education. This aligns with Gore et al. (2017a), who point out that, for some students, commencing careers education and outreach activities in the later secondary years may be too late. This caregiver felt year 10 was too late for students to use the information provided during camps to choose appropriate subjects in their final years:

I think the thing is that they do it in year 10. I think they should do it earlier, because one of the things I encouraged the girls at the school that I was at was that you do one ATAR subject.

Because it's a high expectation when it comes to ATAR and the understanding of certain elements. It could be that the kids like to be exposed—they're in high school, they're interested in engineering—so maybe taking them back every year and just keep them through that program process and saying, okay, so next time you guys come—even if

it's at the start or at the end one week apart—because you've got your school holidays ... you've got a whole big eight-week break, and saying, right, we're going to start this and then we're going to think of these things while you're away.

Getting them ready over time and then you're getting the same kids over the time to come back with the connection with the school that they've come from to keep that program.

Another caregiver also suggested that outreach camps and programs should engage students earlier and over a longer period of time to facilitate stronger connections with peers, the program, and university:

Then that way, you're getting them for the longevity, because bringing them in year 10, they're having to do — they're not equipped to do their ATAR subjects, and then when you do an engineering course and they have to do all these — it's overwhelming.

I think it was — the timing was okay; it was just waiting for him, you know. That might not be everybody's — that might have just been [my son].

Some caregivers expressed a desire for more mentorship and networking opportunities within the outreach camps their child participated in. This seemed particularly important to caregivers of children who had travelled long distances or interstate to attend the camp. These caregivers emphasised that it would have been beneficial for their child to have a mentor or “buddy” from their community to give them extra support:

If there's somebody in their own community who's there together and then they can just buddy off of each other and utilise social media. So, that group of kids, you've got your own page where — hey, look, this is what I've done, or, look, this is that and whatever. And then they try and encourage them with their mentors back in their community.

Yeah, it would have been great if maybe they could have all gone up and — yeah, I don't know. Gone with somebody from, like, a mentor system, you know? Buddy up with somebody that had been there a couple of years ago or something.

Other caregivers emphasised that improving the networking opportunities with industry would have helped their child gain more from the outreach camp experience. One caregiver explained that many of the students that attended her child's outreach camp did not know how to present themselves or interact with the industry networks and, therefore, were not able to take full advantage of this opportunity:

[The camp should] teach them how to approach people, how to talk to people, what the expectations [are].

This caregiver suggested including some networking tips for students before the industry representatives are introduced:

So, when they sit down at the meetings with the businessman, having those interviews with the businessman or they're talking about — having them with a nice buttoned-up shirt with black pants, just to make them feel that they're the same. Because when you're standing back and talking to a bunch of kids that look gangster in a suit, you've only got them a quarter of the way because they already feel as though they're not up to the same level.

Another caregiver explained that their child was given an opportunity to work in the engineering industry after the camp but was not given enough information about this cadetship to make a more informed decision. This caregiver suggested that industry networks and universities provide a better overview of the different avenues and options available to students through these opportunities:

We've had a meeting with [one company], and they offered him a cadetship, and he refused it—I nearly fainted—but it was mainly because they didn't actually express what options he would have. They just talked about construction and the civil engineering side, which put him off again. So, I think, yeah, he could have benefited more, if they had have talked about what options there were, other than just that one type of engineering.

Overall, caregiver/parent interview findings were similar to staff and student findings, emphasising the important connections students who participate in outreach camps experience with their peers, student ambassadors/mentors and staff. The caregivers/parents also highlighted the increased confidence, cultural understanding and pride they perceived that their child experienced as a result of the outreach program. Importantly, the timing of outreach camps was discussed as an area for improvement, along with more hands-on activities, university skills sessions, and more mentorship and networking opportunities.

Survey findings: Quantitative findings

The online survey was completed by 98 university students from 18 universities across Australia (see Appendix 3). Participants were on average 24.73 years old (SD=8.62, 18-63), female (68%), and of Australian Aboriginal descent (88%). A third of the participants lived in inner-regional areas (34%) prior to commencing universities studies, and almost half of the participants moved from regional/remote areas to a major city area (49%) to commence their university studies. The majority of participants reported spending less than 30 minutes (27%) or 30 minutes to an hour (37%) travelling to their university campus.

Table 4. Participant demographic characteristics

GENDER	N=98	
	N	%
Female	67	68
Male	30	31
Nonbinary	1	1
ETHNICITY	N	%
Australian Aboriginal	86	88
Torres Strait Islander	5	5
Australian Aboriginal and Torres Strait Islander	7	7
AREA LIVED PRIOR TO UNIVERSITY STUDIES	N	%
Major city area	24	25
Inner-regional area	33	34
Outer-regional area	19	19
Remote area	20	20
Other	2	2
LIVING CIRCUMSTANCE DUE TO STUDIES	N	%
Moved from regional/remote area to major city area	48	49
Moved from major city area to regional/remote area	3	3
Moved from one regional/remote area to another	8	8
Moved from one major city area to another	11	11
Did not move – course is fully online	7	7
Did not move – university campus close proximity	21	22
TRAVEL TIME TO UNIVERSITY CAMPUS	N	%
<30 minutes	26	27
30 minutes to 1 hour	36	37
1 hour to 1.5 hours	10	10
1.5 hours to 2 hours	4	4
2 hours to 2.5 hours	1	1
2.5 hours to 3 hours	1	1
>3 hours or more	0	0
I live on-campus	11	11
I do not access my campus	9	9

Course/degree details

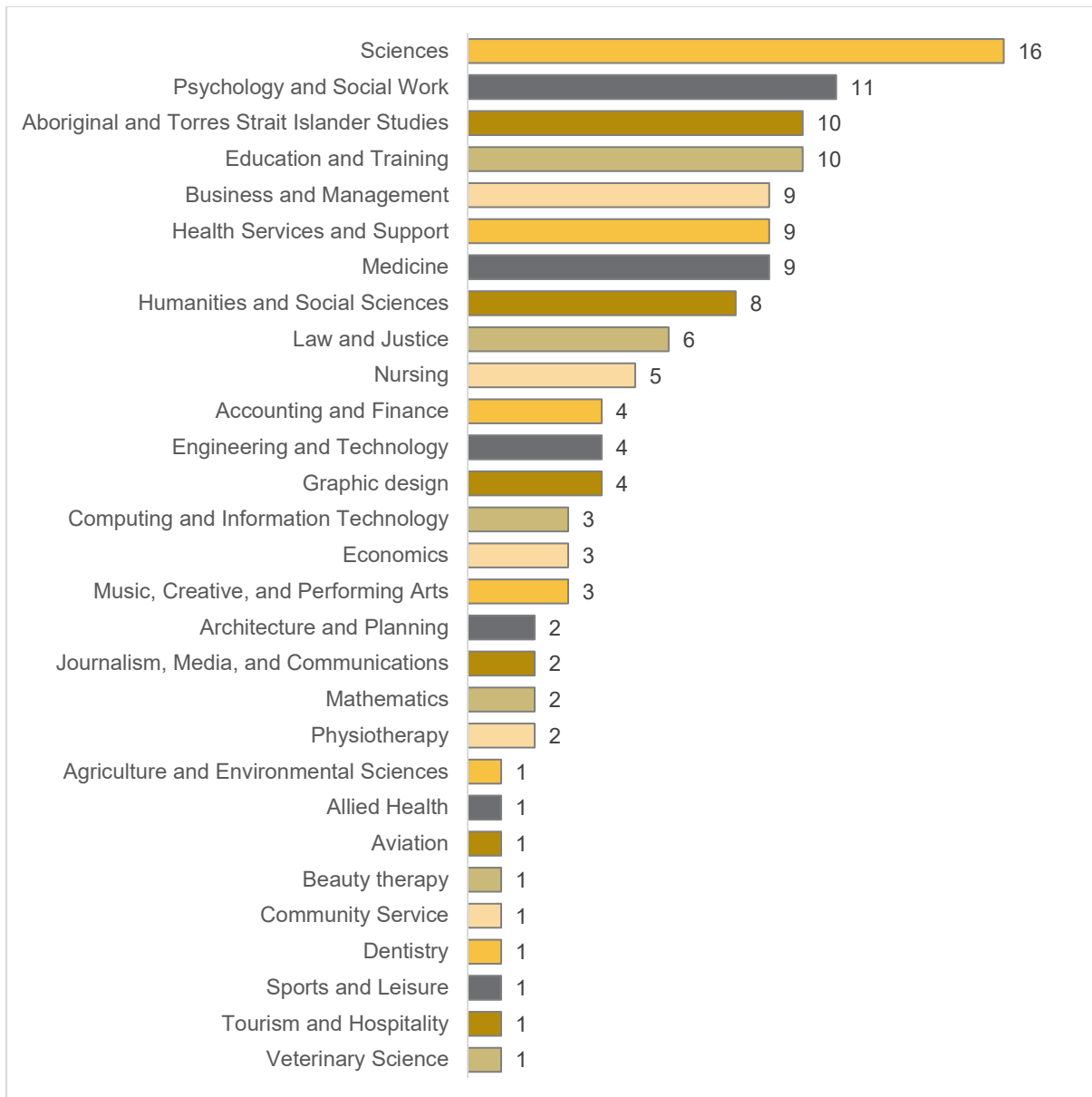
As is detailed in Table 5, the participants were predominantly completing one course/degree (93%), at a Bachelor level (82%); however, 15 participants were completing postgraduate level courses/degrees including Master (5, 5%) and Doctorate (6, 6%). Most participants were focusing on one major field of study (79%) and reported a broad range of majors/fields of study, including: sciences (16, 17%); psychology and social work (11, 11%); education and training (10, 10%); and Aboriginal and Torres Strait Islander studies (10, 10%) (see Figure 4). Participants were also predominantly studying full-time (84, 86%), with two-thirds usually

studying on-campus (61, 62%), and more than half being in either their first (28, 29%) or third (21, 22%) year of study.

Table 5. Participants' current course and degree details

NUMBER OF COURSES/DEGREES CURRENTLY STUDYING	N=98	
	N	%
One course/degree	91	93
Two courses/degrees	6	6
Three courses/degrees	1	1
LEVEL OF COURSE/DEGREE (MULTIPLE SELECTED) ^a	N	%
Certificate	4	4
Diploma	7	7
Bachelor degree	80	82
Postgraduate certificate	3	3
Postgraduate diploma	1	1
Master	5	5
Doctorate	6	6
NUMBER OF FIELDS OF STUDY	N	%
1 field/major	77	79
2 fields/majors	14	14
3 fields/majors	4	4
4 fields/majors	1	1
5 fields/majors	2	2
CURRENT STUDY LOAD	N	%
Full-time	84	86
Part-time	14	14
CURRENT STUDY FORMAT ^b	N	%
On-campus	61	62
Online	21	22
Combined – on-campus and online	16	16
TIME STUDYING CURRENT COURSE/DEGREE	N	%
Commencing next Semester	1	1
<1 year	28	29
1 year	17	17
2 years	19	19
3 years	21	22
4 years	9	9
5 years	2	2
6 years or more	1	1

^aMultiple options selected, ^bBased on usual study format prior to COVID-19 restrictions.



^aMultiple options selected

Figure 4. Participants' fields of study (n)^a

Education experience

For more than half of the participants, their current course/degree was their first experience of studying at university (52, 53%); however, a large portion of participants had previously started a degree they did not finish (24, 25%), or had completed a different course/degree (16, 17%) (see Table 6). More than half of the participants' caregivers had completed high school (56, 57%), but two-thirds of the participants' caregivers had not previously attended university (62, 63%). Despite the relatively low number of caregivers attending university, two-thirds of participants reported that they were not the First-in-Family to attend university (61, 62%), indicating that they had either a sibling, aunty/uncle, or cousin who had previously attended university (see Figure 5).

Table 6. Participants' prior experience with university

PREVIOUS EXPERIENCE WITH UNIVERSITY ^a	N	%
First time studying at university	52	53
Completed an enabling course/preparation program	9	9
Started but did not complete a course/degree	24	25
Started course/degree and switched universities	1	1
Completed a different course/degree	16	17

^aMultiple options selected

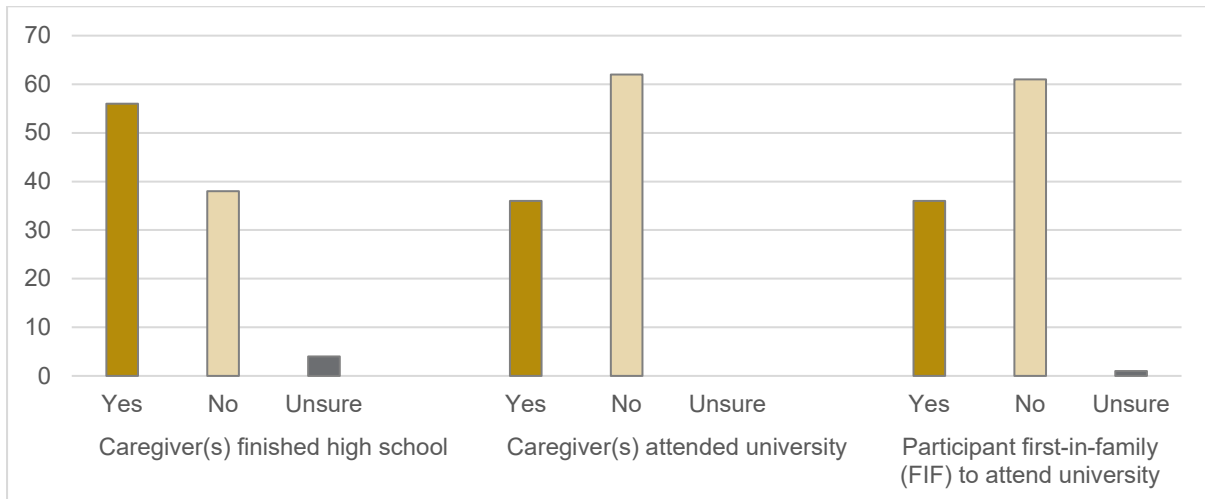


Figure 5. Participants' family educational experience

Outreach program participation

As shown in Table 7, the majority of participants attended an outreach program in years 10 (48, 49%), 11 (49, 40%), or 12 (56, 57%) of high school and most reported attending one-day events on-campus (59, 60%). Otherwise participation was evenly split across camps, school visits, and/or career fairs. Most participants had attended one (39, 40%) or two (38, 39%) outreach programs, with the most popular combinations being camps and one-day events (14, 14%), or school visits and career fairs (11, 11%).

Table 7. Outreach programs participation by number, type and timing

OUTREACH PROGRAMS PARTICIPATION BY NUMBER	N	%
One outreach program	39	40
Two outreach programs	38	39
Three outreach programs	18	18
Four outreach programs	3	3
OUTREACH PROGRAM PARTICIPATION BY TYPE^a	N	%
Outreach camp	41	42
School visit from outreach staff	44	45
Career fair	37	38
One day event on university campus	59	60
OUTREACH PROGRAM PARTICIPATION COMBINED	N	%
Camp, school visit, career fair, and one-day event	3	3
Camp, school visit, and career fair	2	2
Camp, school visit, and one-day event	4	4
Camp, career fair, and one-day event	6	6
School visit, career fair, and one-day event	6	6
Camp and school visit	6	6
Camp and career fair	2	2
Camp and one-day event	14	14
School visit and career fair	3	3
School visit and one-day event	11	11
Career fair and one-day event	2	2
Camp only	4	4
School visit only	9	9
Career fair only	13	14
One-day event only	13	14
OUTREACH PROGRAM(S) PARTICIPATION BY TIMING^a	N	%
Primary school (Years 1-6)	12	12
Year 7	8	8
Year 8	14	14
Year 9	18	18
Year 10	48	49
Year 11	49	50
Year 12	56	57

^aMultiple options selected

Outreach program experiences

Participants reported strong positive experiences with outreach programs and staff. In particular, there was a significant association between participants' positive responses to their overall outreach program experiences and: i) attendance at an outreach camp $\chi^2(3, N=98) = 14.02, p=.003$; and ii) having an outreach staff member visit their school $\chi^2(3, N=98) = 9.87, p=.020$. Having a positive experience with outreach program staff was also significantly associated with: i) participants attending outreach camps $\chi^2(3, N=98) = 9.59, p=.022$; ii) receiving a school visit $\chi^2(3, N=98) = 11.49, p=.009$; or iii) attending a one-day event on-campus $\chi^2(3, N=98) = 9.28, p=.026$.

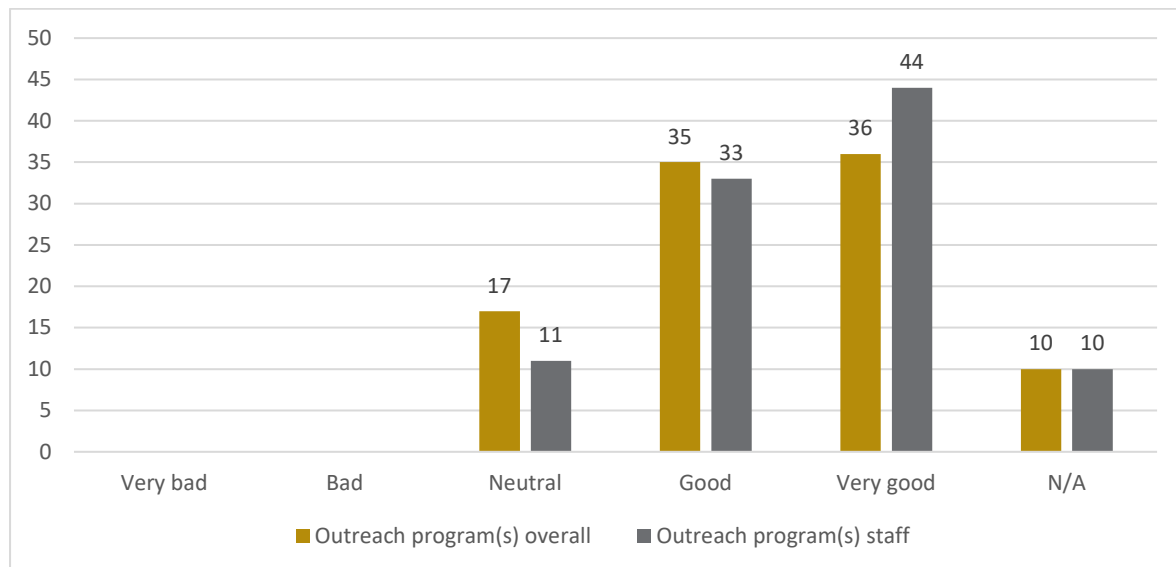


Figure 6. Overall experience with outreach programs and staff

In general, participants responded positively to statements relating to outreach program content and its impact on their feelings towards university (see Figure 7). However, participants were less likely to agree that program staff maintained contact and support towards them after the program (particularly school visits); or that the programs increased their understanding of Aboriginal and/or Torres Strait Islander culture.

As mentioned above, participating in an outreach camp on-campus, or having an outreach staff member visit their school, were significantly associated with positive responses. Students responded that, for both outreach camps and school visits, the program content was engaging and relevant to their needs. These two programs were also significantly associated with responses indicating that outreach staff maintained contact and support after the program and that the program helped them feel that university would be achievable for them:

Engaging:

Outreach camps: $\chi^2(3, N=98) = 15.35, p=.002$

School visits: $\chi^2(3, N=98) = 8.35, p=.039$

Relevant to their needs:

Outreach camps: $\chi^2(5, N=98) = 15.85, p=.007$

School visits: $\chi^2(5, N=98) = 12.47, p=.029$.

Maintained contact and support:

Outreach camps $\chi^2(5, N=98) = 14.08, p=.015$

School visits $\chi^2(5, N=98) = 12.72, p=.026$

University achievable for them:

Outreach camps $\chi^2(4, N=98) = 13.76, p=.008$

School visits $\chi^2(4, N=98) = 11.02, p=.026$.

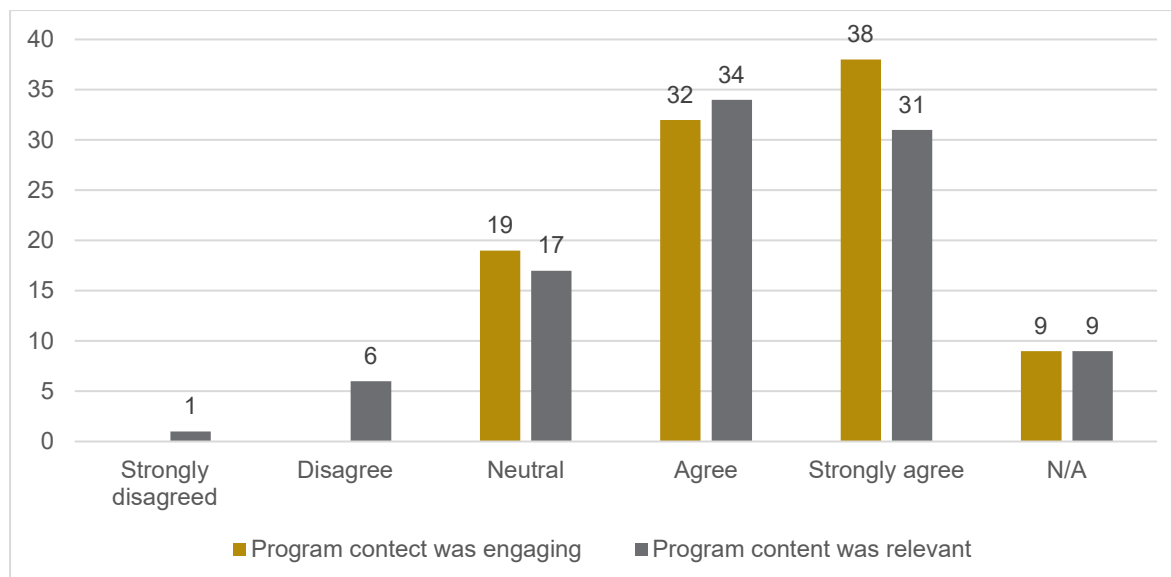


Figure 7. Program content was engaging and relevant to participants' needs

Attending an outreach camp on-campus was also significantly associated with participants responding that the program: made them feel better about themselves, $\chi^2(4, N=98) = 11.87, p=.018$; increased their confidence in starting university, $\chi^2(4, N=98) = 12.67, p=.013$; increased their sense of belonging at university, $\chi^2(5, N=98) = 14.86, p=.011$; and helped them form connections with others at university, $\chi^2(5, N=98) = 19.09, p=.002$. Having an outreach staff member visit their school was also significantly associated with participants' responses as to whether the program increased their understanding of Aboriginal and/or Torres Strait Islander culture, $\chi^2(5, N=98) = 11.73, p=.039$.

Despite being highly rated among participants, career fairs and one-day events on-campus were not significantly associated with responses to any statements relating to the program content, support from staff, or impacts. There were also no programs significantly associated with participants feeling that the program demonstrated the value of university. However, this is likely due to participants already having high aspirations and motivation to attend university prior to completing outreach programs.

University influences

Participants indicated that their decisions to enrol in university and their course/degree of choice were heavily influenced by a number of key factors and people, both internal and external to their university. The two most influential factors relating to participants' courses/degrees and university choices were, i) the course content and, ii) the university's Indigenous centre/unit environment, which included its services and support staff. The least influential factors relating to participants' course/degree and university choices were, i) their university friends, ii) the student union/guild services, iii) the university's library environment and, iv) the university's teaching staff.

The most influential factors that were external to the participants' course/degree and university were, their family, accessibility of reliable internet connections for study, access to a computer and travel time to their university campus. The least influential people and factors external to

the participants' course/degree and university were, child-care/day-care issues, parenting/caring/domestic responsibilities, and participants' involvement in sports (see Appendix 3 for further information).

Outreach camp key success factors

Participants were asked to provide a written response to the open-ended question, "What was the most useful aspect of the outreach camp?". Participants' responses included 10 key areas that largely related to the level of support and connections, information, and increased sense of self and identity they gained from their experience.

Table 8. "Most useful" aspect of outreach camps

SUPPORT AND CONNECTIONS	
Mentors	<p>"Advice given by older university students and educators about prioritising education and educational tools."</p> <p>"Engaging with current university students helped me to develop a more articulate expectation of university."</p> <p>"From my experience to have somebody come into school and talk about opportunities at university for Indigenous students is extremely beneficial and encourages people to pursue their dreams. I think more information on university-specific institutes like the William Cooper Institute at Monash would help people understand that there is a lot of support from experienced Indigenous students that have been in their shoes about to start or pursuing university."</p> <p>"Going to the university and having a tour and hearing stories from students."</p> <p>"Hearing other people's experiences and how they got where they are now."</p> <p>"Hearing stories from the students, staff who explained the experiences and challenges they faced coming to university and how they got through them."</p> <p>"I liked being able to speak with other students and people in general who had similar backgrounds to me and being able to share my experiences."</p>
Connections	<p>"Connecting with other people who are interested in studying at university as well, being able to maintain those connections for support."</p> <p>"Connecting with other young Aboriginal students, meeting strong leaders and role models, understand the importance of university, gave me confidence in myself."</p> <p>"Connection — culture and getting to know people."</p> <p>"Connections made with other Indigenous students interested in the same field of study."</p> <p>"Developing a support network that I can always call upon for anything I need, in my past present and in my future career."</p> <p>"Finding other students who were in the same position I was."</p> <p>"Feeling like I'd be supported at uni."</p> <p>"Getting connected to the community at UWA."</p>

SUPPORT AND CONNECTIONS

“Having a sense of community.”

“It helped me adjust to living in the city and meet people before commencing at uni.”

“It was nice to visit the uni and see what happens around campus. Likewise, the programs allowed me to meet other students with similar interests that would later be attending the same courses as I.”

“Making new friend with students from all different areas and learning about their Indigenous background.”

“Meeting friends that I've actually taken into uni.”

“Meeting lecturers.”

“Meeting other students interested in university.”

“Networking.”

“Plenty of contacts if I need help.”

“Seeing different courses / pathways offered in the STEM industry and meeting some students and staff at QUT (some of who I still keep in contact with).”

“Sense of community and belonging.”

“Taking a step out of my comfort zone meeting new like-minded people whilst being exposed to various career opportunities.”

“The connections formed between [myself and] other students, student ambassadors and facilitators.”

“The connections I made.”

“The friendships made with like-minded students with similar backgrounds, the information to enter university, the information about university.”

Support

“The support.”

“The support offered.”

“Support.”

“The assistance with schoolwork and making a decision to do further education.”

“The staff helped me with the uni application process and also going to the uni on visits helped me feel less scared by the university itself.”

“Ongoing support.”

INFORMATION

Experiencing university life

“Attending university.”

“Being exposed to the various degrees and campus life. I had never considered university prior to [doing] outreach programs.”

SUPPORT AND CONNECTIONS

	<p>“Getting an idea of what a university looks like and feels like.”</p> <p>“Feeling less intimidated by the size of the campus and how many people were there.”</p> <p>“Going to the university and having a tour and hearing stories from students.”</p> <p>“Helping understand what university is like.”</p> <p>“Introduced me to concept of university studies.”</p> <p>“Just getting to experience a big university after being from a small town.”</p> <p>“Provided genuine, clear and realistic insights of the community and workload experienced in uni.”</p> <p>“We got a taste of what university looks like.”</p> <p>“The current student feedback about how uni was, not the sugar-coated version.”</p>
Learning about study and career options	<p>“Career opportunity.”</p> <p>“Hearing from students who are studying your possible degree at university and exploring the opportunities available.”</p> <p>“Just showed me the opportunities available at university.”</p> <p>“Opportunities the degree could provide for me in the future.”</p> <p>“What courses were available.”</p>
Information provided	<p>“Information on different universities and support we could access once there.”</p> <p>“Information provided.”</p> <p>“How helpful and knowledgeable they were about university.”</p> <p>“Learning.”</p> <p>“The information workshops provided at the University of Sydney summer program was most useful for me. I felt like they gave a great introduction to the course I was interested in; it was interactive and engaging and was facilitated by the staff.”</p>
Pathways to university	<p>“Learning the many different pathways to university.”</p> <p>“Learning about alternative entry pathways into uni.”</p> <p>“Setting out pathways for my education.”</p> <p>“That it provided options for entry pathways in anything I wanted to do. I did not know about any of these pathways so it was very informing and helpful.”</p> <p>“They helped me discover what paths I could take to get to uni and what I wanted to study.”</p>

SUPPORT AND CONNECTIONS	
	“They showed the potential programs and organisations that could help me through my course and career to better my chances.”
INCREASED SENSE OF SELF AND IDENTITY	
Raising aspirations and confidence	<p>“Awareness.”</p> <p>“Encouragement that I can do it.”</p> <p>“Giving me confidence and higher self-efficacy.”</p> <p>“Help, understanding why uni is important.”</p> <p>“Helped myself to better understand the nature of university and improved my confidence.”</p> <p>“Helped with confidence building.”</p> <p>“It got me prepared for university.”</p> <p>“Made me feel like university was achievable and that I could do it.”</p> <p>“Motivating program to look towards long-term goals.”</p> <p>“That no matter what path you take, there is always a way or opportunity for you to have a go as well as the others.”</p> <p>“Showed me how valuable university is.”</p> <p>“That university was always an option, now or in the future.”</p> <p>“Learning more about myself.”</p>
New skills	<p>“Communicate with other people better.”</p> <p>“It really boosted my confidence and taught me important skills such as public speaking, interview techniques and mentoring.”</p>
Strengthened cultural connections	<p>“It allowed me to have a closer connection with my culture. Living in the city, while cultural events and connections are strong, being able to see and participate in cultural practices has tightened my bond with my culture. These programs also help me connect with others in my community and builds strong relationships.”</p> <p>“Learning all the different information about the Aboriginal community and the knowledge on university.”</p> <p>“The connection between culture and tertiary study, the access to resources, and the increased feeling of self-worth and the importance of a connection to culture.”</p>

Areas for improvement

Two participants also provided suggestions for areas in which their outreach experiences could have been improved. One participant felt the cultural aspects of their outreach program experience could have been more substantial:

After continuing to learn more, I feel in communities where there is less Indigenous people there's less learning about your culture and more about yarning and catch-ups. I think learning more about traditions and other activities specific to my culture would've been more interesting and engaging, rather than these catch-ups, to make us organise how we can promote our culture around the school.

The other participant suggested that more detailed information on specific programs available to students would further help to encourage Indigenous people's aspirations:

To have somebody come into school and talk about opportunities at university for Indigenous students is extremely beneficial and encourages people to pursue their dreams. I think more information on university specific institutes like the William Cooper Institute at Monash would help people understand that there is a lot of support from experienced Indigenous students that have been in their shoes about to start or pursuing university.

Summary of key survey findings

The students who completed the online survey had participated in a broad range of outreach programs during their schooling. Most participants indicated that they were given the opportunity to visit a university campus prior to finishing high school by participating in either a camp, a one-day visit on-campus, or both. Most participants reported attending one or two outreach programs predominantly in their senior years of high school (years 10 to 12). While some participants attended outreach programs in primary or middle school, there was a noticeable dip in outreach program experiences in year 7. These findings highlight the gap in outreach programs available to students in primary and middle school, as well as the importance of carefully considering the program content and structure to better engage students during the one or two outreach programs they will generally experience.

The participants' overall experience with outreach programs and staff was consistently reported as "good" or "very good". These positive experiences were significantly associated with participation in outreach camps or having outreach staff visit their school. Additionally, having a positive experience with program staff was also associated with participation in a one-day on-campus event. Outreach camps and program staff visits were also significantly associated with participants reporting that the program content was engaging and relevant, that staff maintained contact and support with them following the program, and that the program increased their belief that university was achievable. Outreach camps were also significantly associated with participants feeling better about themselves and having an increased sense of confidence and belonging, as well as the ability to form strong connections with peers.

Notably, having an outreach staff member visit their school was the only outreach program that was significantly associated with participants reporting an increased understanding of Aboriginal and/or Torres Strait Islander culture. This finding is unexpected, but potentially indicates that programs conducted within students' hometowns and familiar environments can better facilitate cultural learning and connections with students' specific cultures.

The participants reported that they were predominantly completing their first university degree or experiencing their first formal interaction with university studies. However, most students also reported that they were not the first person in their family to do so, indicating that a close relative had previously or was currently completing university studies. This is also reflected in the participants' responses that their families were the greatest influence in their decision to undertake university studies, outside of university specific factors. Other external factors also highly influential to this decision were the accessibility of their university campus and of the resources required to complete their studies, such as reliable internet connection and computers. This is an understandable consideration and concern, as most of the participants reported having to move from a regional or remote area to complete their university studies.

With this in mind, it would be beneficial for outreach camps to provide information and guidance on the support available to assist students with their move and transition into university life.

The key university-related factors that strongly influenced participants' decisions to enrol in a particular university were the course content and that university's Indigenous centre/unit. This was also reflected in the participants' open-ended responses relating to the "best aspect" of their outreach program experiences. These open-ended responses strongly indicated that some of the most important elements of the outreach program were the level of information provided on course/career options, pathways into university and what to expect with university life. Further, the participants also indicated that another key component to the success of outreach programs was the level of support and connections they were able to make during their experience. The participants reported feeling highly supported by the program staff during the outreach program and their university studies. The participants also indicated that they highly valued the opportunity to form strong connections with their peers and student mentors who attended the outreach program with them. Their open-ended responses also strongly emphasised that outreach programs successfully increased the participants' sense of self and identity by raising their aspirations and confidence, allowing them to develop new skills, and providing them with a deeper sense of cultural connection.

Discussion

Many universities run outreach camps for Indigenous students (see Appendix 1 for full details of programs) and the number of programs has significantly grown since the implementation of HEPPP funding in 2010 (Naylor et al., 2013). The previous section discussed the findings that emerged from the Fellowship based on data derived from qualitative and quantitative sources. In order to identify “what works” in outreach programs for Indigenous students, from a range of perspectives, interviews were undertaken with Indigenous university students who participated in outreach camps while at school, staff who coordinate outreach programs, and caregivers of Indigenous students who participated in outreach programs. Two case studies were included to explore examples of camps coordinated by universities as well as an online student survey. As a result, the Fellowship obtained rich findings. This section brings together these findings with the relevant literature to explore the overarching themes in the data.

Building confidence and self-worth, and demystifying university

The findings of this study indicate that outreach camps play an important role in building student confidence and demystifying university for Indigenous students. Survey data from Indigenous students indicated strong positive experiences with outreach programs in relation to increasing their confidence in starting university and increasing their sense of belonging at university. Similarly, qualitative comments from student interviews highlighted the ways outreach programs assisted them in transitioning to university. As one student stated: “It made that transition to uni a lot smoother”. Students also emphasised the impact of outreach camps on their feelings of self-worth and providing them with clearer goals to attend university. For example, students made these comments in interviews: “It gave me a much larger self-worth, clearer actions, clearer understanding of how to go to uni, as you’d know, it’s daunting” and, “The camp made me dream bigger and made me understand that opportunities are for everyone”. Similarly, caregivers/parents explained: “She just got confidence” and, “When she went on that camp it put a bit more burn back into her to think, ‘well, I am good enough to go to uni’”.

Staff also discussed in interviews the positive impact of on-campus experiences that outreach camps provide:

We can go out to schools and we can talk to students, but actually physically getting them on-campus is where ... you can see when they spark, when their interest sort of changes. You can see them engaged. I think [the camps] make a difference in that respect.

Another staff member also clearly articulated this perspective:

It is so overwhelming for any student stepping foot on-campus for the first time, because they’re mini-cities. No-one really knows where to go. No-one really knows how to navigate. But if you can have that experience around dispelling the myth around how overwhelming it is and be with your peers and have Aboriginal mentors who are already at university, living at university, who you have commonality with, around shared experiences, that also is a barrier breaker, around, okay, I’m here, wow, I didn’t think it was like this. It’s the experiential factor.

More clarity on what “success” means

The findings from interviews with staff highlighted that there were differing views on what “success” means in relation to outreach programs for Indigenous students. Some viewed success as students making a decision to go to university, although other perspectives on success included students being more motivated at school, or even students deciding that university was not the pathway they wanted to take. Staff also pointed out that

sponsors/funders of programs often view success as students transitioning to a degree in the specific disciplinary focus, while university leadership can view success as students transitioning to the specific university where the camp is held. The finding that more clarity is needed on what “success” means in this context informed the development of recommendation 3 in this report which recommends that university leadership and outreach staff should work together to ensure clear, agreed-upon “measures for success”. Harrison and Wallis (2017b, p. 81) highlight this is a “confusion of successes” and a tension where “outreach is conflated with recruitment and universities seek easy wins ... this is an added challenge to practitioners: is it success against institutional or national targets that matters?”. This tension between marketing agendas versus widening participation is also noted in the literature (Zacharias & Mitchell, 2000). Important work focused on what success means in relation to Indigenous students has been undertaken by Indigenous scholars (Andersen et al., 2008; DiGregorio et al., 2000; Martin et al., 2017). In Canada, Pigeon (2008, p. 340) argues it is important to broaden notions of “success” and that, for many Aboriginal nations in Canada, success is “connected to empowerment of self and community, decolonisation and self-determination”. Staff comments in interviews demonstrate that what “success” means and what “counts” as success in relation to outreach programs is complex. As Naylor (2015, p. 9) notes:

In order to establish whether a program is successful, it is obviously important for you to have some idea of what “counts” as success, or how well the program should perform. This can be a very complicated and program-dependent process.

Further discussion between key stakeholders would be useful to clarify the objectives, the aims of the programs themselves and the evaluation questions being asked (Naylor, 2015, p. 9).

Pathways, outreach activities and tracking students

The qualitative data from students demonstrates the non-linear and diverse pathways students take post-school. For example, some students take a gap year between school and university, transition through an enabling program, or enrol in one university and then change to another. Staff noted in interviews that this means it is difficult to track students who attended an outreach camp in terms of their pathways after the camp. This is also discussed by Zacharias and Mitchell (2020), who point out that a more comprehensive means of tracking engagement with outreach programs in order to enable more effective nationwide monitoring and analysis is needed. This informed the development of recommendation 8 that recommends that the Department of Education, Skills and Employment (DESE) should build on the work of the Widening Participation Longitudinal Study (WPLS) so that data on the engagement of students in outreach activities is included, and link this to administrative data on the transition of students into university.

Students often participate in multiple outreach programs, as reflected by both the qualitative and quantitative data. For example, the survey revealed that students mostly participated in one or two programs, with on-campus camps and one-day events being the most commonly attended. In interviews students similarly discussed the multiple programs they had participated in, mostly during high school. This makes demonstrating causality between attending an outreach camp and the impact on their transition to university almost impossible to prove. This finding informed the development of recommendation 7 in this report which recommends that Australian Government Department of Education, Skills and Employment (DESE) test the feasibility of including evaluation of Indigenous outreach programs as a specific part of the current investment in the Student Equity in Higher Education Evaluation Framework and the Widening Participation Longitudinal Study (WPLS).

This is supported by the literature on evaluation in relation to equity programs (James et al., 2008; Naylor et al., 2013; Reed & Hurd, 2016). Harrison and Waller (ACIL Allen Consulting, 2017, pp. 83-84) highlight that:

The lives of all young people are “messy” as they are buffeted by myriad of experiences and influences — some planned, but many accidental. The beliefs and expectations of their families, schools and communities ... gender, ethnicity will play a role as well other social factors ... Given this complexity of environment and decision-making, the idea of an outreach activity having a predictable causal outcome on a young person’s decisions appears thoroughly misguided.

However, as the HEPPP evaluation final report states, “although establishing causal links for interventions in education policy is difficult, evidence where available often shows increased aspirations and in some cases increased applications and enrolments to higher education” (ACIL Allen Consulting, 2017, p. 58). Certainly, there are multiple, often inter-related factors that influence students’ decisions about post-school options, and outreach programs can play a role. Cuthill and Jansen (2013, p. 8) agree and note that decision-making regarding attending university is “a complex interaction between multiple factors including economic costs, English language proficiency, cultural or religious barriers, structural barriers and other inter-related variables such as support networks, information provision, and understanding and aspiration”.

Timing

Findings from interviews and the survey indicated that students mostly participated in the outreach camps in years 10, 11 or 12. This is supported by Bennett et al. (2015), who note that outreach initiatives are often focused on students in the later stages of schooling. The students noted they were already aspiring to go to university, and the outreach programs then helped solidify their plans for university study. Certainly, “aspiration” is a contested term (Cupitt et al., 2016) and, in relation to Indigenous students, there is a need to “depart from a stance of ‘low aspiration’ and consider an approach that ... is premised on the idea of recognising aspiration” (Harwood et al., 2015, p. 217). Students stated in interviews: “I always knew I wanted to go to uni, I just didn’t know what for”, “I already had in mind that I was definitely going to go do university”, “I was interested in uni from when I was little”, “I already had that idea that I did want to go to uni and further my study, but I also had those doubts because I’m the first in my extended family as well, not just immediate, to go to university”. This also aligns with the findings of Gore et al. (2017a, p. 1398), who argue that outreach activities for Indigenous students need to move towards a stronger focus on “nurturing” rather than “raising” aspirations, as “it is not just about making higher education possible, but rather, making it a place where Indigenous young people will want to pursue and attain their occupational aspirations” (Gore et al., 2017b, p. 181). Caregivers/parents noted in interviews that the timing of outreach programs could be improved. For example, if outreach camps are late in their senior year then it may not provide enough time for students to process the information and make a decision about their future studies. This links with Raciti and Dale’s (2019) work on the timing of outreach programs and the need for earlier exposure to widening participation activities (also see Gore et al., 2017a). This finding informed the development of recommendation 5 in this report which recommends that University outreach staff should further develop stage- and age-appropriate outreach programs for Indigenous students in primary school and early years of high school. Certainly outreach camps in later years of high school are important for affirming and confirming student decisions about university. Coordinating camps for younger students is not without its challenges and such camps are likely to require a different format (e.g., fewer days) and caregiver participation due to the age and maturity of the students.

Connections: Peers and ambassadors

The formation of strong peer-to-peer connections/friendships at outreach camps was highlighted by students, staff and caregivers/parents in both the interviews and the qualitative comments in the student survey. Many of the students continued these connections within the campus environment when they attended university. As one student noted during an interview:

“It was really beneficial for me just having the community of people and knowing that when I come to uni there’s going to be people who I know”. This is similar to Cuthill and Jansen’s (2013, p. 16) findings regarding the UQ Young Achievers program; they highlighted that the program strengthened students “social connections and support through meeting like-minded peers and their student mentors”. Drummond et al. (2012, p. 39) also report that, in relation to a mentoring program, “higher education aspirations can be shaped by friendships and in-group identification”.

These connections are particularly important for Indigenous students because, as some students pointed out in interviews, university can be a very difficult, colonial space for Indigenous students to navigate. Students stated: “University is such a white place” and “You’re going to walk into a very, very colonial space, and it’s going to be hard”. This is supported by Paige et al. (2016, p. vi), who report that universities can be “unfamiliar, unsupportive and challenging” places for Indigenous students. Similarly, Bunda et al. (2012, pp. 949-950) explain:

Universities, like other whitestream institutions, have not been hospitable places [and] ... have long been implicated in colonising logics, including the competitive–individualistic ethos of neo-liberal times ... [Prospective students] rightly question whether invitations to walk across the equity bridge encode an expectation to become whitestream: to disappear into merely another marker of “diversity” in an engulfing institution that does not care to recognise the distinctive sovereignty of Indigenous First Peoples.

The connections made between Indigenous school students and Indigenous university student ambassadors were also deemed very important by students, both in the survey and in the interviews with students, staff and caregivers/parents. As one student noted in an interview, student ambassadors can answer “those really hard-hitting cultural questions: What’s it like to be an Aboriginal person at a very old white institution?”. Similarly, a student who had attended an outreach program and who is now an ambassador viewed their role as “to impart on them [school students] about being an Aboriginal person in a very white and traditional institution”. This aligns with Bennett et al. (2015, p. 41) who point out that student mentoring “stands out as an important aspect of effective outreach initiatives ... where university students build relationships with high school students and assist them to develop their awareness of higher education opportunities and pathways”. This finding informed the development of recommendation 6 in this report that recommends Universities ensure there is Indigenous leadership of outreach programs for Indigenous students so that students have the opportunity to make these important connections with ambassadors and staff. The interviews with students also demonstrate that, in some cases, students who participated in the programs are now ambassadors/mentors themselves. This is supported by the HEPPP evaluation final report, which also found that in many cases mentors are students who were involved in outreach activities while they were at school (2017, p. 54). As Cupitt et al. (2015, p. 23) emphasise, student ambassadors are certainly “in a unique position to bridge gaps between institutions and individuals within those institutions”.

The importance of cultural aspects and Indigenous perspectives in outreach programs

Cultural aspects, such as yarning circles about cultural identity, are often included in outreach camps for Indigenous students. These sessions were highlighted by students, staff and caregivers/parents as particularly important components that can play a role in strengthening a student’s own cultural connections. As one survey participant noted: “It allowed me to have a closer connection with my culture. Living in the city, while cultural events and connections are strong, being able to see and participate in cultural practices has tightened my bond with my culture”. Students also emphasised during interviews the importance of having the opportunity to connect with their own cultural identities on the camp, particularly as some students did not have many opportunities to do this in other contexts, such as at school.

Similarly, caregivers/parents pointed out in interviews that outreach camps gave their children an opportunity to engage with their culture more and gain a stronger sense of pride surrounding their identity. Cultural aspects were also highlighted as ones that could be strengthened in outreach programs to allow more opportunities for students to reflect on and connect with their own cultural identities:

I think more cultural stuff would be good, and then to balance it in with all the science-y stuff. Because university is such a white place, I guess, to make them [students] feel more comfortable and at home, we should balance that a bit more.

Another student stated: “That would probably be great if we could do more, just because I feel like we never really get the chance to speak about that”. This echoes the words of Bodkin-Andrews et al. (2017, p. 26), who emphasise that “researchers and teachers need to recognise the importance of cultural identity as a positive driver for schooling motivation and future aspirations” and that “a positive sense of cultural identity” is “the strongest predictor of many of the motivational and future aspirational outcomes” (2017, p. 28).

In addition, the importance of embedding Indigenous perspectives in the “hands-on” activities included in outreach camps was noted by students and staff during interviews as an aspect that could be further strengthened. For example, students stated: “We’re at an Indigenous camp; we’re all Indigenous; we should be talking about Indigenous perspectives within our degrees” and “We celebrate Western perspectives on this kind of stuff ... I just wish it [the curriculum] was a bit more diverse”. This finding informed the development of recommendation 4 in this report that recommends that outreach staff should work collaboratively with Indigenous centres and Indigenous academic staff within universities to ensure Indigenous perspectives are strongly embedded in the “hands-on” activities on outreach camps. As Fredericks et al. (2015, p. 1) point out, learning content in university contexts often “reflects very little, if any, Indigenous perspectives”. Paige et al. (2016, p. 26) argue that “culturally responsive pedagogy” is needed to support Indigenous students’ learning outcomes and provide examples of engaging with Indigenous knowledges and cultural contexts in teaching and learning. Certainly, the important work of embedding Indigenous perspectives in curricula is being undertaken at a number of universities across Australia (Jackson et al., 2013; Williamson & Dalal, 2015). Students and staff indicated in interviews that the embedding of Indigenous perspectives could be strengthened in the curriculum of some outreach programs. Staff pointed out in interviews that some outreach camps do include discipline-relevant Indigenous perspectives in the “hands-on” activities but, for the case studies included in this report (camps 1 and 2), it is an aspect highlighted in the findings that needs improving. However, in relation to including Indigenous perspectives in curricula, Page et al. (2017, p. 47) emphasise that “sustainable curriculum change requires dedication and resources ... human resources will be required, including experienced Indigenous academics, who can lead the change”.

Strengthening post-camp engagement

The importance of maintaining post-camp engagement with students was emphasised in interviews with students and staff; it emerged that this was an aspect of outreach camps that needs improving generally. Strong post-camp engagement is listed by Gale et al. (2010, p. 6) in their Design and Evaluation Matrix for Outreach as one of the key strategies for effective outreach. They outline that effective outreach programs are long-term, sustained and require “an approach that requires the development of ongoing relationships between young people and those in a position to offer them ongoing guidance which relates to their situation and capacities” (Gale et al., 2010, p. 6). Student perspectives on post-camp engagement were mixed. Some students noted in interviews in relation to camp 2 that one particular outreach staff member had maintained contact with them. Another student who had participated in multiple programs noted in an interview that one program they had attended did provide regular follow up with emails, online catch-ups and alumni events. The survey found that

students who had participated in outreach programs were “less likely to agree” that program staff did maintain contact and support towards them after the program. This finding informed the development of recommendation 2 in this report which recommends that outreach staff should continue to engage post-camp with Indigenous students who participate in outreach activities so that they are supported beyond undertaking the camp, through the whole-of-student-life cycle, from school, into university and beyond. Strengthening post-camp engagement is particularly important to support students further in their pathways to university and could also support evaluation by creating opportunities for feedback from students regarding “what worked” and what could be improved in outreach programs.

The need for more resources for evaluation

Findings from interviews with staff also demonstrated the lack of evaluation currently being undertaken in outreach programs for Indigenous students. Staff noted there had been limited evaluation of camps 1 and 2: “It’s pretty superficial, I don’t think we’ve instituted really great systems”, “I know that there is anecdotal stuff ... there’s probably a spreadsheet or two”, “We do surveys but we don’t do it really well. We haven’t done that well at all in the last couple of years, or I don’t think we’ve done it well, period”. This highlights the need for further training and resources for outreach staff to be able to evaluate their programs. This finding informed the development of recommendation 1 in this report which highlights that University leadership should ensure more training opportunities for outreach staff to provide them with the necessary skills to be able to evaluate their programs. As discussed in the background section of this report, there are a number of resources that have been developed to assist in the evaluation of higher education equity initiatives (Bennett et al., 2015; Naylor, 2015; Wilkins & de Vries, 2014). However, specific resources for Indigenous programs are sparse. Smith et al.’s (2018) “conceptual model of potential performance parameters to strengthen Indigenous higher education monitoring and evaluation in Australia” includes potential performance parameters and four interrelated spheres of students, families and communities, schools and other organisations, and universities, but is not specifically aimed at outreach practitioners. Certainly, there is a need for further resources to build the evaluation skills of outreach staff as evaluation “is important now, more than ever” (Smith et al., 2018, p. 5). However, it is important to point out that “studies conducted on outreach programs have been broadly criticised on the grounds that they lack independence and are often carried out within the program, by program staff” (Cuthill & Jansen, 2013, p. 11). This could be remedied by further collaboration between practitioners and researchers, so that independent staff are involved in the evaluation process and/or that funding is specifically allocated to allow for program evaluation to be undertaken by external evaluators. However, outreach practitioners are increasingly being asked by university leadership and sponsors to demonstrate the impact of the programs they run. Therefore, further training and resources for outreach staff who design and deliver outreach programs for Indigenous students would be beneficial in strengthening evaluation approaches and would assist outreach practitioners in demonstrating what works well and why.

Conclusion

Outreach programs for Indigenous school students that involve bringing students to university campuses have been identified as a critical strategy to facilitate successful pathways for Indigenous students into higher education (Brady, 2012; Kinnane et al., 2014). Despite this, prior to this Fellowship, the evidence for the effectiveness of outreach initiatives was very limited. The Fellowship was a timely and valuable way of addressing this gap by building a stronger evidence base about effective outreach strategies for Indigenous students through a high-impact research project with key stakeholder networks. The Fellowship is valuable to the sector as it has developed knowledge of “what works” in terms of outreach camp initiatives for Indigenous students and serves to inform and strengthen programs to improve the transition of Indigenous students into higher education.

As noted in the literature about evaluating equity initiatives, it is particularly difficult to demonstrate a link between participation in outreach programs and subsequent university enrolment. A more comprehensive means of tracking engagement with outreach programs in order to enable more effective nationwide monitoring and analysis is needed (Zacharias & Mitchell, 2020). Importantly, the Department of Education, Skills and Employment (DESE) has commissioned The University of Queensland to develop a Student Equity in Higher Education Evaluation Framework to be completed in 2021 for implementation from 2022. The Evaluation Framework will provide a framework for overarching program level evaluation and also for individual initiative improvement.

Findings from interviews with students, staff and caregivers/parents are particularly valuable, as they provide rich stories and narratives about the experiences of students, their caregivers/parents and staff in relation to outreach programs. This material highlights both the strengths and the areas for improvement within outreach programs for Indigenous students. As Bunda reinforces (cited in Smith et al., 2018, p. 38):

The concept of narrative and storytelling is much more a part of an Indigenous practice than the hard data in numbers, in the statistics. That's not to say I dismiss that statistical information. But it's the narrative, it's the story that needs to be important in terms of thinking about the work we're doing in Indigenous higher education.

Further, Smith et al. (2018, p. 37) found, there is “broad consensus among both Indigenous scholars and policymakers that both quantitative and qualitative methodologies as evidence are important, and that each type of approach, and the respective information it reaps, can complement the other”. The survey data complements the interview data by providing both quantitative and qualitative data about the important role of outreach programs in increasing Indigenous students’ belief that university study is achievable, increasing their sense of identity, confidence, and belonging, as well as providing important opportunities to form strong connections with like-minded peers.

Strategies to strengthen outreach programs for Indigenous students

Suggested strategies for improving and strengthening outreach camps for Indigenous students have been developed from findings from interviews with outreach staff, university students who participated in outreach programs, caregivers/parents, and findings from the survey with Indigenous university students who participated in outreach activities and in consultation with the Indigenous advisory group.

Strategies for outreach staff to improve camps

- Ensure post-program engagement with students is strong. This continues the connection with students to strengthen a focus on the “whole-of-student-life-cycle”

approach, supporting the student through school, into university, and beyond. This could be achieved with contacting students via phone, social media, text message or email to engage with students after the camp, and possibly bringing the group together for reunion events, via online or face-to-face, to maintain the relationship and connection.

- Work collaboratively with Indigenous academic staff across the university to ensure Indigenous perspectives are embedded within the “hands-on” activities included in the camp, being mindful to recognise and be aware of the additional workload. The issue of hidden workloads of Indigenous academic staff is discussed by Page and Asmar (2008).
- Discuss with university leadership and sponsors/funders of the program, the multiple understandings of what “success” means in relation to the camp from different stakeholder perspectives.
- Draw on available resources to develop a stronger approach to evaluation of programs; for example, see Naylor (2015) and Wilkins and de Vries (2014). A part of this Fellowship is developing further resources specifically for outreach practitioners working with Indigenous students.

Strategies for university leadership/funders to improve camps

- Ensure that outreach staff working on the program discuss and identify what “success” means in relation to the camp to develop agreed-upon understandings of “success”.
- Provide opportunities for outreach staff to undertake training and skill development to be able to further evaluate programs.

The findings of this Fellowship demonstrate that outreach camps play an important role in encouraging Indigenous students to transition into university. One student described the camp as “a stepping stone that just pushed me further into wanting to go to university”. The power of stepping onto a university campus to participate in a program cannot be underestimated. As one staff member stated:

There's a lot of power in being on-campus for a student, particularly if they're from somewhere regional. There's a power for them; there's an encouragement and aspiration sort of thing for them to come and step foot on camp. I think that's a huge thing for them, to see what the campus looks like, to walk the campus, to go into a lecture hall, to sit in the tutorial style [room]. I think the exposure is a huge thing, and I also think the fact that they get to meet other Indigenous students that are like them [is huge].

This links to the findings of Harwood et al. (2013), who note the importance of Indigenous students “experiencing university campuses as spaces relevant to their lives”.

What this means in the context of a socially distanced COVID-19 context is still unclear, but outreach staff have worked innovatively to move face-to-face outreach camps to an online delivery format. These shifts range from developing online activities, such as Q&A sessions and new websites for prospective Indigenous students, to whole camps re-developed and delivered entirely online or in blended approaches (with students participating either face-to-face or online). With these shifts, it is important to ensure online initiatives achieve effective engagement with students. Can the important connections usually made between students at outreach camps be achieved in this new online space? Much can be learned from other contexts. Fredericks et al. (2015., n.p) found that a flexible, online version of an enabling program for Indigenous students did, in fact, help “to address geographical and social isolation to improve successful outcomes for Indigenous Australians”. However, there is a need for greater understanding of how effective this shift to online is in relation to outreach camps for Indigenous students. Further resources and training for outreach staff and/or funding

specifically to evaluate and provide evidence of the effectiveness of online outreach programs is required.

The need for more training and resources to evaluate programs has been voiced by outreach staff, with one staff member stating: “I don't have any training in this”. Further collaboration between researchers and practitioners and additional training for outreach staff would assist to strengthen evaluation practices in outreach programs. Another staff member said:

As someone who runs these camps, having the access to someone like yourself or the research or the data, the advice that you can give, or people in your position can give, is really important. But we don't make the time to do that, because that's not what we do. We're the boots-on-the-ground type of people, I guess. So, I think more of this sort of stuff would be really, really valuable.

In phase five of the Fellowship, I am developing practical resources specifically for outreach practitioners to assist them in understanding the processes of evaluation in the context of outreach programs for Indigenous students. These include video clips with key Indigenous and non-Indigenous researchers discussing practical steps and processes for evaluating outreach programs, as well as a podcast, co-hosted with Professor Tracey Bunda, focusing on interviews with key Indigenous stakeholders about “what works” in relation to Indigenous outreach programs. Continuing to strengthen the evidence base for effective outreach camps—in the context of COVID-19 restrictions and beyond—will assist in improving and implementing stronger programs to support the transition of Indigenous students into higher education.

Ideas for future research include investigating the possible role of outreach programs for Elders/mature age/non-school leaving students, examining the benefits of being an ambassador/mentor for current Indigenous university students and exploring the importance of Indigenous data sovereignty in relation to the evaluation of outreach programs. Further consideration could also be given to the use of Indigenous research methodologies to evaluate Indigenous outreach programs. This should be completed in collaboration with Indigenous scholars.

Recommendations

The findings of this Fellowship inform eight high-level recommendations under the following two broad categories:

- Key stakeholder recommendations
- Australian Government recommendations

Key stakeholder recommendations

1. University leadership needs to ensure more training opportunities for outreach staff to provide them with the necessary skills to be able to evaluate their programs.
2. University outreach staff should continue to engage post-camp with Aboriginal and Torres Strait Islander students who participate in outreach activities so that they are supported beyond undertaking the camp, through the whole-of-student-life-cycle, from school, into university and beyond. Follow up should be offered in a diversity of media (phone, online, face-to-face).
3. University leadership and outreach staff should work together to ensure clear agreed upon “measures for success” in relation to outreach programs. This should take into consideration a range of factors, not just transition into university, but also the more subtle benefits of outreach programs; for example, the connections students made with their peers, changes in their aspirations and their expectations about university.

4. University outreach staff should work collaboratively with Indigenous centres and Indigenous academic staff within universities to ensure Indigenous perspectives are strongly embedded in the “hands-on” activities on outreach camps.
5. University outreach staff should further develop stage- and age-appropriate outreach programs for Indigenous students in primary school and early years of high school as there is growing recognition that the current major investment in outreach activities in the later secondary years may begin too late.
6. Universities should ensure there is Indigenous leadership of outreach programs for Indigenous students.

Australian Government recommendations

7. The Australian Government Department of Education, Skills and Employment (DESE) could test the feasibility of including evaluation of Indigenous outreach programs as a specific part of the current investment in the Student Equity in Higher Education Evaluation Framework and the Widening Participation Longitudinal Study (WPLS).
8. The Australian Government Department of Education, Skills and Employment (DESE) should build on the work of the Widening Participation Longitudinal Study (WPLS) so that data on the engagement of Indigenous students in outreach activities is included and linked to administrative data on the transition of Indigenous students into university.

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Appendix 1: Mapping of outreach programs for Indigenous students

Shaded rows indicate the program is a camp.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
National Indigenous Summer School Australian National University	Years 10 and 11 students	<p>Hosts/partners: Tjabal Indigenous Higher Education Centre (TIHEC), ANU Science and Engineering Colleges, and ANU Humanities, Arts and Social Science Colleges</p> <p>Camp options:</p> <ul style="list-style-type: none"> • Science, Technology, Engineering, Mathematics and Medicine (STEMM) Summer School • Humanities, Arts and Social Science (HASS) Summer School <p>Format: One week on- and off-campus</p> <p>Aims: To inform education and career aspirations and goals among Aboriginal and Torres Strait Islander students.</p> <p>Content: Students participate in hands-on activities from a range of disciplines with the theme of “Global Challenges: People, Places and Communities”. Students are mentored by expert academic staff, Indigenous university students and staff through a fun-filled program.</p>	None available.	None available.
Framework for Taste of ANU Australian National University	Year 10 students	<p>Hosts/partners: Tjabal Indigenous Higher Education Centre (TIHEC), and ANU Colleges</p> <p>Format: One day on-campus</p> <p>Aims: To introduce Aboriginal and Torres Strait Islander students to university life.</p> <p>Content: Students participate in lectures and experience a full day as an ANU student.</p>	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Future Moves: Danygamalanha Program – Strong Moves Camp Charles Sturt University	Years 9, 10, and 11 students	Format: One week on-campus Aims: To build aspirations among Aboriginal and Torres Strait Islander students for tertiary study, and increase confidence to consider higher education as an achievable option. Content: The Danygamalanha program – Strong Moves Camp, as part of CSU's Future Moves program, specifically targets Aboriginal and Torres Strait Islander students. Students engage with current CSU students, academics and mentors through a series of activities that introduce students to university life on-campus. Cultural elements are incorporated in collaboration with the Indigenous Student Centres and local Elders.	Student pre- and post-program surveys.	Strong Moves Camp: <ul style="list-style-type: none"> in 2018 seven programs were delivered with 125 students from 11 partner schools, and 388 points of contact with the students aspiration to attend university increased in 43% of students perceived likelihood to gain entry to university was increased in 35% of students 96% of participants reported being the first-in-family (FiF) to attend university. Generic Future Moves Camp: <ul style="list-style-type: none"> aspiration to attend university increased in 27% of Indigenous students perceived likelihood to gain entry to university increased in 27% of Indigenous students number of Indigenous students enrolling at CSU has increased over the past five years.
Walanga Muru Camp Aspire Macquarie University	Years 11 and 12 students	Format: Three days on-campus Aims: To provide Aboriginal and Torres Strait Islander students with knowledge and experiences to make decisions about tertiary study options post-high school. Content: Students experience cultural activities and other activities relating to a degree/area of university of their choosing. Students engage with external organisation representatives and get involved in cultural activities.	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Ngamuru Program Macquarie University	Years 7-10 students	Hosts/partners: Walanga Muru – Macquarie University Format: Ongoing school-based interactions for Aboriginal and Torres Strait Islander students Aims: To inspire students to develop cultural understanding and knowledge, aspire for tertiary education and to be proud Aboriginal and Torres Strait Islander young leaders. Content: Students develop essential skills such as resilience and self-concept. Students participate in lessons and activities that incorporate leadership skills and cultural learning that inspires the pursuit of tertiary education.	None available.	All participants strongly agreed the content was relevant to them and their school's needs. Participants agreed the program contributed to their cultural knowledge, aspirations to study, cultural pride, and sense of identity.
Birruqa Birrung (Rising Stars) Leadership Camp Macquarie University	Year 10 students	Hosts/partners: Walanga Muru – Macquarie University Format: Three days on-campus Aims: To develop Aboriginal and Torres Strait Islander leadership, nurture students' knowledge, strengths and capacity, and consider career options. Content: Students immerse themselves in university life and experience activities that develop their leadership skills, cultural knowledge and future aspirations. Students also gain access to ongoing mentoring, leadership development and resiliency training.	None available.	The camp opened new pathways into tertiary education for participants. One student stated: "[I believe] the camp has inspired me to strive to be a better leader and has provided me with the skills to do so".

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
<p>One-off presentations, advice sessions, and campus tours Macquarie University</p>	Years 10-12 students	<p>Hosts/partners: Walanga Muru – Macquarie University <u>Campus tours</u> Format: 1-3 hours on-campus Aims: To raise Aboriginal and Torres Strait Islander students' aspirations and demystify the university experience. Content: Students visit the Macquarie University campus at North Ryde and enjoy a day of engaging activities that increase knowledge about engagement services, scholarships, entry pathways, accommodation options, etc. <u>One-off presentations</u> Format: 30 mins-1.5 hours in school Content: Pathways staff visit schools to present information to students on degree options, scholarships, entry pathways, accommodation options, etc. <u>Individual advising sessions</u> Format: 30 mins-1.5 hours in school Content: Pathways staff provide one-on-one advice to Aboriginal and Torres Strait Islander students about course options, entry pathways, etc.</p>	None available.	Campus tours allowed participants to meet student mentors and academics, experience a tour of campus, and gain awareness of university life. The first campus tour (2016) had six participants from three schools. The second campus tour (2017) had six students from five schools. In 2020 four schools registered for the program but were not able to attend.
<p>National Indigenous Science Education Program (NISEP) – ConocoPhillips Macquarie University Science Experience Charles Sturt University and Macquarie University</p>	High school students	<p>Hosts/partners: Macquarie University, Curtin University, high schools, Aboriginal communities, and a number of partner organisations Format: 3-4 days on- or off-campus Aims: To develop motivation and skills of Aboriginal and Torres Strait Islander students to complete their high school studies and consider university. Content: Students participate in the ConocoPhillips Science Experience, and NISEP Indigenous youth are given the additional opportunity to train as leaders and guide groups throughout the event.</p>	Student pre- and post-program surveys.	In 2018 643 students participated in the program. The program increased 60% of participants' desire to complete year 12 and go on to higher education. The program increased 80% of participants' interest in science. 90% of participants found being a leader a good or inspiring experience. School staff indicated 80% of participants demonstrated improved motivation, enthusiasm for learning and/or teamwork. School staff indicated 70% of participants demonstrated increased concentration and/or completed school work.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
UNI-BOUND Primary School and High School Programs Southern Cross University	Primary school program: All Year 6 students; High school program: All Years 8 and 9 students	Generic outreach program that particularly focuses on Aboriginal and Torres Strait Islander students Format: On- and off-campus Aims: <ul style="list-style-type: none"> • improve access, participation and support of people who are under-represented in higher education • increase knowledge and understanding of higher education and career options • build confidence and motivation towards higher education • improve academic readiness for higher education • support teachers, families and community to assist students to reach their potential for higher education. Content: Students engage in small-group, hands-on activities and seminars, and larger group presentations by university staff. Students meet and interact with university student mentors who share their personal experiences.	Student post-program surveys (Years 7-9 and Central Schools Special Projects). Student pre- and post-program survey – qualitative and quantitative data. Post-program review and evaluations with key stakeholders including UNI-BOUND staff, university and school staff, school principals and project leaders (Central Schools Special Projects).	The UNI-BOUND program grew from 1,437 students in 2012, to 4,089 students in 2016. More than 80% of participants had: <ul style="list-style-type: none"> • increased confidence in their potential to undertake university studies • increased their conversations and curiosity in study choices • increased their knowledge about course options and university pathways.
Ooralta Youth Leadership Camps University of New England	Junior camp: Years 9 and 10 students; Senior camp: Years 11 and 12 students.	Hosts/partners: Ooralta – University of New England Camp options: <ul style="list-style-type: none"> • Senior girls • Senior boys • Junior girls • Junior boys Format: Three days on-campus Aims: To develop Aboriginal and Torres Strait Islander leadership skills, learning, culture and wellbeing. Content: Students attend sessions that provide an introduction to university life, personal development and a range of life skills, as well as health, wellbeing and Aboriginal cultural awareness and pride. Presentations, short lectures and workshops are provided by a range of consultants, academics and volunteers on leadership, values and communication, training sessions at SportUNE and PCYC Armidale, career development, and pathways to university.	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Oorala On-Campus Experience Days University of New England	Years 10-12 students	Hosts/partners: Oorala – University of New England Experience options: <ul style="list-style-type: none"> • Science and Technology • Humanities and Social Sciences • Business and Law • Health and Education • Sports Science Format: One day on-campus Aims: To provide Aboriginal and Torres Strait Islander students with career advice and pathways, promote higher education, raise students' confidence to complete a university course, and showcase teaching and learning activities at UNE. Content: Students experience university life and participate in a series of workshops and lectures. Each day covers two UNE Schools, e.g., Science and Technology, Humanities and Social Sciences, Business and Law, Health and Education, and Sports Science.	None available.	None available.
Far Out Science University of New England	Primary school program: Years 5-6 students; High school program: Years 7-9 students	Format: Two days on-campus Aims: To introduce Aboriginal and Torres Strait Islander students from regional and remote areas and low socioeconomic areas to the fun, exciting, and intriguing side of science. Content: Students engage in a range of activities that showcase the wide world of science.	None available.	None available.
"Switched on" UNE Indigenous STEM Program University of New England	Years 7-9 students	Format: One on-country experience Aims: To increase the accessibility and appeal of mathematics to Aboriginal and Torres Strait Islander students, and increase mathematics uptake in years 11 and 12 and in the number of science-based Indigenous graduates. Content: Students engage in mathematics education that embeds Indigenous cultural and technological traditions. Students engage with local Elders and UNE staff from the Rural and Environmental Science discipline in a series of workshops based around an on-country experience. Students are given information on pathways into STEM courses at university.	None available.	The pilot was attended by 38 Indigenous students in years 7-9. Participants engaged positively with mathematics by using Indigenous cultural and technological traditions as a means to explore mathematical concepts.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Indigenous Winter School University of New South Wales	Years 10-12 students	<p>Subject options:</p> <ul style="list-style-type: none"> • Built Environment (Architecture, Construction and Design) • Business • Creative Arts and Media • Education • Engineering • Indigenous Studies • Law • Medicine • Science • Social Work • Visual Art <p>Format: One week on-campus Aims: To help Aboriginal and Torres Strait Islander students identify their areas of interest and clarify subject choices, provide information on entry, and provide an opportunity to experience university. Content: Students engage in comprehensive and fun activities that introduce them to tertiary studies in the discipline area of their choice, and experience university life. Students are mentored by current UNSW Indigenous students, graduates, academics, and experts from industry.</p>	None available.	None available.
Nura Gili off- and on-campus workshops University of New South Wales	High school students	<p>Format: One day off- or on-campus Aims: To inspire Aboriginal and Torres Strait Islander students by demonstrating the link between university students' lived experiences, classroom learning, and future career and study options. Content: Students engage in workshops, activities, and university tours that provide information on future career aspirations and educational choices, build their awareness and interest in university study, introduce the design thinking process, develop problem-solving ability, and build confidence and self-determination. Students that participate in on-campus workshops have an opportunity to discover UNSW's Kensington and/or Paddington campus.</p>	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
School 2 University (S2U) Program University of Newcastle	Years 7-12 students	Hosts/partners: The Wollotuka Institute Format: Unclear Aims: To provide Aboriginal and Torres Strait Islander students with insight into university life including pathways entry. Content: Students from the catchment areas of Newcastle, Central Coast, Mid-North Coast and Western NSW engage in activities that provide insight into university, pathways of entry, as well as contributing to a strong cultural affirmation. Reference: Paige et al. (2016).	Further evaluation was expected in 2019; no results available.	The program saw a 106.9% increase in school engagement between 2008 and 2014. The program has increased regional and remote engagement since it started.
iBelieve University of Newcastle	Years 7 and 8 students	Hosts/partners: iBelieve is a subcomponent of School 2 University Format: Throughout the course of an academic year. Aims: To foster Aboriginal and Torres Strait Islander students' ambitions and thinking of their future in a culturally safe space. Content: Students participate in talking circles, interactive activities and traditional Indigenous games. Participants will be monitored and rewarded throughout the course of the program over an academic year.	Student post-program and semester survey online.	None available.
Insight Days University of Newcastle	Year 10 students	Hosts/partners: Insight Days are a subcomponent of School 2 University Format: One day on-campus Aims: To familiarise students with the Aboriginal and Torres Strait Islander Entry Program process into the university. Content: Students meet staff and students at The Wollotuka Institute and consolidate their senior subject selections to support their university pathway.	Student post-program and semester survey online.	None available.
Girls Choices and LIVE IT! for Boys University of Newcastle	Year 9 students	Hosts/partners: AIM High program Format: One week on-campus Aims: To inspire Aboriginal and Torres Strait Islander students to study maths and science subjects in years 11 and 12. Content: Students participate in activities that expose them to the range of study and career options within these subjects.	Student post-program and semester survey online.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
UAC, Yapug, and Entry Program Talks University of Newcastle	Years 11 and 12 students	<p>Hosts/partners: Wollotuka, the Family Action Centre, and staff at the Girrakool School located within the Frank Baxter Juvenile Justice Centre</p> <p>Format: 12-week in-school program</p> <p>Aims: To develop aspirations in juvenile Aboriginal and Torres Strait Islander male detainees to plan for their future beyond incarceration.</p> <p>Content: The pilot combined elements from S2U, Uni4You and Learning Unleashed. The program has now been running for 21 years. The program focuses on developing literacy and numeracy skills, and providing information on tertiary options including the Yapug Aboriginal and Torres Strait Islander Enabling Program, the Aboriginal and Torres Strait Islander Entry Program, and the University Admissions Centre admissions. The skills and networks developed throughout the program are designed to equip students with the skills needed to be successful throughout their university and professional careers.</p>	<p>Student post-program and semester survey online.</p> <p>One-on-one student interviews.</p> <p>Staff planning days at the beginning of each year to discuss student suggestions and feedback.</p>	<p>To date, 580 program participants went on to university studies. In 2018 30% of participants met entry requirements for the Yapug Enabling Program. Yapug program participants progress onto a wide variety of areas such as medicine, education, community development, and research including PhD studies.</p>
Miroma Bunbilla University of Newcastle	High school students	<p>Hosts/partners: The Wollotuka Institute and the Indigenous Health Unit within the School of Medicine and Public Health</p> <p>Format: Five days on-campus</p> <p>Aims: To give future Aboriginal and Torres Strait Islander students insight into studying medicine and develop required skills.</p> <p>Content: Students participate in problem-based and group-based learning to develop the skills that are required to undertake medical studies.</p>	<p>A formal evaluation and manuscript is currently underway.</p>	<p>The Miroma Bunbilla program supports Aboriginal and Torres Strait Islander students to transition from high school to university, to university completion. In 2018 26 prospective students attended the program. In 2020 the program is on track for 17 Aboriginal doctors to graduate.</p>

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Aboriginal Summer School for Excellence in Science and Technology (ASSETS) University of Newcastle	Year 10 students	Hosts/partners: The Wollotuka Institute and CSIRO Format: Nine days on-campus Aims: To encourage Aboriginal and Torres Strait Islander student engagement in the fields of science, and provide ongoing leadership and support to students throughout years 11 and 12. Content: Students participate in a rigorous academic strand provided by two local researchers who focus on specific fields of science and work with Indigenous science knowledge holders to embed Indigenous perspectives. Students also participate in cultural and personal development activities run by local Aboriginal and Torres Strait Islander leaders designed to help students engage with local communities and knowledge, and connect more deeply with their own cultural understandings.	None available.	In 2018 36 students participated in the program. This program is no longer available.
Wingara Mura Bunga Barrabugu (WMBB) Summer Program University of Sydney	Years 9-10 students	Camp options: <ul style="list-style-type: none"> • Architecture, Visual Arts, Design and Planning • Business and Economics • Education and Social Work • Health Science and Nursing • Humanities and Law • Medicine, Dentistry and Pharmacy • Music • Natural Science and Engineering Format: Three days on-campus Aims: To equip Aboriginal and Torres Strait Islander students with useful skills for final years of school, and explore options for university and careers. Content: Students meet current university students, experience university life and investigate a subject area of their interest. The program supports tertiary study and demystifies university.	Student pre- and post-program surveys.	<p>The program increased participants' "understanding of the powerful link between personal interests and university options" from 48% of participants prior to the program, to 74% of participants post-program.</p> <p>The program increased confidence in "university being a place for me" from 73% of participants prior to the program, to 85% of participants post-program.</p> <p>In 2017 74% of participants indicated they were enrolled at a university commencing in 2018.</p>

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Bunga Barrabugu Winter Program University of Sydney	Years 11 and 12 students	<p>Format: One week on-campus</p> <p>Aims: To prepare Aboriginal and Torres Strait Islander students for their end-of-school exams.</p> <p>Content: Students experience an introduction to university life, attend subject-specific intensive workshops presented by expert tutors, receive tailored one-on-one academic tutoring, and participate in exam practices and preparation. Students meet academics from faculties to discuss preferences, opportunities and pathways to university.</p>	None available.	<p>The program increased 24.5% of participants' "understanding of what university courses are available in their area of interest", and helped participants gain significant understanding of the scholarships and pathways available at the University of Sydney.</p> <p>The program increased 96.2% of participants' knowledge of the processes and requirements for the Cadigal Program at the university.</p> <p>The program increased participants' understanding of the support services and pathways available at university from 55.9% pre-program to 88.2% post-program.</p>
Indigenous Student Engineering Spring Workshop University of Sydney	Years 10 and 11 students	<p>Hosts/partners: University of Sydney's Faculty of Engineering and Engineering Aid Australia</p> <p>Format: Six days on-campus</p> <p>Aims: To introduce Aboriginal and Torres Strait Islander students to engineering as a university course and career.</p> <p>Content: Students participate in challenging hands-on activities, work in teams to develop a cross-disciplinary project, engage in specific science and mathematics subject skills enrichment workshops, and undertake external industry site visits. Students attended either the Indigenous Australian Engineering Summer School (IAESS) or the Wingara Mura Bunga Barrabugu Summer program.</p>	None available.	<p>In 2017 participants indicated increased academic confidence, understanding of alternative entry pathways and of available support services; these participants very highly ranked the opportunity to attend external industry.</p>

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
<p>Life at Sydney University of Sydney</p>	<p>Year 11 students</p>	<p>Format: Three days on-campus Aims: To increase student preparedness and feelings of confidence in their academic abilities. Content: Students participate in a variety of hands-on faculty-based activities and senior study-skills workshops. Students receive a range of information on planning, research for future opportunities, and alternative entry pathways and available equity scholarships to make informed decisions about their futures.</p>	<p>None available.</p>	<p>Participants who agreed or strongly agreed that they understood the university student experience increased from 37% pre-program to 98% post-program.</p> <p>Participants who agreed or strongly agreed that they could better link their interests to further study and careers increased from 77% pre-program to 94% post-program.</p> <p>All participants agreed or strongly agreed that the program increased their knowledge of what scholarships and alternative pathways are available at university (increased from 43% pre-program).</p> <p>96% of participants agreed or strongly agreed they knew more about student services at the university and where to find more information (increased from 45% pre-program).</p> <p>The number of participants indicating they planned to go to university in the year immediately following their HSC increased from 62% pre-program, to 75% post-program. An additional 9% planned to go to TAFE or VET college, and 40% were interested in a gap year.</p>

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Galuwa Experience University of Technology Sydney	Years 10-12 students	Camp options: <ul style="list-style-type: none"> • Engineering and IT experience • Business and law experience • Design, architecture and building experience • Health experience • Science experience Format: 3-5 days on-campus Aims: To provide Aboriginal and Torres Strait Islander students with a taste of university, and facilitate ideas for possible courses post-high school. Content: Students participate in interactive hands-on workshops, site visits with industry partners, cultural activities, and information about career paths. Participants hear inspirational talks from Indigenous and non-Indigenous students, cadets and professionals.	None available.	None available.
Jumbunna Outreach School or Community Visits University of Technology Sydney	Year 5 and upwards students	Format: One-day school visits Aims: To speak to Aboriginal and Torres Strait Islander students about university life and Jumbunna's Direct Entry Pathways Program. Content: Visits are tailored to schools' needs and special sessions are available around NAIDOC, educational aspiration as well as cultural and personal affirmation. Visits can provide a Q&A session, presentations, hands-on workshops or an aspirational session.	None available.	None available.
Nanga Mai "to dream" Program University of Technology Sydney	High school students	Format: One day on-campus Aims: To provide Aboriginal and Torres Strait Islander students with a taste of UTS life, and allow them to dream big about their future. Content: Students attend workshops in a faculty of choice, meet current Indigenous students and hear about their experiences at UTS, and gain information about getting into university.	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Aboriginal and Torres Strait Islander Future Students Information Evenings University of Western Sydney	Years 7-12 students, non-school leavers, caregivers, and educators	Format: One night on-campus Aims: To provide Aboriginal and Torres Strait Islander people with information about available courses and support options at the university. Content: Information sessions include information on course options, pathways to study, support services available, scholarships and life on-campus.	None available.	None available.
Koori Aspirations Program University of Wollongong	Years 7-12 students	Hosts/partners: University of Wollongong and TAFE Format: One day on- or off-campus Aims: To help Aboriginal and Torres Strait Islander students explore career and study options at UOW and be immersed in Indigenous culture. Content: Students participate in on-country experiences and workshops for Maker Space, STEM, careers and AIME, and meet staff from the Woolyungah Indigenous Centre and UOW Outreach team. Students learn about making choices, pathways for learning, leadership and mentorship, and managing competing priorities.	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
<p>Leading Through Culture Program University of Wollongong</p>	<p>Year 9 students</p>	<p>Hosts/partners: University of Wollongong and the Department of Education Format: Two days on-campus Aims: To foster leadership skills among Aboriginal and Torres Strait Islander students. Content: Students engage in cultural knowledge and activities, and university faculty workshops that foster leadership capabilities. Students participate as leaders in collaboratively designing and delivering a Leadership Action Project within their school community, with ongoing support from UOW and DOE staff. Students are mentored by current Aboriginal and Torres Strait Islander UOW students, and meet mentors, staff and the UOW.</p>	<p>Student pre- and post-surveys.</p>	<p>Participants' confidence in taking on a leadership role within their school or community increased from 46.7% pre-program to 81% post-program.</p> <p>Participants' awareness of their values and skills, and how they could use these in future leadership roles, increased from 63.3% agreeing and 0% strongly agreeing at pre-program, to 90.5% agreeing and 23.8% strongly agreeing post-program.</p> <p>Prior to the program, 63.3% of participants felt comfortable on the UOW campus, and this increased to 85.7% post-program.</p> <p>The number of participants who felt they could contact UOW staff if they had questions about university rose from 60% pre-program to 76.2% post-program.</p>
<p>Woolyungah Indigenous Centre (WIC) Future Student and Engagement stream – “Your Future Matters” University of Wollongong</p>	<p>Years 10-12 students</p>	<p>Format: Multiple formats Aims: To engage Aboriginal and Torres Strait Islander students in higher education. Content: WIC offers the following future engagement streams:</p> <ul style="list-style-type: none"> • Year 12 pathway chats • Year 10 subject selection chats • Career-mapping zoom sessions • Free summer camp December 2020 • WIC merchandise – hoodie or shirt • Opportunities to participate in online Indigenous Admissions Program at the end of term 2. 	<p>None available.</p>	<p>None available.</p>

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Preparation for Tertiary Success (PTS) Program Batchelor Institute of Indigenous Tertiary Education	High school students	Format: Multiple units across two semesters Aims: To increase Aboriginal and Torres Strait Islander students' access to university. Content: Students learn necessary academic skills such as confidence, resilience and ability to learn new things. Students and staff participate in a "both-ways" learning experience by bringing together their Indigenous and academic knowledge systems.	None available.	Completion and retention rates in the program continue to increase.
Badi Athu ("grow to know") Central Queensland University	Years 11 and 12 students	Format: One week on-campus Aims: To raise Aboriginal and Torres Strait Islander students' tertiary aspirations through activities that explore Indigenous peoples' relationships and connections to land and sea. Content: Students participate in an Indigenous teaching model that facilitates conversations about Indigenous cultures and communities, and discussions about career pathways. Students are given guidance from CQUniversity academics, Indigenous Elders, students, graduates and staff to prepare them for learning and life post-school.	Student pre- and post-surveys.	None available.
Community Aspirations Program (CAP-ED) Central Queensland University	High school students	Format: 3 hours on-campus Aims: To demystify university for Aboriginal and Torres Strait Islander students to aid their transition into higher education. Content: Students attend short sessions that are practical, inspiring and focused on identity and culture. The CQUniversity CAP-ED program also hosts information sessions and network events to encourage discussion among Aboriginal and Torres Strait Islander people within local communities.	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Indigenous Youth Sports Program Central Queensland University	10-17 year old students	Format: One week on-campus Aims: To raise Aboriginal and Torres Strait Islander students' awareness of university and VET pathways at CQUniversity and increase familiarity with campus life. Content: Students participate in sports and exercise clinics, academic workshops, cultural activities and discovery of the university campus to reinforce training technique, effort and attitude. Reference: Macgregor et al. (2015).	Student pre- and post-surveys.	Participants experienced a significant increase in their agreeance to the following statements: <ul style="list-style-type: none"> • "My education is the ticket to the job or career I want in the future" $p < 0.001$ • "Planning my goals and how to reach them connects me to the future I want" $p < 0.05$ • "Talking about my future plans with others helps me to work out what I want" $p < 0.05$ • "University is something that I can consider at any time in the future" $p < 0.001$ • "I choose to work hard at school" $p < 0.01$ • "I expect this program will help me learn more about my options after school" $p < 0.01$.
Open information nights Griffith University	High school students and mature age students	Format: One night on-campus Aims: To explore study options and gain information needed to start higher education. Content: Participants receive information on the GUMURRIL services, support and facilities; Griffith's programs and study options; how to apply for entry; preparation programs and early bird workshops; enrolment, scholarships and tutoring support; and a Q&A with current students and staff.	None available.	None available.

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JCU Winter School James Cook University (JCU)	Years 10-12 students	Format: Five days on-campus Aims: To help Aboriginal and Torres Strait Islander students explore study options. Content: Students participate in academic lectures and team-building activities in an interactive program. Students meet university staff and students and form bonds with each other.	None available.	None available.
Campus Explorer James Cook University (JCU)	Years 6-10 students	Generic outreach program featuring Aboriginal and Torres Strait Islander students Format: One day on-campus Aims: To raise students' aspirations, awareness and achievements; to explore affordability; to promote action for access. Content: Students visit JCU's Cairns and Townsville campuses to engage in hands-on activities with academic staff, while providing insight into life as a university student. A team of student ambassadors known as the School Squad deliver a range of engagement activities to students, under the 5As framework developed at JCU to: raise aspirations, raise awareness, raise achievement, explore affordability, promote action for access.	Student pre- and post-program surveys admissions data.	In 2016 22% of participants identified as Aboriginal and/or Torres Strait Islander. Participants reported high levels of satisfaction with the program, particularly interaction with the School Squad members. In 2016 the program increased participants' consideration of university as an option from 73% prior to the program, to 81% following the program.
SID (Science and Infrastructure Development School) Winter School Queensland University of Technology (QUT)	Years 10-12 students	Hosts/partners: Queensland University of Technology Oodgeroo Unit and WSP Australia Camp options: <ul style="list-style-type: none"> • Biological Sciences • Earth and Environmental Science • Chemistry • Information Technology • Urban Development/Planning • Stakeholder Engagement • Engineering Format: Five day on-campus Aims: To give Indigenous students a taste of university life and knowledge about future career pathways. Content: Students meet current QUT students who share insights into their own journey, have an opportunity to interact in faculty activities, as well as hearing from "real world" industry professionals.	Student post-program surveys.	None available.

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Project IMBA Camp Queensland University of Technology (QUT)	High school students	<p>Hosts/partners: Queensland University of Technology Oodgeroo Unit and RAAF Base Amberley</p> <p>Format: Off- and on-campus.</p> <p>Aims: To create career aspirations and close the educational gap for students from Cunnamulla State High School.</p> <p>Content: Students attend a series of academic, cultural and social workshops in Cunnamulla during July school holidays. Students also visit the QUT campus to experience and learn about university life and visit the RAAF Base Amberley for a full day to introduce students to the host of job opportunities on base. The activities students engage in during the day excursion include:</p> <ul style="list-style-type: none"> • visiting the Air Traffic Control Operations • session with the fire fighters • visit to the military working dogs • visiting the Amberley Health Centre • tour of a C-17 Globemaster aircraft. 	Student post-program surveys.	Following the 2016 program, 84% of participants indicated they were motivated to do their best at school to have more choices when they graduate.
InspireU Program University of Queensland (UQ)	Junior program: Years 9 and 10 students; Senior program: Years 11 and 12 students; Education program: Years 10-12 students	<p>Camp options:</p> <ul style="list-style-type: none"> • Senior engineering • Junior STEM • Health sciences • Business • Law • Education <p>Format: One week on-campus</p> <p>Aims: To provide Aboriginal and Torres Strait Islander students with insight into the wide range of study options at UQ.</p> <p>Content: Students participate in residential camps, interactive workshops and lectures, and workplace/industry visits. Students receive guidance from UQ and industry experts about study and career opportunities.</p>	Student pre- and post-surveys.	None available.

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Deadly Ways University of Southern Queensland	Years 7-12 students	Camp options: <ul style="list-style-type: none"> • Years 7 and 8 Indigenous Connections • Years 9 and 10 Career Camp • Years 11 and 12 Residential Format: Four days on-campus Aims: To introduce Aboriginal and Torres Strait Islander students to campus life and post-school options. Content: Students tour USQ facilities, participate in interactive cultural and study area activities, and work with industry specialists to explore different career pathways. Students hear inspiring stories and experiences of USQ current students and Indigenous Elders. Years 11 and 12 students progress through three themed stages: Capacity Building, Explore and What Next.	Student pre- and post-surveys.	Unable to provide impact data.
Indigenous Connections Ipswich Indigenous Education, Youth and Sport Program (IEYSP) University of Southern Queensland	10-17 year old students	Hosts/partners: Indigenous Connections and Kambu Aboriginal and Torres Strait Islander Corporation for Health Format: One week on-campus Aims: To connect Aboriginal and Torres Strait Islander families with USQ, develop health and education awareness, and develop career and post-school aspirations. Content: Students engage in traditional dance, games and cultural workshops, academic information sessions and skills clinics with AFL Queensland, Netball Queensland and the Brian Kerle Basketball Academy. Students meet and hear from community leaders such as from the Department of Aboriginal and Torres Strait Islander Partnerships, and Indigenous Lawyers Association of Queensland. Students also visit USQ's state-of-the-art training labs and teaching facilities, and explore their post-school career and study options at a Careers Expo.	None available.	None available.
Murri Futures University of Sunshine Coast	Years 7-12 students	Format: On-campus Aims: To increase Aboriginal and Torres Strait Islander students' awareness of educational and career options. Content: Students participate in a variety of workshops on potential options, and pathways; and develop self-identity through a range of group activities. Students receive information from professionals from employment sectors and Tertiary Institutions. The sessions align with the following curriculum: Critical and Creative thinking, Personal and Social Capability; Ethical and Inter-cultural understanding; Aboriginal and Torres Strait Islander Histories and Cultures.	None available.	None available.

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Sing Shake Shuffle University of Sunshine Coast	Years 3-6 students	<p>Format: Recurring afternoon activity</p> <p>Aims: To provide Aboriginal and Torres Strait Islander students with learning based on Aboriginal and Torres Strait Islander culture.</p> <p>Content: Students attend sessions delivered by USC Indigenous Services staff and local Aboriginal and Torres Strait Islander cultural educators. Through these sessions, students engage in intercultural learning through songs and dance, local Aboriginal culture, and traditions language and stories. The sessions align with the following curriculum: Critical and Creative thinking, Personal and Social Capability; Ethical and Inter-cultural understanding; Aboriginal and Torres Strait Islander Histories and Cultures.</p>	None available.	None available.
USC Buranga Camps University of Sunshine Coast	Years 9 and 10 students; Senior leadership camp: Years 11 and 12 students	<p>Camp options:</p> <ul style="list-style-type: none"> • USC Buranga Senior Leadership Camp years 11 and 12 • USC Buranga Camp years 9 and 10 <p>Format: Three days on-campus</p> <p>Aims: To improve Aboriginal and Torres Strait Islander students' self-efficacy and self-concept.</p> <p>Content: Students engage in activities that explore identity, interpersonal and cultural relationships and decision-making in a culturally safe and supportive environment. The sessions are delivered by USC Indigenous Services staff. These activities align with the following curriculum: Literacy and Numeracy, Information and Communication Technology (ICT) Capability, Critical and Creative thinking, Personal and Social Capability, Ethical and Inter-cultural understanding, Aboriginal and Torres Strait Islander Histories and Cultures.</p>	None available.	None available

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Boys-to-Men University of Sunshine Coast	Male Years 7-12 students	<p>Format: Six weeks in community</p> <p>Aims: To enhance Aboriginal and Torres Strait Islander male students' cultural identity and strengthen their connection to culture.</p> <p>Content: Each week, students participate in cultural activities with other strong male mentors/leaders in the community. Students attend sessions that cover topics such as Connection to Culture, health and wellbeing, language and dance, bush tucker, and storytelling/significant sites. These sessions are delivered by USC Indigenous Services staff as well as local Traditional Custodians and experienced guest facilitators. The program has been developed through careful consultation with Elders, community leaders, students, parents, schools and Community. These sessions align with the following curriculum: Critical and Creative thinking, Personal and Social Capability; Ethical and Inter-cultural understanding; Aboriginal and Torres Strait Islander Histories and Cultures.</p>	None available.	None available.
Homework groups University of Sunshine Coast	Years 7-12 students	<p>Hosts/partners: University of Sunshine Coast, Gympie State High School, and Uniting Care Community Services in Fraser Coast</p> <p>Format: Weekly after school</p> <p>Aims: To assist Aboriginal and Torres Strait Islander students with the completion of homework and assessments.</p> <p>Content: The series of homework groups provide students access to computers with internet, afternoon tea, and transport from school and home by request. These sessions are delivered by USC Indigenous Services staff as well as UCC staff and school teachers.</p>	None available.	None available.
Karnkanthi ("lifting up") Indigenous Education Program University of Adelaide	Years 10-12/13 students	<p>Program options:</p> <ul style="list-style-type: none"> • Karnkanthi Full Program • Karnkanthi Associate Program <p>Format: Sessions throughout the year</p> <p>Aims: To build Aboriginal and Torres Strait Islander students' confidence and capacity to pursue university education.</p> <p>Content: Students participate in social, cultural and academic support including Academic Mentoring Programs to support their transition from senior years into university.</p>	Wirltu Yarlur Aboriginal Education has commenced formal evaluations of all programs.	The program currently engages 20% of the current SACE Indigenous cohort, supporting their ambitions for higher education.

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Santos Karnkanthi Indigenous Engineering School University of Adelaide	Years 11 and 12 students	Hosts/partners: Wirltu Yarlur Aboriginal Education at the University of Adelaide, and Santos Format: Five days on-campus Aims: To allow Aboriginal and Torres Strait Islander students to experience the many different ways engineering can be applied to the real world. Content: Students participate in activities and hands-on experiences to broaden understanding of engineering, including coding activities, playing with robots, site visits, and meeting industry representatives. Students experience Adelaide and student life at the University of Adelaide.	Wirltu Yarlur Aboriginal Education has commenced formal evaluations of all programs.	None available.
Campus tours University of Adelaide	Years 8-12 students	Format: One day on-campus Aims: To introduce Aboriginal and Torres Strait Islander students to university life. Content: Students participate in a comprehensive tour around the university including: Wirltu Yarlur Aboriginal Education, CASM, university grounds and facilities. Students also participate in faculty and/or cultural activities, attend presentations about entry pathways into university, and meet current Aboriginal and/or Torres Strait Islander students to talk about university life.	Student feedback surveys.	None available.
School visits University of Adelaide	Years 8-12 students	Format: One day in schools Aims: To introduce Aboriginal and Torres Strait Islander students to university pathways, options and opportunities. Content: School visits are tailored to meet students' needs and generally comprise of a motivational presentation about university pathways, options, and opportunities.	Student feedback surveys.	None available.
Marni Wingku University of Adelaide	Years 7-12 students	Format: One day on-campus Aims: To reinforce university goals for Aboriginal and Torres Strait Islander students, and empower to pursue their education and career aspirations. Content: Students and teachers participate in innovative, enquiry-based workshops from a range of university disciplines.	Student feedback surveys.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
A day in the life: STEM Day Out University of South Australia	Years 6-9 students	Format: One day on-campus Aims: To engage Aboriginal and Torres Strait Islander students in STEM careers. Content: Students participate in rotation of STEM workshops to explore the science of air, apply this to planes and make their own plane wings. Students also discover why puzzles are fundamental to mathematic thinking and link this to problem solving. Students learn about the engineering design process and design and construct an object using limited materials in small groups.	None available.	None available.
A day in the life: Sport Science – VX Sport GPS Technology University of South Australia	Years 11 and 12 students	Format: One day on-campus Aims: To develop Aboriginal and Torres Strait Islander students' knowledge and understanding of sport science related concepts in an applied manner. Content: Students participate in hands-on GPS activities, manipulation and work of individual data, and identify career pathways to Health Science and other related areas at the University of South Australia.	None available.	None available.
A day in the life: STEM for Humanity University of South Australia	Year 10 students	Format: One day on-campus Aims: To introduce Aboriginal and Torres Strait Islander students to STEM-related fields. Content: Students participate in a three-staged program including: 1) a workshop on the basics of Geospatial Science and participation in data collection using GPS units around the university grounds; 2) a workshop on the humanitarian application of 3D printers and use CAD software to create 3D objects for disaster relief situation; and 3) small group engineering team work to produce a water filter from everyday materials that is presented, tested and evaluated.	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
<p>UniCamps University of South Australia</p>	<p>Years 9-12 students</p>	<p>Format: 3-5 days on-campus Aims: To increase Aboriginal and Torres Strait Islander students' awareness of educational and career pathways and raise their aspirations to undertake post-secondary studies. Content: Students experience student life at a regional university campus, explore programs and courses offered by UniSA at Whyalla, build lifelong learning skills, meet and form connections with students and the Whyalla/Port Augusta communities. Students are provided information on services available to them in larger regional centres (e.g., health and library services) and career pathways available with post-secondary study (e.g., nurse, midwife, or librarian). Students engage in sessions that create familiarity and confidence with lectures, tutorials, online and video conference learning; and practise academic skills, such as critical thinking, writing, speaking and comprehension in English. Reference: Thomas et al. (2014).</p>	<p>Anecdotal student reports. Teacher surveys in March 2011.</p>	<p>Most participants rated the program as good or very good. Participants reported enjoying coming to a mainstream facility or town and learning to understand the surroundings. The program may have increased participants' levels of self-esteem and confidence, along with their feeling comfortable interacting with unfamiliar people. Participants gained awareness of what university studies involved. Following the program, participants saw different career possibilities for themselves, not restricted to attending university. Following the program, some participants reported they were thinking of going to university, and mentioned engineering, teaching and nursing as areas of possible interest. Participants recognised they would possibly need extra help with mathematics and the sciences, and additional support with money, food and accommodation. Teachers' survey responses suggested the program was valued.</p>

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
School visits University of Tasmania	High school students (particular focus on Years 11-12 students)	Format: School visits Aims: To have regular, open communications, and informal and flexible planning processes with schools with high Aboriginal student enrolment. Content: Aboriginal Student Success Officers work with individual students to assist in facilitating linkages to support other school activities, strong relationship building skills, and networking and developing a shared understanding of community needs and continual learning.	None available.	None available.
Sports and Occupational Aspiration Raising (SOAR) Camp La Trobe University	Years 9-11 students	Format: Four days on-campus Aims: To introduce Aboriginal and Torres Strait Islander students to university and possible career paths. Content: Students participate in a number of activities including rock climbing and an amazing race. Students also attend a full day of journalism/communication activities including utilising La Trobe's news room, where they create, film and present news, sport and weather stories. Students also complete an engineering activity to create their own device that measures heartrate and temperature, and visit the Scienceworks Museum. A number of presentations and learning sessions surrounding career options are also presented.	None available.	None available.
Sunraysia Indigenous Educational Excellence Program (SIEEP) La Trobe University	Years 9 and 10 students	Format: One week on-campus Aims: To raise aspirations, increase social cultural navigational capacities, and enhance academic achievement among Aboriginal and Torres Strait Islander students from the Victorian Sunraysia region. Content: Students participate in educational and cultural activities presented by expert Indigenous community members and staff from La Trobe University designed to build their capacity for participation in university. The program also provides in situ professional learning for teachers to assist them in supporting student participants.	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Winter Camp Monash University	Years 10-12 students	Format: One week on-campus Aims: To provide Aboriginal and Torres Strait Islander students with in-depth insights into university life. Content: Students participate in hands-on activities including cultural activities; and receive advice on careers, courses, and student support. Students hear stories, and receive advice and mentoring from current university students. Students also attend speeches from community leaders and other inspiring people; as well as Q&A panel discussions with staff and students. These activities and sessions focus on team-building, motivation, meeting new people, culture, confidence building and health and wellbeing.	None available.	None available.
Secondary school and community outreach programs Monash University	High school students	Format: One day on- or off-campus Aims: To talk to Aboriginal and Torres Strait Islander students about study and employment opportunities at Monash University. Content: Students attend presentations delivered at their school on study and employment options at Monash University; or attend an on-campus visit and tour of Monash University's domestic campuses.	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
<p>Marngo Designing Futures Swinburne University of Technology</p>	<p>High school students</p>	<p>Format: One-week place-based program Aims: To build Aboriginal and Torres Strait Islander students' cultural leadership capacity, stimulate interest and raise awareness of creative pathways and careers that promote and enable Indigenous design and innovation. Content: Students work with Indigenous designers, artists and filmmakers, Elders, families and school communities. Students engage in fun, hands-on activities and tools to explore a future in the creative industries, framed from local Indigenous perspectives, and to develop a folio. The program emphasises self-determination, co-creation and shared insights through place-based design projects and action-orientated learning activities to develop and reinforce cultural identities. Reference: Edwards-Vandenhoeck (2016; 2018).</p>	<p>Student anecdotal feedback.</p>	<p>Participants demonstrated personal aptitude directing and/or teaming up with others, taking on roles, sharing ideas and thinking laterally to solve problems as they arose.</p> <p>Participants reported increased confidence and connections to culture and identity:</p> <ul style="list-style-type: none"> • "I learnt a lot about design, what I can do with it and about my culture." • "After this camp I see myself as a stronger person and more confident." • "I paint a lot and I make a lot of different things but after being here, you start getting more interested in design and visual communication." • "We think that this camp has brought us closer to this land, especially being on someone else's."
<p>Residential Indigenous Science Experience (RISE) University of Melbourne</p>	<p>Years 9 and 10 students</p>	<p>Format: One week on-campus Aims: To engage Aboriginal and Torres Strait Islander students in STEM and inspire them to consider STEM careers. Content: Students explore science in world-class facilities including St Vincent's Hospital and the Gene Technology Access Centre (GTAC); participate in lectures and hands-on science workshops including physics, chemistry and human biology; meet other Indigenous students, current university student mentors, and current Indigenous students studying science; and experience the city.</p>	<p>None available.</p>	<p>None available.</p>

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Murrab Barrak Open Day University of Melbourne	Years 11 and 12 students	Format: Three day on-campus Aims: To introduce Aboriginal and Torres Strait Islander students to university life, study, and university pathways. Content: Students participate in activities and meet current Indigenous staff and students at the university, academic and admissions staff from the wider university, and staff from the residential colleges.	None available.	None available.
Raise the Bar University of Melbourne	High school students	Hosts/partners: University of Melbourne and Athletics Australia Format: One week on-campus Aims: To encourage Aboriginal and Torres Strait Islander students to study at university through participation in track and field events. Content: Students receive professional coaching, academic mentoring and positive psychology training from professionals including elite athletes and staff members.	None available.	None available.
Murrab Barrak Experience and Leadership Camp University of Melbourne	Years 11 and 12 students	Format: One week on-campus Aims: To familiarise Aboriginal and Torres Strait Islander students with the university space, different facilities and degree options. Content: Students participate in discussions with mentors and ambassadors, yarning circles with postgraduate students that allow for honest questions about university life, and workshops about individual leadership.	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Old Ways, New Ways Program Edith Cowan University	High school students	<p>Format: One week on-campus</p> <p>Aims: To improve Aboriginal and Torres Strait Islander students' participation in science subjects, and increase their employment in science and technology.</p> <p>Content: Students participate in creative, hands-on science activities that take them on a journey of scientific exploration, where Traditional methods of Aboriginal toolmaking and ancient techniques for bushland survival are celebrated, shared and linked to practical, current scientific methodology and enquiry. Students attend workshops that are adapted to the differing requirements of students' ages, cognition and literacy levels. Upper-level high school students are trained to be demonstrators and provide technical and theoretical expertise in running workshops for younger students. The program emphasises capacity-building and raising aspirations for higher education attainment and participation. The hands-on approach seeks to motivate students to study science at high school and beyond, and to improve understanding of Traditional knowledge and its complementary to current scientific methodologies. The celebrating and showcasing of traditional aspects of science by Noongar/Nyungar Elders reinforces cross-cultural collaboration and increases respect for traditional knowledge and perspectives.</p>	None available.	None available.
Bilang Bilang Program Edith Cowan University	Years 7-12 students	<p>Hosts/partners: ECU's Kurongkurl Katitjin</p> <p>Camp options:</p> <ul style="list-style-type: none"> • Year 7-9 camp • Year 10-12 camp <p>Format: Two days on-campus</p> <p>Aims: To give Aboriginal and Torres Strait Islander students a taste of university life at Edith Cowan University.</p> <p>Content: Students participate in a variety of workshops on the Mount Lawley and Joondalup campuses.</p>	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Engaging your school Murdoch University	Years 7-12 students	<p>Workshop options:</p> <ul style="list-style-type: none"> • Breaking Barriers – critical thinking to break down and challenge stereotypes associated with Aboriginality and university • Stress Less – focuses on wellbeing to reflect on worries and explore ways students can take care of themselves and stay happy while studying • Rise Up – leadership workshop, sharing stories and reflecting on the impact of studies on school, family and community • Think Big – aspiration building to give students information about pathway options for university and giving the opportunity to reflect on their journey so far. <p>Format: One day on- or off-campus Aims: To encourage Aboriginal and Torres Strait Islander students to engage with school. Content: Students participate in workshops designed to inspire critical thinking, leadership and aspirations for post-school. Empowers students with the information needed to make decisions about their futures.</p>	None available.	None available.
Deadly Dreaming annual event Murdoch University	Years 7-12 students	<p>Hosts/partners: Murdoch University, representatives from all WA universities, and other tertiary education providers Format: One day on-campus Aims: To introduce Aboriginal and Torres Strait Islander students to university course options and career pathways. Content: Students participate in workshops to explore all things university, meet existing students and staff, and “speed dating”-style interviews with employers to learn about the various pathways into higher education. The expo-style event also has representatives from companies and organisations in the community that assist in life after school by offering traineeships, scholarships, or services.</p>	None available.	None available.
Djiba Murdoch University	Years 11 and 12 students	New program currently being developed.	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Year 12 Leadership Seminar University of Western Australia	Year 12 students	Format: Five days on-campus Aims: To introduce Aboriginal and Torres Strait Islander students to the range of courses available at The University of Western Australia. Content: Students visit numerous faculties and departments to learn about the courses in which they are interested. Sports Science, Medicine, Dentistry, Law, Arts, Architecture, Psychology and Engineering have been some of the courses that have been explored. Students receive information on applying for university, enrolment, scholarships and support from the School of Indigenous Studies, and Student Services is discussed on an individual and group basis.	None available.	None available.
Year 10 and 11 Science, Health and Engineering Camp University of Western Australia	Years 10 and 11 students	Format: On-campus Aims: To encourage Aboriginal and Torres Strait Islander students to aspire towards studying science, engineering, medicine, and technology at university. Content: Students participate in hands-on activities in science, engineering, medicine and technology. There is an emphasis on fields relevant to Indigenous communities in Western Australia, including sustainability, health, ecology, conservation, infrastructure, water, energy and mineral resources. Students meet current Indigenous students, as well as Indigenous scientists, engineers and health professionals that demonstrate the relevance and importance of science and technology to Indigenous people. Students also attend a career forum and information session on selecting school subjects.	None available.	None available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
<p>Year 8 Discovery Days University of Western Australia</p>	<p>Year 8 students</p>	<p>Participating UWA schools, centres and disciplines:</p> <ul style="list-style-type: none"> • Agricultural and Resource Economics • Anthropology (Berndt Museum) • Archaeology • Arts Multimedia Centre • Chemistry • Computer Science and Software Engineering • CTEC • Geology Museum • Law • Mechanical Engineering • Sport Science, Exercise and Health • Physics • Water Research <p>Format: One day on-campus Aims: To introduce Aboriginal and Torres Strait Islander students to university course options. Content: Students participate in hands-on activities that have included making a gyroscope, practising medical procedures, making ice-cream with liquid nitrogen, acting as a juror in a moot court, or making your own earthquake. Students also meet current Indigenous university students and receive information about university entry pathways and the School of Indigenous Studies' Outreach Program.</p>	<p>None available.</p>	<p>None available.</p>
<p>Year 9 Djinanginy University of Western Australia</p>	<p>Year 9 students</p>	<p>Format: One day on-campus Aims: To help Aboriginal and Torres Strait Islander students understand the university environment, and to stimulate an interest in university study. Content: Students participate in lecture style activities and hands-on activities from a number of different study areas on-campus. Students meet current Indigenous university students and receive information about university entry pathways and the School of Indigenous Studies' Outreach Program.</p>	<p>None available.</p>	<p>None available.</p>

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
School excursions to UWA University of Western Australia	High school students	Format: One day on-campus Aims: To introduce Aboriginal and Torres Strait Islander students to university life. Content: Students participate in a 2-3-hour tour of the University to view the facilities and resources available to students at the School for Indigenous Studies. Students also meet current Indigenous university students who discuss various aspects of university life. Places of interest to visit on-campus include Winthrop Hall, the Sport and Recreation Centre, Residential Colleges, Lecture Theatres, Guild Village and Prospective Students Office. Visits to individual departments to do activities can also be arranged.	None available.	None available.
School visits University of Western Australia	High school students	Format: One day school visits Aims: To introduce Aboriginal and Torres Strait Islander students to university. Content: Staff from the School of Indigenous Studies visit students in their school to share information about university.	None available.	None available.
TISC Information Night University of Western Australia	Year 12 students	Format: One night on-campus Aims: To provide Aboriginal and Torres Strait Islander students with information and advice on how to nominate preferences for all UWA courses. Content: Students and caregivers meet university staff, and attend an information session to learn more about the Tertiary Institutions Service Centre (TISC) and the university application process, and ask questions relating to university. Students also receive information on course preferences, scholarships, and other relevant information to studying.	None available.	None available.

<p>Aspire UWA University of Western Australia</p>	<p>Years 9-11 students</p>	<p>Generic outreach program featuring Aboriginal and Torres Strait Islander students Hosts/partners: 63 partner secondary schools and communities in the Kimberley, Pilbara, Mid-West, Gascoyne and Perth/Peel regions. Format: Three days on-campus Aims: To build a culture where higher education is an expectation rather than the exception for students. Content: Students participate in hands-on activities run by researchers, teachers, student ambassadors and staff that showcase future study options. Activities are tailored to each school and to each year group. Younger students participate in activities that explore different disciplinary areas; older students participate in activities that reinforce the reality of studying at university by learning advanced study skills, revision workshops, and exposure to some of WA's best and brightest minds. Students receive specialist support from university partners, the Faculty of Health and Medical Sciences and the School of Indigenous Studies. Reference: Skene et al. (2016).</p>	<p>Illustrative case study incorporating quantitative and qualitative data.</p> <p>Student and ambassador baseline surveys.</p> <p>Teacher and principal online Qualtrics surveys.</p> <p>Email correspondence.</p> <p>Reference group meetings at each residential camp.</p> <p>Individual interviews to refine program delivery.</p>	<p>In 2011 80% of staff in partner schools agreed the program enhanced the motivation of students and increased students' awareness of higher education, as well as their interest in specific areas of study.</p> <p>Following the program in 2011 77% of educators became more proactive in encouraging students to consider university education.</p> <p>In 2013 99% of teachers and principals agreed the program was valued by their school.</p> <p>In 2013 97% of teachers and principals were satisfied with the program's quality and range of activities.</p> <p>In 2013 96% of teachers and principals agreed that it is a very effective program.</p> <p>Caregivers living in regional communities see the impact of the program on their child's engagement, and appreciate the opportunity their children have.</p> <p>Student feedback: "I am considering going to uni now because this experience has opened my eyes, it has given me ideas and inspiration for future studies" (student, Carnamah DHS).</p>
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UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
				Ambassador feedback: “Having acted in an ambassador role with Aspire UWA, I believe I have significantly developed my leadership, communication and teamwork skills” (Aspire ambassador).
National Indigenous Business Summer School Australian Business Deans	Years 10-12 students	<p>Hosts/partners: Australian Business Deans with Victorian universities: University of Melbourne, RMIT University, and Swinburne University of Technology; Western Australian universities: University of Western Australia, Murdoch University, Curtin University, and Edith Cowan University; and New South Wales universities: University of New South Wales</p> <p>Format: One week on-campus</p> <p>Aims: To immerse Aboriginal and Torres Strait Islander students into university life, and introduce business and entrepreneurship pathway options.</p> <p>Content: Students live on-campus and participate in a business boot-camp where they will test business case-solving skills, receive mentoring from Indigenous business owners and entrepreneurs, and get hands-on experience as a business professional. Students meet Indigenous people working in business, Indigenous entrepreneurs, business owners and current business students. Students also visit co-host universities, cultural centres, and industry site visits at company headquarters.</p>	Student pre- and post-surveys at Victorian program.	Victoria: <ul style="list-style-type: none"> • All participants rated their overall experience of NIBSS as either Excellent or Very Good. • All participants felt culturally supported and would recommend the program to other students. • The program increased participants’ likelihood of considering university post-school from 57% pre-program to 100% post-program. New South Wales: <ul style="list-style-type: none"> • 90.9% of participants rated the Indigenous business student mentors and supervisors 10/10. • 72.7% of participants rated the experiences of the group presentations 10/10. Western Australia: <ul style="list-style-type: none"> • No evaluation available.

UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
Indigenous Australian Engineering School Camp multiple universities	Years 9-12 students	<p>Hosts/partners: Curtin University, University of Sydney, and Engineering Aid Australia</p> <p>Format: One week on-campus</p> <p>Aims: To support Aboriginal and Torres Strait Islander students to participate in mathematics and science at high school, and to provide them with insights into future pathways and possibilities for engineering careers.</p> <p>Content: Students meet engineering role models, and participate in engineering activities, tutorials, and site visits. Engineering Aid Australia sponsor students and link them with industry sponsors with the view for students to gain work experience and possible future employment. The program formalises relationships with students and supports them regardless of the area and institution they choose to enrol. Reference: Paige et al. (2016).</p>	None available.	<p>IAESS was rated a valuable experience by 95% of participants.</p> <p>The program improved 90% of participants' perception of engineering and 75% of participants' interest in studying engineering at university.</p> <p>The program built capacity for university study by providing students with an opportunity to return over several years.</p> <p>Mentioned in Johnston & King (2008): A former participant reported the program showed them "how engineering can be valuable to the future of Indigenous communities".</p> <p>The program aims to support students to select their pathway and deems student enrolment in a science-based course a success regardless of area or institution.</p>
Victorian Indigenous Engineering Winter School multiple universities	Years 10-12 students	<p>Hosts/partners: University of Melbourne, RMIT University, Swinburne University of Technology, and Monash University</p> <p>Format: Six days on-campus</p> <p>Aims: To expand Aboriginal and Torres Strait Islander students' perspectives of studying and working in engineering.</p> <p>Content: Students explore the participating universities' campuses and discover different pathways into engineering. Students participate in cultural and engineering hands-on workshops. Students also meet Indigenous engineers and engineering students, hear their inspirational stories, and experience working in engineering.</p>	Student online post-program survey.	<p>All participants found the site visits relevant and beneficial and they would recommend the program to other years 10-12 students.</p> <p>Participants responded that they would "absolutely" (54%), "very likely" (15%), or "possibly" (31%) consider applying to one of the universities they visited in the VIEWS program.</p>

<p>Australian Indigenous Mentor Experience (AIME) multiple universities</p>	<p>12-18 year old students</p>	<p>Hosts/partners: University of South Australia, Deakin University, RMIT University, Central Queensland University Format: Combined on- and off-campus Aims: To increase Aboriginal and Torres Strait Islander students' skills, opportunities, and confidence to succeed and transition to university, further education or employment. Content: Students receive 20-30 free academic tutoring sessions a year, and participate in 45 one-hour AIME Theatre of Education sessions at university campuses. Year 12 students also receive one-on-one career transition support. Reference: Harwood et al. (2013).</p>	<p>In-depth observations of third and final day of AIME Outreach program. Pedagogy of three scholastic years and sites. Observations framed by Setting Theory and focused on participants, space and place, teaching episodes, and informal conversations and interviews. Review of curriculum documents, progression and costing documents. Student pre- and post-program surveys. Data analysis: thematic analysis of qualitative data in NVivo; simple descriptive, Confirmatory Factor Analysis (CFA); Multiple Indicator Multiple Cause Modelling (MIMIC); and Correlational and Multiple Regression Analysis for quantitative data.</p>	<p>83% of Core and 94% of Outreach mentees did not want to leave school before completing year 12.</p> <p>Strongest predictor for wanting to complete year 12 was AIME teaching the value of high school completion.</p> <p>49% of Core and 62% of Outreach aspired to tertiary education after school.</p> <p>The Core program:</p> <ul style="list-style-type: none"> • 33% of year 12 participants transitioned to university studies in 2013 • 91% of participants showed increased levels of school attendance. <p>The Outreach program:</p> <ul style="list-style-type: none"> • participants showed positive associations between perceptions of the AIME program and aspirations, engagement, and identity. • most important aspect of building confidence was how much AIME demonstrated the importance of finishing year 12 • strongest predictor of Aboriginal pride was the degree to which Outreach mentees felt
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UNIVERSITY	TARGET AGE GROUP	BRIEF DESCRIPTION AND REFERENCES (IF APPLICABLE)	EVALUATION STRATEGY (IF PUBLICLY AVAILABLE)	IMPACT
				AIME helped them understand more about their culture.
ConocoPhillips Science Experience multiple universities	Years 9 and 10 students	<p>Generic outreach program featuring Aboriginal and Torres Strait Islander students</p> <p>Hosts/partners:</p> <ul style="list-style-type: none"> • Qld: Central Queensland University, University of Queensland, University of Southern Queensland, Queensland University of Technology, Griffith University • NSW: University of Technology Sydney, University of Sydney, Macquarie University, Charles Sturt University • SA: University of South Australia, Flinders University, University of Adelaide • Vic: Federation University, University of Melbourne, RMIT University • WA: Curtin University, Murdoch University, Edith Cowan University <p>Format: 3-4 days on- or off-campus</p> <p>Aims: To engage students with an interest in science in a wide range of science activities.</p> <p>Content: Students perform experiments in laboratories, meet and hear senior lecturers in lecture theatres, attend site visits and walks around the campus of a university or tertiary institution. Students are provided information about further studies and career pathways in science, technology and engineering.</p>	Student post-program survey.	<p>The program increased 97% of participants' understanding of their career options.</p> <p>The program provided information that 91% of participants agreed was important to them.</p> <p>The variety of experiences offered was interesting to 97% of participants.</p> <p>Following the program, 89% of participants stated they are considering studying science, engineering or technology post-school, and 43% of participants requested career/study information.</p>

Appendix 2: Interview questions

Interview questions for Indigenous university students (Cohort 1)

- Can you tell me about your experiences undertaking an outreach camp?
- What were the best aspects of the camp?
- Did you make networks/connections with students and/or staff?
- What could have been improved? Were there cultural aspects that were included/could be improved?
- Did you fill out any evaluation of the camp?
- What follow-up was there post-camp?
- Did you participate in any other programs or initiatives that introduced you to university? If so, which programs were they?
- What was your pathway into university?
- Did the camp assist in making you interested in undertaking university study?
- Are there any areas/issues regarding your experiences that we haven't talked about and you feel you'd like to discuss?
- Can I interview a parent/family member to learn about their perspectives on the impact of the camp on you?

Interview questions for staff working in outreach programs with Indigenous students (Cohort 2)

- Can you tell me about your experiences working in outreach with Indigenous students?
- Can you tell me more about how the program/camp runs?
- What are the best aspects/highlights of the outreach camps you work on?
- Do the students make connections/relationships through camps?
- If you view the camp as successful, what do you think are success factors?
- What could have been improved?
- Is there any evaluation of the program undertaken? If so, what types?
- What data do you record about students and their transition to university?
- Is there follow-up after camp?
- How effective do you think camps are in assisting students to consider uni as an option?
- How has COVID-19 changed/impacted your camp delivery?
- Are you aware of other good examples of outreach programs or initiatives that support Indigenous students to consider university?
- Are there any areas/issues regarding your experiences that we haven't talked about and you feel you'd like to discuss?
- Are there other outreach staff you think I should interview?

Interview questions for caregivers/parents (Cohort 3)

- Can you tell me about your child's experiences undertaking an outreach camp?
- If applicable, can you tell me about your personal experiences with undertaking an outreach camp?
- What was the best aspect of the camp your child attended?
- Did they make networks/connections with students and/or staff?
- What could have been improved for the camp your child attended? Were there cultural aspects that were included/could be improved?

- Did your child participate in any other programs or initiatives that introduced them to university? If so, which programs were they?
- What was your child's pathway into university?
- If applicable, what was your pathway into university?
- What made your child interested in undertaking university study? What role did the camp have in making your child interested in undertaking university study?
- Are there any areas/issues regarding your experiences that we haven't talked about and you feel you'd like to discuss?

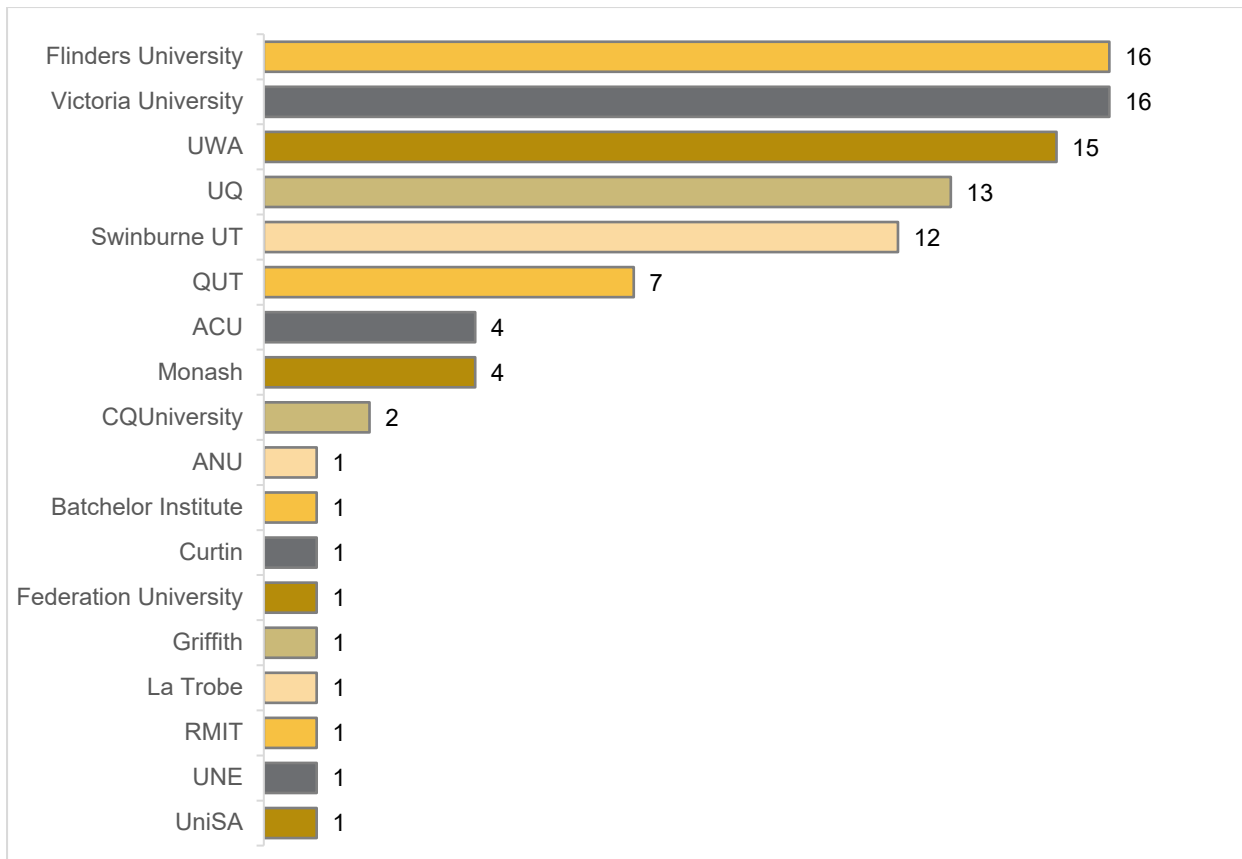
Appendix 3: Additional tables from survey

Key influences for university enrolment – internal to university

	NOT AT ALL N (%)	RARELY N (%)	SOMEWHAT N (%)	A LITTLE N (%)	VERY MUCH N (%)	N/A N (%)
University friends	28 (29)	7 (7)	23 (24)	20 (20)	14 (14)	6 (6)
University's engagement in participant's culture	13 (13)	11 (11)	22 (22)	28 (29)	23 (24)	1 (1)
Course content	4 (4)	3 (3)	18 (18)	24 (25)	45 (46)	4 (4)
Course study-load, timetable, or assessment tasks	10 (10)	10 (10)	35 (36)	25 (26)	16 (16)	2 (2)
Teaching staff (lectures/tutors)	14 (14)	20 (20)	25 (26)	24 (25)	13 (13)	2 (2)
Face-to-face learning environment	9 (9)	9 (9)	18 (18)	35 (36)	23 (24)	4 (4)
Learning options (face-to-face vs. online)	12 (12)	11 (11)	19 (19)	25 (26)	28 (29)	3 (3)
Library environment	18 (18)	17 (17)	20 (20)	19 (19)	20 (20)	4 (4)
Aboriginal and Torres Strait Islander unit environment	5 (5)	2 (2)	16 (16)	26 (27)	42 (43)	7 (7)
General support staff	7 (7)	13 (13)	25 (26)	28 (29)	24 (25)	1 (1)
Aboriginal and Torres Strait Islander unit support staff	5 (5)	5 (5)	18 (18)	24 (25)	40 (41)	6 (6)
Student union/Student guild services	18 (19)	15 (15)	28 (29)	17 (17)	15 (15)	5 (5)
Aboriginal and Torres Strait Islander unit services	4 (4)	4 (4)	22 (22)	24 (25)	41 (42)	3 (3)
Access to nature at university	15 (15)	6 (6)	26 (27)	18 (18)	28 (29)	5 (5)

Key influences for university enrolment – external to university

	NOT AT ALL N (%)	RARELY N (%)	SOMEWHAT N (%)	A LITTLE N (%)	VERY MUCH N (%)	N/A N (%)
Family	18 (18)	14 (14)	15 (16)	18 (18)	33 (34)	0 (0)
Friends outside of university	27 (28)	13 (13)	28 (29)	12 (12)	18 (18)	0 (0)
Members of local community	31 (32)	15 (16)	21 (21)	14 (14)	16 (16)	1 (1)
Paid work	37 (38)	12 (12)	10 (10)	19 (19)	15 (16)	5 (5)
Community or volunteering commitments	31 (32)	18 (18)	24 (25)	16 (16)	5 (5)	4 (4)
Parenting responsibilities	43 (44)	6 (6)	11 (11)	2 (2)	9 (9)	27 (28)
Caring responsibilities	37 (38)	7 (7)	8 (8)	11 (11)	12 (12)	23 (24)
Child care/day care issues	48 (49)	6 (6)	5 (5)	5 (5)	6 (6)	28 (29)
Domestic responsibilities	37 (38)	17 (18)	16 (16)	5 (5)	11 (11)	12 (12)
Financial situation	19 (20)	11 (11)	18 (18)	26 (27)	21 (21)	3 (3)
Having a HECS debt	19 (20)	13 (13)	22 (22)	16 (16)	24 (25)	4 (4)
Accommodation options	29 (29)	10 (10)	24 (25)	13 (13)	15 (16)	7 (7)
Availability of public transport	20 (20)	7 (7)	20 (20)	22 (23)	23 (24)	6 (6)
Travel time to university campus	14 (14)	11 (11)	20 (20)	23 (24)	25 (26)	5 (5)
Access to a computer for study	23 (24)	4 (4)	18 (18)	22 (22)	27 (28)	4 (4)
Access and reliability of internet connection for study	19 (19)	5 (5)	16 (16)	24 (25)	30 (31)	4 (4)
Involvement in sports	43 (44)	4 (4)	15 (16)	14 (14)	14 (14)	8 (8)



Participants' university of enrolment (n)