

Interrogating relationships between student support initiatives and Indigenous student progression

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Abbreviations

DET	Department of Education and Training
ISSP	Indigenous Student Success Program
ITAS	Indigenous Tutorial Assistance Scheme
IHEU	Indigenous Higher Education Units
NIAA	National Indigenous Australians Agency
PAC	Peer Assisted Coaching
PASS	Peer Assisted Study Sessions
SES	Socioeconomic Status
SPSS	Statistical Package for the Social Sciences
WA	Western Australia
RA	Research Assistant

Executive Summary

Aboriginal and Torres Strait Islander (henceforth Indigenous¹) students are enrolling in university degrees at historically high rates; however, the majority of these students are not *completing* their qualifications. The latest available national statistics show that the national average six-year Bachelor completion rate for Indigenous university students is 41 percent. This is compared to 63 percent for non-Indigenous students and 56 percent for Low SES cohorts, not separated by Indigenous indicators (DET, 2019). This statistical discrepancy thus signals a substantial gap between intention and achievement of a university degree for Indigenous students. This *enrolment-completion gap* leaves open the questions as to what supports are available to Indigenous undergraduate students, and how likely are they to access them? While previous research has examined individual characteristics of Indigenous students in relation to degree completion rates (e.g., Shalley et al., 2019), this project shifts focus from individual students to universities to explore the efficacy of the support services that universities offer in terms of Indigenous student success.

In efforts to address the significant *enrolment-completion gap* amongst Indigenous cohorts and to work towards education equity, universities across Australia offer Indigenous students a variety of extra-curricular support programs. These include general university services such as learning and teaching support centres, Peer Assisted Study Sessions (PASS), Peer Assisted Coaching (PAC), student advisor networks, student guilds, medical and counselling services, and equity and diversity offices. Some universities offer targeted pre-university bridging courses specifically for Indigenous students – while others transition Indigenous students into university through whole-of-university bridging programs (Behrendt et al., 2012). Whole of university support programs are often supplemented by Indigenous-specific support administered through Indigenous Higher Education Units (IHEUs) and funded by the federal government’s Indigenous Student Success Program (ISSP). However, institutional strategies for Indigenous student support can vary widely across institutions. This project focused on two universities that administer the majority of Indigenous-specific support initiatives through centralised IHEUs – also known as Aboriginal Centres.

IHEUs offer practical, social, emotional, cultural, and infrastructural support, including kitchen and recreation facilities; computer terminals, stationery and printing services; academic and wellbeing support, and social events to promote cultural safety and a sense of belonging on campus (Behrendt, 2012). IHEUs can also administer needs-based financial scholarships and one-to-one tutoring (Indigenous Tutorial Assistance Scheme; ITAS) funded through the ISSP (Uink et al., 2021). In terms of efficacy, prior research suggests that accessing IHEUs, supports Indigenous student retention and success (Barney, 2013; Uink et al., 2021); however, not all Indigenous students are aware of, or choose to, access Indigenous-specific assistance or IHEUs. In this case, research recommends that it is important that whole-of-university academic support programs (such as ITAS or PASS) be “supplemented with equity strategies that recognise the importance of community and family engagement, a sense of belonging and identity, and the development of self-efficacy” (Frawley et al., 2017) if they are to effectively cater to Indigenous student needs. However, there is little comparative evidence to understand how Indigenous students interact with – and perceive of – the full suite of support available to them during their degree studies. This project begins to address this gap.

Finally, in 2020, Indigenous-specific and whole-of-university institutional support initiatives moved to online formats as universities transitioned online in response to the COVID-19 pandemic (Pulver, 2020). This rapid shift to online learning and support threatened

¹ We use the term Indigenous here to refer to Aboriginal, Torres Strait Islander, and Aboriginal and Torres Strait Islander students. We use Indigenous for brevity and acknowledge the immense diversity of Aboriginal and Torres Strait Islander peoples and respect individual’s rights to identify with their preferred terminology.

Indigenous students with cultural and digital isolation (Bennett et al., 2020). As such, this study also considered Indigenous students' perceptions of transitioning institutional supports online.

Research Aims

With an overall motivation to understand and reduce the enrolment-completion gap for Indigenous university students, this study was designed in response to two broad research aims:

1. To map Indigenous students' use of Indigenous-specific, and whole-of-university support services.
2. To assess relations between Indigenous students' engagement with institutional support initiatives and their degree progression.

To achieve this, the project design was guided by three research questions (RQs):

1. What is the pattern of Indigenous students' use of extra-curricular support services over a ten-year period?
2. What is the relationship between Indigenous student progression (as assessed by *pass rates*) and access of university support services?
3. How do successful Indigenous university students:
 - Engage with student support services (both Indigenous-specific and whole-of-university)?
 - View the relationship between student support services and degree progression and/or completion?
 - Experience the transition of support services online in response to COVID-19 lockdowns?

Method

Utilising a mixed-methods approach, this project collated pre-existing quantitative data, and collected Indigenous student testimonials, from two medium sized universities in WA to determine relationships between institutional support and Indigenous student progression. In the quantitative study (Study One), data from targeted Indigenous, and broader university, student support initiatives over a ten-year period were collated, cleaned, and analysed, using Statistical Package for the Social Sciences (SPSS) software to determine: the proportion of Indigenous students that engaged with institutional support services across a ten year period (RQ1) and whether individual differences in service use were associated with individual differences in pass rates (RQ2). The qualitative study (Study Two) was comprised of two yarning circles and two one-to-one yarns, with a total of ten successful Indigenous university students, across the participating universities. In this context, 'success' was defined as having completed a university degree or being in the final year of a university degree. Yarning circles (Bessarab & Ng'Andu, 2010) offered a culturally endorsed and empowering method of data collection whereby the Indigenous student-participants were invited to lead conversations about the roles that student support played during their studies, guided by prompts to encourage the conversation to address the three parts that comprised RQ3. Yarning was facilitated by one Indigenous researcher and one non-Indigenous researcher. The yarning data was audio-recorded, transcribed, and analysed for thematic repetition and narrative significance in terms of Indigenous students' perception and experience of support during their degree studies.

Key Findings

Study One (Quantitative):

- Data on Indigenous student progress was regularly compiled and assessed at the cohort level; data on Indigenous student use of services has been inconsistently collected and assessed.
- Most Indigenous students did not access institutional support programs, be they Indigenous-specific or non-Indigenous specific programs.
- Use of institutional support programs were inconsistently related to pass rates with the most consistent relation found between pass rates and receipt of scholarships.

Study Two (Qualitative):

Narrative findings. Participant narratives suggested alternative conceptualisations of support and success, compared to those first initiated in this study and those mobilised in terms of ISSP funding.

- Rather than viewing student support in terms of functions or departments, participants conceptualised **support as interpersonal relationships**.
- Rather than viewing success through quantitative metrics, such as grades, units passed or degree completions, participants conceptualised **success as quality of experience**.

Narrative and thematic findings combined. Five overarching themes were identified in the yarning circle data. These were:

1. **Positive interpersonal relationships**, which referred to individual staff both within and outside of the IHEU and peer-to-peer support.
2. **Individual attributes and experiences**, which referred to students attributing their ability to progress through degrees to completion as being self-driven, as opposed to university supported.
3. **Sense of belonging**, which referred to feeling – or wishing to feel – connected to Indigenous students and staff through the IHEU community; a desire for connection to culture and Country at university and wanting to be more visible within the broader university.
4. **Instrumental support**, which reaffirmed previous findings in the research as to the challenges of financial insecurity, delays in academic and scholarship support – and the importance of pre-university preparation activities, units, and courses. It also highlighted a gap in support regarding transitioning out of university, once a degree is complete.
5. **Responses to forced online learning in COVID-19**, which generated nominal mixed responses and did not appear to be of great significance to participants as lockdowns in WA were short and had occurred months prior to data collection.

Recommendations for practice

- Universities should consider investing in data management solutions which allow for regular integration of student case management data with student course progress data. This integration will allow universities to easily assess relations between student interactions with institutional support service teams and their course progression to assess whether intervention is associated with better course outcomes.
- Universities should regularly disaggregate Indigenous student data and link this data to student support service usage. This will allow for streamlined assessment of relations between Indigenous student pass rates and service usage.

- Universities should ensure appropriate gender identifiers (e.g., woman, man, non-binary, agender) are available for students to complete at enrolment.
- Prioritise and nurture interpersonal relationships between academic and student support staff and Indigenous students as key support mechanisms. Importantly, these support relationships should not only be the responsibility of Indigenous staff members but all academic and support staff who interface with students. Institutional support in terms of providing workload allocations for student support within academic job roles should co-occur with this recommendation.
- Ensure Indigenous students access financial and academic supports early in the semester.
- Consider basing financial subsidies on the cost of unit materials, as opposed to issuing a blanket sum to all students.
- Professional development and workload attribution to front-line teaching staff to formalise and embed important extracurricular support functions and referral processes within the teacher-student relationship. Or ensure there are visible non-academic support roles, embedded into disciplines, to supplement academic teaching with wellbeing supports. This recommendation should not come at a cost to existing Indigenous academic staff. Instead, institutions should consider employing Indigenous academic staff in roles specifically dedicated to advise on effective teacher-student relationships or account for this advisory role in existing Indigenous academics' workloads.
- Appoint holistic, Indigenous student support Coordinators who prioritises individual student needs, personalised care, and whole-of-life support to Indigenous students.
- Intentionally create a community of practice in IHEUs which validates the diversity of the student cohort, with sensitivity to the experiences of students studying off-Country.
- Clarify the role of Elders in terms of student support.
- Provide multiple and ongoing opportunities for Indigenous university students to network and socialise, within and between universities.
- Consider the role of wellbeing in the relationship between support service access and academic outcomes.

Recommendations for research

- Apply longitudinal (within-person) analysis to Indigenous student course progression and support service use data to examine the impact of service use patterns on student success trajectories across their university careers and to examine time lagged effects of service utilisation.
- Similar to existing work with post-graduate students (e.g., Chirgwin, 2015), run qualitative studies with early-degree, at-risk and withdrawn Indigenous undergraduate students to understand perceptions and experiences of support amongst less 'successful' students.
- Consider how to measure students' interactions more accurately with university supports, not bound by 'service program' but governed by the level of interpersonal support students received.
- Conduct research with Indigenous students in states and territories in Australia that experienced extended periods of forced online learning, due to COVID-19 lockdowns, to understand Indigenous student support needs over this time.

Recommendations for policy

- Universities should benchmark Indigenous student service use data against that of other equity groups as well as non-equity student groups. Universities should also consider setting targets for Indigenous student participation in extra-curricular support services.
- Ensure Indigenous centres are fully engaged in critical discussions relating to the use of relevant Commonwealth funding streams e.g., Indigenous Student Success Program funding, Indigenous Regional Low SES Attainment Fund.
- Provide opportunities for interaction between IHEUs and the broader university community at events, market-days, and club-days.
- Visibly acknowledge Traditional Owners in artwork, dual naming, and signage throughout the university campuses.
- Mandate professional development of non-Indigenous academic staff, teaching units with Indigenous and/or cross-cultural content in terms of Indigenous cultural awareness and sensitivity.
- Conduct regular Indigenous-led audits of Indigenous and cross-cultural curriculum content to ensure it is culturally safe.
- Ensure universities have an Indigenous employment strategy that effectively increases recruitment and retention of Indigenous professional and academic staff. Increased Indigenous staff at universities is crucial to enable the above recommendations and ensure that existing Indigenous staff, particularly academic staff, are not over-burdened with demands for capacity building for non-Indigenous staff.

Ethics

Ethics approval was obtained from the Human Research Ethics Committees at the participating universities (Approval number 2021/196; 2021/006; 2021-02995-HILL) which ensured the study complied with the National Statement on Ethical Conduct in Human Research and the Ethical Guidelines for research with Aboriginal and Torres Strait Islander peoples, as determined by the National Health and Medical Research Centre (NHMRC).

Introduction

Universities Australia's Indigenous Strategy (2017-2020) provides a clear mandate for supporting Indigenous students. The strategy endorses a 'whole-of-university' approach stating: "By embedding Indigenous issues within core policies, universities commit to ensure that central administration and Indigenous education units do not have sole responsibility for effecting these policies. Faculties, schools and divisions across universities will be equally responsible and accountable for progress." (Universities Australia, 2017. p.28).

To encourage Australian universities to focus on resolving low Indigenous student enrolments, progression, and completions, the federal government – via the National Indigenous Australians Agency (NIAA, n.d) – offers supplementary funding to universities through the Indigenous Students Success Program (ISSP). Key here is the term *supplementary* highlighting that ISSP funds serve to augment, rather than supplant, existing student load for Indigenous students. The implementation of the ISSP model in 2017 saw a change in focus from retention to success as a funding determinant, meaning that progressing through a degree was given more weight than staying enrolled. Although this shift in policy represented a positive step, in terms of a broadening focus on student progression, universities must demonstrate that a student has remained in their degree, but not necessarily demonstrate that students have progressed through their degrees (Uink et al., 2018). This means that it is imperative for research to determine factors which support and encourage Indigenous students to progress through and complete degree qualifications. Without this information, the ISSP funding model becomes a 'catch-22' situation where universities need to be effectively supporting Indigenous students' progression and completion trajectories to obtain funding to support future Indigenous students' progression and completion trajectories. Thus, it is important for research to determine the efficacy of university support mechanisms to offer directional best-practice initiatives that not only present opportunities to improve progression rates, but that might contribute to a sustainable funding model to support such initiatives.

Currently, there is some flexibility allowed within ISSP funding allocation to enable universities to cater to unique cultural and institutional contexts. However, this can be a double-edged sword, because it means there is no national benchmark or best-practice model for ISSP-funded Indigenous student support. The variety of ways that ISSP funding is spent across institutions makes it difficult to determine the transferability of effective models. Further, apart from some evidence supporting the efficacy of IHEUs, there is nominal evaluation of current support services in terms of their relationship to Indigenous student progression and completion. At best, evidence of best practice may be anecdotally located in universities with comparatively higher unit success and degree completion rates. However, a lack of empirical testing and evaluation means it is difficult to attribute Indigenous student success to university support models over other factors.

The dearth of evidence-based, sector-wide models of effective support for Indigenous university students likely perpetrates the disproportionately large and inequitable enrolment-completion gap. Thus, it is important for research to interrogate the relationship between the types of support Indigenous university students receive throughout their respective institutions and their progression through their degrees. This project begins this interrogation by analysing pre-existing and collected data from two universities in Western Australia (WA), with a view to understanding if and how various support mechanisms facilitated or inhibited Indigenous students' progression through their degree studies. Participating universities used student *pass rates* as indicators of student progression based on the rationale that if students were passing their units, they were progressing through their degrees. Pass rates represent the number of units a student passed as a function of the number of units they attempted, across set time. The current study leveraged Indigenous student pass rates as

a proxy for degree progression to ensure an outcome which was meaningful and useful to participating universities.

Background

This project was motivated by a desire to better understand and ameliorate the significant discrepancy between enrolment and completion rates amongst Indigenous university students, with only 41 percent of Indigenous students who enrol in an Australian undergraduate degree completing their qualification within six years (DET, 2019). This is compared to a 63 percent completion average for the non-Indigenous domestic student population and a 56 percent completion rate for Low SES domestic cohorts (not separated by Indigenous indicators) in the same year (2014). Further, the dropout rate for Indigenous cohorts (43 percent) is higher than the completion rate, with nearly twice as many Indigenous students dropping out in their first year of study (17 percent), compared to their non-Indigenous counterparts (9 percent).

To pursue educational equity for Indigenous students, universities across Australia offer Indigenous students a variety of extra-curricular support programs which focus on reducing academic, cultural, and social stressors associated with studying. Support programs can be Indigenous-specific, for example, Indigenous Higher Education Units (IHEU) within universities, targeted scholarships and one-to one tutoring, funded through the ISSP: or available to the broader university student community, for example, learning and teaching support centres, student advisor networks, student guilds, health and counselling services and equity and diversity offices. Prior research finds that accessing IHEUs, supports Indigenous student retention (Barney, 2013); however, not all Indigenous students are aware of, or choose to, solicit Indigenous-specific assistance (Uink et al., 2018). Further research recommends that academic support programs be “supplemented with equity strategies that recognise the importance of community and family engagement, a sense of belonging and identity, and the development of self-efficacy amongst Indigenous students” (Frawley et al, 2017). These recommendations are reflected in earlier calls to embed support opportunities into first year curriculum to cater to the widening participation in higher education and subsequent increase in non-traditional student enrolments at university (Kift & Nelson, 2005). Finally, while previous research has considered student characteristics and behaviours associated with Indigenous university student progression (Shalley et al., 2019), research is yet to explore the role that institutional support initiatives play in terms of Indigenous student progression and completion.

Research Aims

This project aimed to map Indigenous students’ use of Indigenous-specific and whole of university support services, and to understand how engagement with institutional support initiatives is associated with Indigenous student progression.

The following research questions guided the project design.

1. What is the pattern of Indigenous students’ use of extra-curricular support services over a ten-year period?
2. What is the relationship between Indigenous student progression and access of university support services?
3. How do successful Indigenous university students:
 - Engage with student support services (both Indigenous-specific and whole-of university)?
 - View the relationship between student support services and degree progression and/or completion?
 - Experience the transition of support services online in response to Covid-19 lockdowns?

Research sites

The universities selected for this project have consistent numbers of Indigenous enrolments (approximately 300 per university) and comparable student success rates, with Indigenous undergraduates passing approximately 70 percent of their units at each institution. The main campuses for each university are located on Wadjuk Noongar Country. Data from the two universities was pooled for the main analysis in both Study One and Study Two, with acknowledgement of comparative insights between the sites, when relevant to the research questions.

University One facilitates the majority of ISSP funded support through its IHEU and caters to an Indigenous cohort predominantly enrolled in internal campus-based studies. The IHEU is focused on Indigenous student support and does not offer an Aboriginal Studies major or minor to the broader university population. It's academic teaching functions are focused specifically on developing Indigenous student capacity through a semester-long pre-university bridging program and an Indigenous-specific undergraduate enabling unit that embeds support into curriculum. The bridging program transitions approximately 20 students into the university every year. As with University One, University Two coordinates academic, cultural, and social support functions for Indigenous students through an IHEU. However, it does not offer a dedicated Indigenous enabling program, but service-teaches many Indigenous-focused units into a broad range of disciplines across the university. University Two caters to a higher portion of online Indigenous students, many who live in non-metropolitan regions.

Project design

Gathering data from two universities allowed for generalisation of results across institutions, as well as acknowledgement of relevant cross-institutional differences. To garner both quantitative and qualitative insights, this project was comprised of two independent studies. Study One synthesised multiple pre-existing data sources (including Indigenous student enrolment rates, grades, and support service access) from the participating universities to determine whether use of supports predicted student *progression rates* (defined as the proportion of units passed in a semester, Uink et al., 2018). Extra-curricular support functions were mapped to understand students' engagement in Indigenous specific and general student support services across both universities. Study Two analysed data from yarning circle discussions with (predominately) final year Indigenous students and Indigenous graduates from the participating universities to gain an understanding of how students with successful progression track records, perceived the utility of various university supports in relation to their course progression and completion.

As each study had a unique methodological approach and focus, Study One (quantitative) and Study Two (qualitative), they were reported independently. The relationship between the studies was addressed, and the findings synthesized, in the report conclusion. This included an emphasis of independent and comparative insights that informed recommendations for best-practice support for Indigenous university students, in terms of institutional practice, university policy, and future research that works to resolve the enrolment-completion gap.

Study One: Relations between Indigenous university student pass rates and service usage

Data and Methods

Data for Study One came from internal datasets on Indigenous student enrolments, grades, and service usage, held by the two participating universities. This data was routinely collected by both universities. Indigenous status was determined by student self-report at the time of their enrolment.

The sample was limited to Indigenous undergraduate students who began a bachelor's degree between 2010-2019. Prior research suggests that Indigenous students can take up to ten years to complete a bachelor's degree (Shalley et al., 2019). Hence a ten-year period was selected in the current study to ensure a wide range of students including those who had successfully completed a bachelor's degree, those who had exited university without completing a degree, and those who were in the progress of completing their degree. The dataset followed students from their first unit attempt (i.e., first teaching period) to their final attempted unit. Thus, a student could be represented multiple times throughout the dataset and some students dropped in-and-out of the dataset. Students who had begun their bachelor's degree prior to semester 1 2010 were excluded from the current analysis. Some students changed their degree across the 2010-2019 period which theoretically reset their course progress. However, because of our focus on assessing pass rates to assess degree progression, only the grades from units that were attached to a student's *first* degree were used in the current analysis.

Datasets were identified and obtained during a scoping exercise where members of the research team met with senior leadership and data analysts at each university. This scoping exercise also served to identify a list of Indigenous-specific and wider university support services available to students at each university.

Specific datasets identified were:

- Lists of Indigenous students enrolled in a bachelor's degree between 2010-2019
- Course progress data for each Indigenous student between 2010-2019. These datasets provided information on each unit a student had attempted, date of attempt, and their grade for each unit (student grades datasets)
- Datasets containing information on Indigenous students' use of Indigenous-specific and broader university support services from 2010-2019 (service use datasets).

Students' unique university ID numbers, which follow them for the life of their studies, were used to link their grades data to their service use data. Data was structured into semesters (semester one, semester two) for each year. For the purpose of this study, any unit that was attempted between January 1st - June 30th was counted as a semester one unit (including trimester one and two units) and any that ran between July 1st-December 31st was counted as a semester 2 unit (including winter term and summer term units). Service use data was structured in the same way, indicating whether a student accessed a service in semester 1 or semester 2 each year (see Appendix A for data scoring instructions).

Measures

Student pass rates were calculated for each student by dividing the number of units passed by the number of units attempted each semester. Thus, each student received a pass rate for the semester ranging from 0 (i.e., student did not pass any of the units they attempted that semester) to 1 (i.e., the student passed 100% of the units they attempted that semester).

Demographic data (date of birth, gender) were sourced from student enrolment databases. Age (as of January 1st, 2020) was calculated based on students' birthdates. Gender was based on students' self-report of gender at the time of their enrolment. Importantly, government regulations only require universities to provide sex identifiers (i.e., female, male, mx) for the purpose of student demographics. These sex identifiers were presented as gender options at enrolment thus gender and sex are likely conflated in the current analysis. A non-binary gender identifier (mx) was available to students at both universities.

Data on *service usage* was provided by heads of services (University One) and a central student management database (University Two). Services were provided with a list of Indigenous student IDs and asked to provide data on touchpoints for each student across the 2010-2019 period. A list of services and availability of data is provided Table 1.

Table 1. Service Use Databases

Description of Service	Extracurricular or Intra-curricular	Indigenous-specific	University	Date Range of Data Available	Data Type
Learning advisors: Group workshops on academic skills (e.g., maths workshop, essay writing, time management, academic integrity), and 1-1 consultations with an academic (e.g., assignment support).	Extra-curricular	No	University One, University Two	University One: 2010-2019 University Two: 2018-2019	Year, semester, type, mode (online vs offline), and number of consultations per calendar year.
Student Success Team: appointments and meetings supporting study progress, health, and wellbeing, assessing personal challenges, and developing action plans to overcome them. Providing referrals to specialist support service both within the university and in the community.	Extra-curricular	No	University One	University One: N/A University Two: 2016-2019	Year and semester of consultation(s).
Student Advisors/Student Support Team: Online ticket system. Discipline- specific pastoral care situated within each faculty, offered course guidance, career support, enrolment support, and pastoral care (student advisors).	Extra-curricular	No	University one	University one: 2011-2019	Year and date of contact with the team, number of contacts each student had.
PAC/PASS: peer academic coaching sessions and assisted study sessions.	Extra-curricular	No	University One, University Two	University One: 2015-2019 University Two: 2018-2019	Year of service, semester of service, number of contact points per student per calendar year.
Careers: workshops and 1-1 sessions on employability skills (e.g., resume writing, interview skills) and career planning.	Extra-curricular	No	University One, University Two	University One: N/A University Two: 2016-2019	Year and semester of consultation(s).

Description of Service	Extracurricular or Intra-curricular	Indigenous-specific	University	Date Range of Data Available	Data Type
Student Guild: representative body for students, financial assistance (e.g., book subsidy scheme, foodbank, second-hand bookshop).	Extra-curricular	No	University One, University Two	N/A	N/A
Health, Wellbeing & Access: medical clinic including GPs and nurses, counsellors, student wellbeing workshops, and disability inclusion and support (e.g., equity study plans).	Extra-curricular	No	University One, University Two	N/A	N/A
Scholarships: internally and externally funded payments to students financially during their studies.	Extra-curricular	No	University One, University Two	University One: 2010-2019 University Two: 2010-2019	Date, type, semester of scholarship recipe.
Indigenous Tutorial Assistance Scheme (ITAS): federally funded tuition for all Indigenous university students	Extra-curricular	Yes	University One, University Two	University One: 2015-2019 University Two: 2017-2019	ITAS utilisation per semester, number of tutoring hours received per semester.
IHEU: contact with the IHEU initiated through university online ticket system.	Extra-curricular	Yes	University one	University one: 2015-2019	Year and date of contact with the team, number of contacts each student had.
Indigenous undergraduate support unit: leverages content from the degree subjects' students are taking in each semester to create individually tailored learning plans.	Intra-curricular	Yes	University One	University One: 2017-2019 University Two: N/A	Semester of enrolment for each student who undertook the unit.

Descriptive Analysis

The first objective of Study One was to map Indigenous students' use of support services across universities. To achieve this, the proportion of students who accessed learning advisors, student success teams, PAC/PASS, careers, scholarships, ITAS, and the Indigenous undergraduate support unit, were calculated for each semester. Comparisons in service usage between the universities are provided where possible. Descriptive analysis also provided the age and gender breakdown of students each semester as well as average and median pass rates each semester. All data was analysed in SPSS V27 (IBM Corp, 2017).

Multiple Regression Analysis

The second objective of Study One was to test relations between Indigenous students' use of institutional support services and their pass rates. Data was assessed cross-sectionally, assessing relations between service use and pass rates each semester. Data was pooled across both universities for the regression analyses. Services which were used most consistently across both universities (ITAS, learning advisors, PAC/PASS, and scholarships) were included in the regression analyses. A series of dichotomous variables were created for each of these services where 0 = student did not access the service that semester, and 1 = student accessed the service that semester.

A series of multiple linear regression models regressed pass rates onto service usage for each semester. Separate models were run for each service. All models included university, gender, and age as covariates. Thus, regression models assessed whether use of a specific service (ITAS, learning advisors, PAC/PASS, or scholarships) accounted for individual differences between students' pass rates, above and beyond any effects due to age, gender, or which university they attended. All models used robust standard errors to account for heteroscedasticity (Williams, 2020). Model fit was assessed by checking whether full models (i.e., inclusive of all predictors) accounted for significant variance in pass rates. Results for each of the models are presented in Tables 6-10 which provide the unstandardized regression coefficients with robust standard errors, Adjusted R² values (i.e., variance accounted for by the full model), 95% confidence intervals, and p-values. The significance level for all *p*-values was set at alpha = .05.

Findings

Data Quality

During the scoping exercise it became apparent that not all service data was either collected in a meaningful way for the study's purposes, or data was unavailable due to privacy and confidentiality clauses. Health and counselling and equity and disability support usage data was protected by privacy and confidentiality policies and thus unable to be released to the study team. Requests for data from the student guild were not successful. Although careers data at University One was collected from 2015 onward it was not recorded against a service date. Therefore, it was not possible to identify which semester a student accessed the careers service. Although University Two had planned to implement the same Indigenous-specific intra-curricular support unit as university one in semester 1 2021, the COVID-19 pandemic meant that staff were reassigned to COVID-19 support and were unable to implement the unit. Finally, although the research team had planned to compare students' service use and pass rates pre-and during the COVID-19 pandemic, student grades data and service use data for 2020 was not ready to be utilised in the time allocated to data collection.

Student Support Team and IHEU Data

Both universities had student support teams/student success teams who were marketed as a first touchpoint for students seeking to improve their academic standing and for holistic advice about successful study. Each university recorded instances of student support through case management software. Data from this software at University One was provided to the research team in a raw format and contained interactions that Indigenous students had with the student support team. These interactions were initiated through the universities online, digital ticket system. Interactions which were coded as being provided by the Student Advisors or as Student Support (2018 onward) were included in the current study. Research team members removed service interactions that were not specific to the student service team (e.g., fees, scholarships, enrolments, warning letters, intermission approvals) and student outreach campaigns (which represented blanket emails) from the dataset. From semester 1 2015 onward interactions between students and the IHEU were captured in the university case management software. Conversations between the research team and staff at the IHEU confirmed that IHEU staff would regularly receive referrals for students at-risk of failing or who were specifically looking for cultural support through this broader student management system. IHEU staff would then enter their interaction with students into the student management database although this was not always done. Thus, there appeared to be a large amount of student support offered by IHEU staff that was not captured in university databases. Likewise, IHEU staff advised that broader university support was not always recorded in this case management software. The research team members were also unable to determine if interactions between student advisors/the student support team, the IHEU and students, were staff initiated. Thus, descriptive data for each of these services (Table 4) likely underrepresents students' use of these services.

University Two began using a new client management software in 2018 where key support areas were required to book student appointments and document outcomes of meetings through the software. Student ID and a clear indication of which university team was responsible for the interaction were also recorded. University Two reported that student support data dating back to 2015 or prior was difficult to obtain, did not contain sufficient detail, or was paper based. Data analysts from University Two extracted relevant information which focused on support types and touchpoints (e.g., appointments rather than email correspondence) that were primarily relevant to student success and learning support, rather than a broader range of university services and teams (e.g., excluding enrolment advice, fee advice, and other types of general enquiries), and data that was electronically available and easily accessible.

RECOMMENDATION: The use of a systemised case management approach for supporting Indigenous university students has been previously recommended (Nakata, 2013). At present, the data generated from these case management systems is either too ideographic (i.e., focused on an individual student to better understand their interactions with the university) or too monolithic (i.e., providing a 'birds-eye' view of overall student access). Universities should invest in data management solutions which allow for regular integration of case management data, particularly that related to student support services, with student course progress data. This integration will allow universities to easily assess relations between student interactions with student success teams and their course progression and establish whether student success team intervention is associated with better course outcomes.

Pass rate data took several iterations to calculate. Indigenous student enrolment, retention, and progress (i.e., pass rate) data were frequently reported by both university data analytics teams for the purpose of ISSP reporting. However, this data was presented at cohort level, for example, presenting pass rates for the entire Indigenous student cohort. Thus, data was not routinely disaggregated to the level of individual student. Although members of the research team were able to obtain disaggregated student data this data was messy in that it recorded every unit attempt a student had made including duplicate attempts (i.e., when unit credit points were carried over from one degree to another degree), and units attached to separate bachelor's degrees (for students who changed degrees across the study period). This resulted in several rounds of data cleaning, primarily conducted by the project's Research Assistant. Although this was acceptable (and expected) within the context of a research study this data cleaning requirement is prohibitive to university support staff who wish to easily assess effectiveness of internal support services.

Disaggregating data to the individual level, as done by the current study team, meant that each individual student in the cohort was assigned a pass rate (based on their academic performance for that semester). In turn, this meant that individual students could vary from each other in terms of pass rates. Such variation between students is necessary to run inferential statistics which are based on analysis of variance (e.g., regression analysis; Cohen et al., 2014). In conducting regression analysis, we were able to pinpoint whether individual differences in service usage were associated with individual differences in pass rates. This analysis would not have been possible with cohort-level data due to zero variance in student scores. Disaggregating data to the individual student level also allowed us to develop a dataset which longitudinally tracked students across their university career. Although a longitudinal analysis was not applied in the current study this dataset can be leveraged to answer future research questions around the role of support services in predicting student retention, progress trajectories, and course completions.

RECOMMENDATION: Universities should regularly disaggregate Indigenous student data and link this data to student support service usage. This will allow for streamlined assessment of relations between Indigenous student pass rates and service usage.

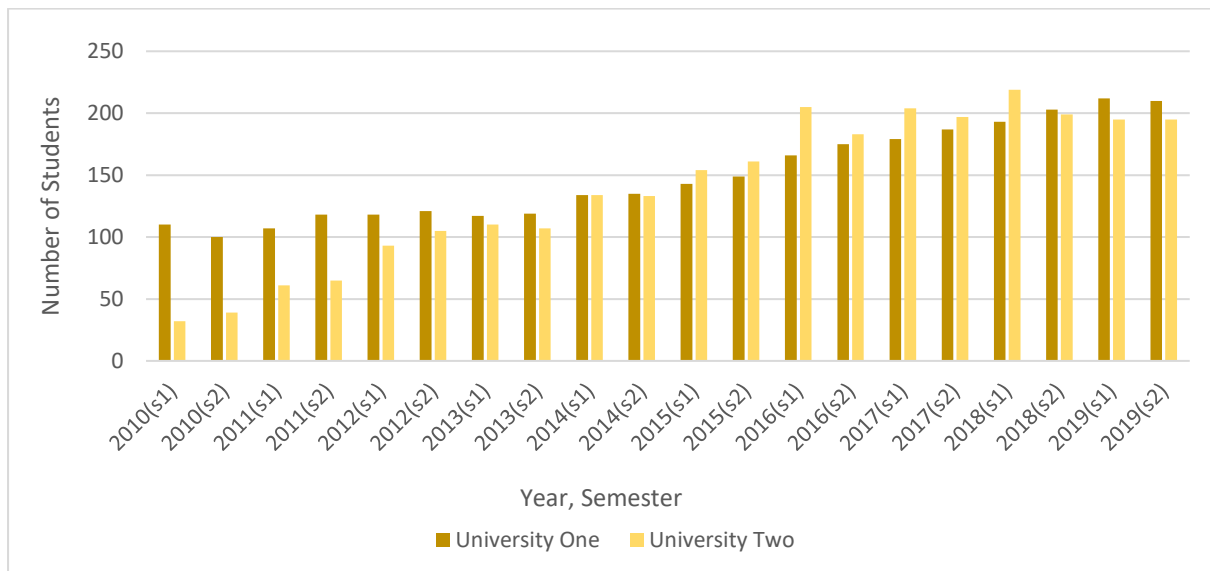
Indigenous Student Cohorts across 2010-2019

The total number of Indigenous students included in analyses were 707 from University One and 747 from University Two. As Figure 1 demonstrates, the number of Indigenous students undertaking units increased consistently across 2010 to 2019 for both universities. At University One, for example, student numbers almost doubled between semester 1 2010 (n = 110) to semester 1 2019 (n = 212). University Two demonstrated a steep increase in Indigenous student numbers from 2010-2013 (n = 23 to n = 110) after which student numbers began to parallel that of University One. Although year-on-year increases in student numbers do not wholly represent new students to the university (i.e., these could represent students from a previous semester returning to study) these figures indicate an overall increase in the number of Indigenous students at each university which has important implications for service access.

Female Indigenous students were consistently overly represented in the data compared to male Indigenous students at both universities (Table 2). This is consistent with national figures where female Indigenous student enrolment is currently twice that for male Indigenous students (DET, 2019b). There was one student that identified as non-binary gender (not included in the table to protect student confidentiality). As noted in the Measures section, university databases conflated sex and gender and did not always provide options

for non—binary gender identification. Thus, non-binary Indigenous students are likely underrepresented in this data. The average age of students ranged between 27- 38 years, although with substantial range.

RECOMMENDATION: Universities should ensure appropriate gender identifiers (e.g., woman, man, non-binary, agender) are available for students to complete at enrolment.



Note: Individual students can be enrolled in multiple semesters and years.

Figure 1. Indigenous undergraduate student numbers by semester, 2010-2019.

Table 2. Gender and Age of Sample

Semester/Year	University One		University Two	
	% Female (<i>N</i>)	Mean age (<i>SD</i>)	% Female (<i>N</i>)	Mean age (<i>SD</i>)
Sem 1 2010	75.5 (83)	38.6 (10.1)	78.1 (25)	33.9 (8.7)
Sem 2 2010	72.0 (72)	37.3 (10.2)	79.5 (31)	34.1 (8.0)
Sem 1 2011	67.3 (72)	36.3 (9.5)	72.1 (44)	35.0 (8.5)
Sem 2 2011	65.3 (77)	34.5 (8.9)	70.8 (46)	35.6 (8.7)
Sem 1 2012	68.6 (81)	34.2 (10.0)	66.7 (62)	35.0 (8.8)
Sem 2 2012	69.4 (84)	33.8 (9.9)	72.4 (76)	34.4 (7.7)
Sem 1 2013	72.6 (85)	35.1 (10.5)	69.1 (76)	34.0 (8.7)
Sem 2 2013	70.6 (84)	33.2 (9.6)	70.1 (75)	33.2 (8.3)
Sem 1 2014	71.6 (96)	31.3 (7.8)	70.9 (95)	33.0 (8.3)
Sem 2 2014	67.4 (91)	30.4 (7.8)	71.4 (95)	33.0 (7.5)
Sem 1 2015	71.3 (102)	30.6 (7.8)	72.1 (111)	32.8 (8.5)
Sem 2 2015	69.8 (104)	30.1 (7.4)	70.8 (114)	32.9 (8.7)
Sem 1 2016	70.5 (117)	29.9 (7.4)	71.2 (146)	32.0 (9.2)
Sem 2 2016	72.6 (127)	29.5 (8.2)	71.0 (130)	31.8 (8.5)
Sem 1 2017	68.7 (123)	29.0 (8.1)	73.0 (149)	30.5 (8.3)
Sem 2 2017	65.2 (122)	28.7 (8.5)	74.1 (146)	31.3 (8.8)
Sem 1 2018	63.7 (123)	28.6 (8.6)	69.7 (152)	30.2 (8.6)
Sem 2 2018	63.5 (129)	28.6 (8.9)	70.4 (140)	30.6 (8.7)
Sem 1 2019	65.6 (139)	28.4 (9.1)	69.2 (135)	30.4 (8.8)
Sem 2 2019	66.7 (140)	27.6 (8.0)	68.7 (134)	29.9 (8.7)

Student Pass Rates across 2010-2019

Indigenous student pass rates slowly but steadily increased across 2010-2019 at both universities (Table 3). Overall, student pass rates across this period suggested high student success. The lowest average pass rate at University One was .58 (2011, s2) meaning that on average, Indigenous students passed approximately 60 per cent of their units. From semester 2 2015 onward, average pass rates for University One remained around 70 per cent with the highest pass rate recorded in s1 2017 (approx. 80 per cent of units passed). Average pass rates were similar for University Two. The lowest pass rate for University Two was .64 (64 per cent of units passed, semester 2, 2010) and the highest pass rate was equivalent to 80 per cent of units passed (semester 1 and 2 2019). Looking at median pass rates for each semester (Table 3) presented an even stronger picture of Indigenous student success. Median scores provided the typical pass rate for students without the impact of a small portion of low achieving students. Based on the median, Indigenous student pass rates sat at 1.00 for most semesters across both universities. This suggests that, by in large, Indigenous students were passing 100 per cent of the units they undertook.

Table 3. Indigenous student pass rates 2010-2019

Semester/Year	University One		Median	University Two		Median
	Mean	SD		Mean	SD	
Sem 1 2010	0.61	0.44	0.78	0.65	0.41	0.78
Sem 2 2010	0.64	0.45	1.00	0.65	0.43	1.00
Sem 1 2011	0.66	0.43	1.00	0.69	0.42	1.00
Sem 2 2011	0.58	0.44	0.7083	0.69	0.41	1.00
Sem 1 2012	0.63	0.42	0.75	0.73	0.40	1.00
Sem 2 2012	0.62	0.44	1.00	0.67	0.44	1.00
Sem 1 2013	0.67	0.43	1.00	0.67	0.42	1.00
Sem 2 2013	0.64	0.43	1.00	0.73	0.41	1.00
Sem 1 2014	0.71	0.40	1.00	0.68	0.42	1.00
Sem 2 2014	0.68	0.42	1.00	0.67	0.42	1.00
Sem 1 2015	0.64	0.43	1.00	0.74	0.40	1.00
Sem 2 2015	0.69	0.42	1.00	0.75	0.39	1.00
Sem 1 2016	0.68	0.41	1.00	0.69	0.42	1.00
Sem 2 2016	0.65	0.43	1.00	0.73	0.40	1.00
Sem 1 2017	0.76	0.38	1.00	0.71	0.39	1.00
Sem 2 2017	0.67	0.42	1.00	0.70	0.40	1.00
Sem 1 2018	0.73	0.40	1.00	0.66	0.42	1.00
Sem 2 2018	0.70	0.41	1.00	0.72	0.41	1.00
Sem 1 2019	0.68	0.42	1.00	0.75	0.37	1.00
Sem 2 2019	0.68	0.41	1.00	0.77	1.00	1.00

Indigenous Student Service Use 2010-2019

Table 4 presents the proportion of students who utilised each intra-and-extracurricular support service across 2010-2019 (where data is available) at University One.

Table 4. Indigenous student service usage, University One, 2010-2019

Semester/Year	Per-cent of students accessing the service (N)						IHEU*
	Learning Advisors	Scholarships	PAC/PASS	ITAS	Undergraduate support unit	Student Advisors/Student Support*	
Sem 1 2010	2.7 (3)	8.2 (9)	--	--	--	--	--
Sem 2 2010	0	3 (3)	--	--	--	--	--
Sem 1 2011	2.8 (3)	10.3 (11)	--	--	--	2.8 (3)	--
Sem 2 2011	0	3.4 (4)	--	--	--	19.5 (23)	--
Sem 1 2012	0.8 (1)	11 (13)	--	--	--	25.4 (30)	--
Sem 2 2012	0.8 (1)	1.7 (2)	--	--	--	24.0 (29)	--
Sem 1 2013	6 (7)	8.5 (10)	--	--	--	17.1 (20)	--
Sem 2 2013	3.4 (4)	3.4 (4)	--	--	--	8.4 (10)	--
Sem 1 2014	3.7 (5)	10.4 (14)	--	--	--	8.2 (11)	--
Sem 2 2014	3.7 (5)	2.2 (3)	--	--	--	8.9 (12)	--
Sem 1 2015	4.9 (7)	12.6 (18)	2.8 (4)	26.6 (38)	--	24.0 (34)	20.0 (29)
Sem 2 2015	1.3 (2)	12.1 (18)	1.3 (2)	18.8 (28)	--	4.0 (6)	41.6 (62)
Sem 1 2016	0.6 (1)	14.5 (24)	3.6 (6)	25.9 (43)	--	23.0 (38)	27.0 (44)
Sem 2 2016	0	8.6 (15)	1.1 (2)	28 (49)	--	27.5 (48)	81.1 (142)
Sem 1 2017	2.8 (5)	18.4 (33)	4.5 (8)	32.4 (58)	--	10.6 (19)	22.3 (40)
Sem 2 2017	3.2 (6)	12.3 (23)	3.7 (7)	29.4 (55)	9.1% (17)	42.8 (80)	9.1 (17)
Sem 1 2018	3.6 (7)	13 (25)	6.7 (13)	33.7 (65)	13% (25)	30.0 (57)	6.2 (12)
Sem 2 2018	0.5 (1)	13.8 (28)	5.9 (12)	30.0 (61)	9.4% (19)	51.2 (104)	7.4 (15)
Sem 1 2019	0.5 (1)	16.5 (35)	6.6 (14)	28.3 (60)	13.2% (28)	41.0 (87)	17.0 (36)
Sem 2 2019	0.0 (0)	14.3 (30)	5.7 (12)	26.7 (56)	16.2% (34)	40.0 (65)	0.0 (0)

Note: Percentages and frequencies are as a proportion of the number of students undertaking units each semester and year. Service usage is defined by utilisation of at least one or more sessions/consultations. -- = no data available. *Data should be interpreted with caution due to under-reporting (see *Data Quality*).

As Table 4 illustrates, the vast majority of Indigenous students at University One did **not** use any extra- or intra-curricular services. Indeed, in some instances, less than 1 per cent of students utilised services (e.g., learning advisors). In some instances, the total number of Indigenous students accessing a specific service reached less than 5 students each semester (e.g., learning advisors, PAC/PASS). ITAS was the most highly utilised service among Indigenous students compared to other services. From 2015 to 2019 ITAS has been utilised by around a quarter to a third of Indigenous students. The intra-curricular support unit was another Indigenous-specific service available at University One. This unit showed a strong uptake since its inception in semester 2 2017, from 9.1 per cent (n = 17 students) in semester 1 2017 to 16.2 per cent (n = 34) in semester 2 2019. It is important to note that the intra-curricular support service unit has a cap of n = 30 students per semester indicating that this service regularly met or exceeded full capacity.

Regarding general university services, scholarships were accessed at varying rates across the semesters with peaks and dips across the ten-year period. Scholarship uptake figures varied from 1.7 per cent (semester 2 2012) to 18.4 per cent of all Indigenous students receiving at least one scholarship in semester 1 2017.

Table 5 presents the proportion of students who utilised extracurricular support services across 2010-2019 (where data is available) at University Two.

Table 5. Indigenous student service usage, University Two, 2010-2019

Semester/Year	Per cent of students accessing the service (N)					
	Learning Advisors	Scholarships	PAC/PASS	ITAS	Student Success	Careers
Sem 1 2010	--	0	--	--	--	--
Sem 2 2010	--	10.3 (4)	--	--	--	--
Sem 1 2011	--	9.8 (6)	--	--	--	--
Sem 2 2011	--	10.8 (7)	--	--	--	--
Sem 1 2012	--	16.1 (15)	--	--	--	--
Sem 2 2012	--	10.5 (11)	--	--	--	--
Sem 1 2013	--	10.9 (12)	--	--	--	--
Sem 2 2013	--	6.5 (7)	--	--	--	--
Sem 1 2014	--	9 (12)	--	--	--	--
Sem 2 2014	--	12.8 (17)	--	--	--	--
Sem 1 2015	--	6.5 (10)	--	--	--	--
Sem 2 2015	--	9.9 (16)	--	--	--	--
Sem 1 2016	--	12.7 (26)	--	--	0	8.8 (18)
Sem 2 2016	--	8.2 (15)	--	--	0	9.3 (17)
Sem 1 2017	--	10.3 (21)	--	20.6 (42)	0%	13.2 (27)
Sem 2 2017	--	9.1 (18)	--	18.3 (36)	0	9.6 (19)
Sem 1 2018	3.7 (8)	30.1 (66)	0	16.9 (37)	1.4 (3)	11.4 (25)
Sem 2 2018	5 (10)	39.2 (78)	1 (2)	14.6 (29)	0.5 (1)	14.6 (29)
Sem 1 2019	3.6 (7)	24.1 (47)	1 (2)	16.4 (32)	1 (2)	11.3 (22)
Sem 2 2019	3.1 (6)	46.7 (91)	1 (2)	20.0 (39)	0.5 (1)	11.8 (23)

Like University One, the majority of Indigenous students at University Two did not access support services, with the exception of scholarships in semester 2 2019 where almost half of the student cohort had received at least one scholarship. Scholarships were consistently accessed by Indigenous students across the ten-year period, sitting consistently around 10-25 per cent. Data from University Two was also able to provide insight into Indigenous students access of careers services, which sat around 9-12 per cent of students accessing this service at least once. ITAS was the only Indigenous-specific support service offered at University Two. The proportion of students accessing ITAS ranged between 14.6 per cent of students in semester 2 2018 to 20.0 per cent of students in semester 2 2019. The proportion of students who access learning advisors, PAC/PASS and student support was substantially lower than other service areas, with rates as low as one or two students accessing the service per semester.

Summary of Indigenous Student Service Use

Findings from the mapping exercise indicated that the majority of Indigenous students did not access any Indigenous-specific or wider university support services at either university with some exceptions; almost one-third of Indigenous students accessed ITAS at University One, with the proportion of students accessing ITAS slightly lower at University Two (consistently around 20 per cent). Scholarship use was also relatively high, particularly from 2015 onwards and at University Two.

When analysing service usage in a university context it is important to note that there is no universal benchmark or targets on service utilisation among Indigenous students or any other cohort of students to make meaningful comparisons of whether a service is being fully utilised as expected. Furthermore, service use is optional and not mandatory therefore, some students may choose to not use the services available to them. This could be due to several reasons such as they are unaware of the services, the services have a cap in numbers, no need for the service, stigmatised views about accessing tailored services (Pechenkina, 2015) or they obtain the same type of services externally (e.g., private tutoring, external financial support). Further, specific services were limited in terms of how many students they could service (i.e., a capped number of scholarships available each semester). Thus, it would not be realistic to expect 100 per cent of Indigenous students to receive scholarship support.

Both universities funded the ITAS program through ISSP funds. University One updated ITAS eligibility in 2015 to enable all Indigenous students to access the program, which had previously only been eligible to students who were at risk of failing. University Two updated ITAS eligibility to include all Indigenous students in 2019. Hypothetically, these eligibility requirements mean that 100 per cent of Indigenous students could participate in ITAS. However, this would place a strain on ISSP funds which must also be split between IHEU staff salary and Indigenous-specific scholarships. No benchmarks were available for broader university support services including learning advisors and PAC/PASS. Again, this leaves open the question as to whether the rates of Indigenous student use of these services were lower than what would be expected. This points to the importance of mapping not only Indigenous students' use of extracurricular support services, but diverse student groups' use of these services.

RECOMMENDATION: Universities should benchmark Indigenous student service use data against that of other equity groups as well as non-equity student groups. Universities should also consider setting targets for Indigenous student participation in extra-curricular support services.

Relations between Indigenous Student Pass Rates and Support Service Use

Multiple regression models assessed whether Indigenous student pass rates were associated with their use of ITAS, learning advisors, PAC/PASS, or scholarships. These four services were selected for the regression analysis due to having the highest uptake among students (ITAS, scholarships) and due to consistency of data collected across both universities (Learning Advisors, PAC/PASS). Model fit statistics for each analysis are presented in Table A2 (Appendix B).

ITAS

Use of ITAS was significantly associated with pass rates in semester 2, 2018 and in semester 1, 2019 (Table 6). In both semesters, using ITAS was associated with significantly higher pass rates compared to not using ITAS. Table 6 also shows that, in semester 2, 2017, females had significantly higher pass rates than males. In addition, 'university' was significantly associated with pass rates across 2019 such that students from University Two had higher pass rates than University One. Student age was not associated with pass rates during any semester.

Table 6. Relations between student pass rates and ITAS use by semester, 2017-2019

	B (S.E)	95% CI (Lower, Upper)	P
Sem 1 2017			
University (0 = University One)	-.053(.040)	-.132 .026	.190
Gender (0 = male)	.064(.044)	-.023 .152	.149
Age	.002(.002)	-.003 .006	.461
ITAS (0 = no)	.037(.004)	-.050 .125	.393
Adjusted R2	.004	--	--
Sem 2 2017			
University (0 = University One)	.017(.042)	-.065 .099	.680
Gender (0 = male)	.164(.048)	.070 .257	.001*
Age	-.001(.002)	-.005 .004	.725
ITAS (0 = no)	.029(.045)	-.060 .118	.518
Adjusted R2	.026	--	--
Sem 1 2018			
University (0 = University One)	-.055(.042)	-.136 .027	.188
Gender (0 = male)	.058(.043)	-.027 .143	.182
Age	.001(.003)	-.005 .006	.819
ITAS (0 = no)	.076(.046)	-.014 .166	.097
Adjusted R2	.008	--	--
Sem 2 2018			
University (0 = University One)	.034(.043)	-.050 .118	.422
Gender (0 = male)	.047(.044)	-.039 .132	.285
Age	.002(.002)	-.002 .007	.312
ITAS (0 = no)	.113(.045)	.025 .202	.012*
Adjusted R2	.009	--	--
Sem 1 2019			
University (0 = University One)	.091(.039)	.014 .169	.021*
Gender (0 = male)	.055(.042)	-.027 .138	.189
Age	.001(.002)	-.004 .005	.791
ITAS (0 = no)	.166(.040)	.087 .245	.000*
Adjusted R2	.036	--	--
Sem 2 2019			
University (0 = University One)	.094(.039)	.017 .172	.017*
Gender (0 = male)	.064(.044)	-.021 .150	.140
Age	-.002(.002)	-.007 .002	.341
ITAS (0 = no)	.078(.043)	-.006 .162	.069
Adjusted R2	.017	--	--

Note: N = 383-411. * $p < .05$.

Learning Advisors

There was a significant association between Learning Adviser usage and pass rates in S2, 2019 such that students who used the Learning Adviser program had significantly higher pass rates than students who did not use Learning Adviser program (Table 7). Likewise, there was a significant association between 'university' and pass rates in S2, 2019, where students from University Two had significantly higher pass rates compared to students from University One.

Table 7. Relation between student pass rates and learning advisor use by semester, 2018-2019

	B (S.E)	95% CI (Lower, Upper)	p
Sem 1 2018			
University (0 = University One)	-.068(.041)	-.148 .013	.099
Gender (0 = male)	.060(.043)	-.025 .146	.164
Age	.000(.003)	-.005 .006	.862
Learning advisor (0 = no)	.162(.100)	-.035 .358	.107
Adjusted R ²	.007	--	--
Sem 2 2018			
University (0 = University One)	.016(.042)	-.066 .099	.699
Gender (0 = male)	.045(.044)	-.041 .131	.302
Age	.002(.002)	-.002 .007	.367
Learning advisor (0 = no)	.020(.108)	-.193 .233	.851
Adjusted R ²	.004	--	--
Sem 1 2019			
University (0 = University One)	.068(.040)	-.010 .146	.088
Gender (0 = male)	.063(.042)	-.020 .146	.134
Age	.001(.002)	-.004 .005	.786
Learning advisor (0 = no)	.096(.098)	-.096 .288	.328
Adjusted R ²	.006	--	--
Sem 2 2019			
University (0 = University One)	.083(.040)	.004 .162	.039*
Gender (0 = male)	.066(.043)	-.019 .151	.127
Age	-.002(.002)	-.007 .003	.392
Learning advisor (0 = no)	.182(.058)	.068 .295	.002*
Adjusted R ²	.013	--	--

Note: N = 405-411. * $p < .05$.

PAC/PASS

Attendance at PAC/PASS was only significantly associated with student pass rates in Sem 1, 2019 (Table 8). This finding suggests that students who attended at least one PAC/PASS session had significantly higher pass rates compared to students who did not attend any PAC/PASS sessions in Sem 1, 2019. University was significantly associated with pass rate in S2, 2019; students from University Two showed higher pass rates compared to students from University One.

Table 8. Relations between student pass rates and PAC/PASS use by semester, 2018-2019

	B (S.E)	95% CI (Lower, Upper)	p
Sem 1 2018			
University (0 = University One)	-.069(.042)	-.151 .013	.098
Gender (0 = male)	.060(.044)	-.026 .146	.168
Age	.001(.003)	-.005 .006	.845
PAC/PASS (0 = no)	-.024(.126)	-.271 .233	.846
Adjusted R ²	.001	--	--
Sem 2 2018			
University (0 = University One)	.022(.042)	-.060 .105	.596
Gender (0 = male)	.044(.044)	-.042 .131	.312
Age	.002(.002)	-.002 .007	.364
PAC/PASS (0 = no)	.104(.084)	-.061 .270	.216
Adjusted R ²	.002	--	--
Sem 1 2019			
University (0 = University One)	.079(.040)	.000 .158	.050
Gender (0 = male)	.061(.042)	-.022 .144	.151
Age	.001(.002)	-.003 .005	.670
PAC/PASS (0 = no)	.151(.070)	.013 .289	.032*
Adjusted R ²	.011	--	--
Sem 2 2019			
University (0 = University One)	.081(.040)	.003 .160	.043*
Gender (0 = male)	.071(.043)	-.014 .156	.103
Age	-.002(.002)	-.007 .003	.344
PAC/PASS (0 = no)	-.166(.123)	-.408 .076	.178
Adjusted R ²	.016	--	--

Note: N = 405-411. *p < .05.

Scholarships

Scholarships were significantly associated with pass rates in semester 1 2012, semester 2 2014, semester 1 2016, both semesters of 2018, and both semesters of 2019 (Table 9). All these associations were positive (i.e., receipt of at least one scholarship was associated with higher progress rates) except for in semester 1 2016 where receipt of a scholarship was associated with significantly lower pass rates compared to not receiving any scholarships. Table 10 also shows that females reported significantly higher pass rates than males in semester 2 2014, semester 1 2015, semester 2 2015, semester 1 2016, and semester 2 2017. Last, in semester 1 2018, being at University One was associated with significantly higher pass rates than being at University Two.

Table 9. Relation between student pass rates and scholarships by semester, 2010-2019

	B (S.E)	95% CI (Lower, Upper)	p
Sem 1 2010			
University (0 = University One)	-.010(.090)	-.188 .168	.914
Gender (0 = male)	.105(.090)	-.072 .283	.242
Age	-.006(.004)	-.014 .001	.082
Scholarship (0 = no)	-.208(.152)	-.508 .092	.173
Adjusted R ²	.013	--	--
Sem 2 2010			
University (0 = University One)	-.032(.087)	-.205 .140	.712
Gender (0 = male)	.038(.087)	-.134 .210	.661
Age	-.005(.005)	-.014 .004	.276
Scholarship (0 = no)	.203(.128)	-.050 .456	.114
Adjusted R ²	.006	--	--
Sem 1 2011			
University (0 = University One)	.034(.069)	-.102 .170	.623
Gender (0 = male)	-.202(.073)	-.164 .125	.789
Age	.002(.003)	-.004 .009	.450
Scholarship (0 = no)	.063(.092)	-.120 .426	.497
Adjusted R ²	.018	--	--
Sem 2 2011			
University (0 = University One)	.098(.068)	-.037 .232	.153
Gender (0 = male)	.041(.069)	-.095 .176	.554
Age	-.022(.004)	-.009 .006	.638
Scholarship (0 = no)	.018(.141)	-.260 .296	.898
Adjusted R ²	.006	--	--
Sem 1 2012			
University (0 = University One)	.087(.056)	-.024 .199	.122
Gender (0 = male)	.089(.060)	-.029 .208	.140
Age	-.001(.003)	-.007 .006	.834
Scholarship (0 = no)	.237(.060)	.118 .356	.000*
Adjusted R ²	.045	--	--
Sem 2 2012			
University (0 = University One)	.505(.061)	-.070 .171	.409
Gender (0 = male)	.033(.067)	-.098 .164	.623
Age	.003(.003)	-.004 .009	.427
Scholarship (0 = no)	.132(.112)	-.089 .352	.241
Adjusted R ²	.006	--	--
Sem 1 2013			
University (0 = University One)	.005(.057)	-.109 .118	.935
Gender (0 = male)	.057(.063)	-.607 .182	.363

	B (S.E)	95% CI (Lower, Upper)	p
Age	-.002(.096)	-.160 .217	.765
Scholarship (0 = no)	.029(.096)	-.160 .217	.765
Adjusted R ²	.011	--	--
Sem 2 2013			
University (0 = University One)	.088(.056)	-.022 .198	.118
Gender (0 = male)	.116(.065)	-.022 .198	.244
Age	.000(.003)	-.005 .006	.872
Scholarship (0 = no)	-.131(.151)	-.429 .167	.387
Adjusted R ²	.011	--	--
Sem 1 2014			
University (0 = University One)	-.025(.050)	-.123 .074	.624
Gender (0 = male)	.077(.057)	-.036 .190	.179
Age	.000(.003)	-.006 .005	.891
Scholarship (0 = no)	.129(.076)	-.020 .278	.090
Adjusted R ²	.003	--	--
Sem 2 2014			
University (0 = University One)	-.034(.052)	-.137 .069	.518
Gender (0 = male)	.119(.057)	.007 .230	.037*
Age	-.001(.003)	-.007 .005	.701
Scholarship (0 = no)	.161(.076)	.012 .310	.034*
Adjusted R ²	.013	--	--
Sem 1 2015			
University (0 = University One)	.092(.048)	-.022 .187	.055
Gender (0 = male)	.165(.055)	.056 .274	.003*
Age	-.005(.003)	-.011 .000	.066
Scholarship (0 = no)	-.066(.094)	-.251 .120	.486
Adjusted R ²	.044	--	--
Sem 2 2015			
University (0 = University One)	.060(.046)	-.030 .150	.189
Gender (0 = male)	.146(.052)	.044 .249	.005*
Age	-.005(.003)	-.010 .001	.099
Scholarship (0 = no)	-.003(.073)	-.147 .142	.969
Adjusted R ²	.029	--	--
Sem 1 2016			
University (0 = University One)	.012(.043)	-.073 .097	.784
Gender (0 = male)	.101(.049)	.004 .197	.041*
Age	-.003(.003)	-.008 .002	.182
Scholarship (0 = no)	-.119(.052)	.017 .221	.022*
Adjusted R ²	.017	--	--
Sem 2 2016			
University (0 = University One)	.080(.045)	-.007 .168	.072

	B (S.E)	95% CI (Lower, Upper)	p
Gender (0 = male)	.099(.051)	-.003 .200	.056
Age	.000(.003)	-.005 .005	.886
Scholarship (0 = no)	.049(.075)	-.100 .197	.519
Adjusted R ²	.010	--	--
Sem 1 2017			
University (0 = University One)	-.051(.040)	-.129 .028	.206
Gender (0 = male)	.065(.044)	-.022 .152	.140
Age	.002(.002)	-.003 .006	.465
Scholarship (0 = no)	.079(.051)	-.021 .180	.122
Adjusted R ²	.007	--	--
Sem 2 2017			
University (0 = University One)	.012(.042)	-.070 .094	.775
Gender (0 = male)	.166(.048)	.073 .260	.001*
Age	-.001(.002)	-.006 .004	.688
Scholarship (0 = no)	-.056(.071)	-.197 .084	.428
Adjusted R ²	.027	--	--
Sem 1 2018			
University (0 = University One)	-.099(.042)	-.182 -.015	.021*
Gender (0 = male)	.046(.043)	-.038 .130	.282
Age	.000(.003)	-.005 .006	.881
Scholarship (0 = no)	.185(.045)	.096 .274	.000*
Adjusted R ²	.035	--	--
Sem 2 2018			
University (0 = University One)	-.033(.043)	-.117 .052	.449
Gender (0 = male)	.030(.043)	-.055 .115	.483
Age	.003(.002)	-.002 .007	.230
Scholarship (0 = no)	.196(.041)	.114 .277	.000*
Adjusted R ²	.037	--	--
Sem 1 2019			
University (0 = University One)	.060(.040)	-.018 .139	.130
Gender (0 = male)	.059(.042)	-.024 .142	.160
Age	.001(.002)	-.003 .006	.617
Scholarship (0 = no)	.127(.042)	.046 .209	.002*
Adjusted R ²	.022	--	--
Sem 2 2019			
University (0 = University One)	.041(.045)	-.047 .130	.359
Gender (0 = male)	.070(.043)	-.014 .154	.104
Age	-.022(.002)	-.007 .003	.437
Scholarship (0 = no)	.145(.044)	.058 .233	.001*
Adjusted R ²	.034	--	--

Note: N = 139-411. * $p < .005$.

Summary of Multiple Regression Analysis Findings

Regression analysis found inconsistent evidence for there being a relation between Indigenous student's use of university support services and their pass rates. Scholarship use was the service most consistently linked to student pass rates. Scholarship receipt was significantly and positively associated with pass rates in seven out of the twenty semesters examined. This finding is consistent with previous research which highlights negative impacts of financial stress on Indigenous student success (Barney, 2016; Behrendt et al., 2012). There was also some evidence of ITAS use being significantly associated with higher pass rates. The shift in eligibility criteria around ITAS to include all students not just those who were at-risk of failing may account for these associations. PAC/PASS and Learning Advisor access were significantly associated with higher pass rates, albeit only for one out of the four semesters in which they were assessed.

When assessing the regression findings, it is important to note that the analysis was **not causal**. We examined whether each semester's pass rates were associated with service usage that occurred in the same semester. This presents several caveats when interpreting the findings. First, students may have accessed support services in the later part of the semester when a large portion of their grades had already been determined. Second, the assumption that service use would lead to higher pass rates was implicit in our regression modelling. However, it could be equally possible that low pass rates led students to seek out support services or that high achieving students seek out services to maintain their course success. Third, because a longitudinal analysis was not applied to the data, models did not assess for within-person effects of service use. Within-person (rather than between-persons) analysis would examine whether changes in an individual student's service usage (for example, moving from not accessing a service to accessing a service) was associated with changes in their pass rates. A within-person approach (e.g., repeated measures assessment, latent trajectory modelling) could also be used to examine the impact of service use patterns on student success trajectories across their university careers. Readers are cautioned against making an 'ecological fallacy' (Freedman, 1999) by assuming that relations between service use and pass rates shown here at the between-person level are similar at the within-person level. Indeed, relations between two variables can meaningfully and substantially differ based on between-versus within-person analysis (Hanmaker, 2012). Last, it was not possible to determine which teaching period a particular interaction with a service was relevant to, even if it fell between the dates of a particular teaching period. For example, a student may seek support because of having been moved to 'At Risk' progression status, which is in relation to the units they just completed. Likewise, a student may seek advice for how to manage their study load better going forward. Longitudinal analysis would also allow examination of time lagged effects, for example, examination of whether service use in semester one is associated with pass rates in semester two.

Study Two: Yarning about extracurricular support at university with successful Indigenous students

Methods

Data for Study Two was generated from two yarning circles and two one-to-one yarns with a total of 10 successful Indigenous university students across the two universities. In this context, 'successful' was defined as having completed – or being in the final year of – an undergraduate degree. Two exceptions to this rule were made to include a first-year undergraduate student and first year Master's student who showed interest in the study. Thus, the yarning circles were a combination of alumni and current students.

Recruitment

Participants were recruited through targeted emails and project flyers distributed through the IHEU networks at the respective universities. The targeted emails were sent to final year and alumni students, who self-identified as Indigenous in the university databases. Initially, the intention was to recruit up to 50 students for the qualitative study. However, institutional uncertainty and flux for the duration of the project resulted in several staffing changes in the IHEUs and variations in capacity of project team members. Further, the project Research Assistant (RA) accepted a position outside of academia during the qualitative recruitment period. This limited the team capacity to run multiple yarning circles across the research sites.

Participants

There was an even balance of participants between the research sites: with five participants from University One and five participants from University Two. The University One cohort included two graduates and three undergraduates. The University Two cohort included two graduates, two undergraduates and one postgraduate. The gender breakdown was the same for both universities with four women and one man in each cohort, with a total of eight women and two men in the study. The participants represented a range of disciplines including: law, psychology, primary education, secondary education, creative arts, animal science and biology.

Data collection

The yarning-circle methodology (Bessarab & Ng'andu, 2010) was selected for this study for several reasons. Firstly, as the participant group was focused solely on Indigenous students and the project team was comprised of a majority of Aboriginal² investigators, it was important to leverage a culturally endorsed qualitative methodology, rather than defaulting to a Western-based alternative, such as the traditional focus group interview. Secondly, prioritising communal and conversational data collection strategies in face-to-face contexts reflects traditional Indigenous knowledge sharing practices which focus on storytelling and connection. Thirdly, yarning allowed participants freedom to dictate the direction of the conversation, discussing aspects of the topic that were meaningful to them, rather than being overly guided by researcher priorities. This means discussions often branch away from the original focus to cover multiple and varied themes. The positioning of participants and researchers in a circle, which has no beginning or end, and no 'in front' or 'behind' encourages reciprocal dialogue between researchers and participants. Both spatially and

² The term 'Aboriginal' is the preference in Noongar Country, where the research was situated.

verbally, the investigators in a yarning circle are no more or less visible or important than other members of the circle.

Each yarning circle took place at the IHEU at participants' respective universities. Two One-to-one yarns were conducted with participants from University One who were unable to attend the yarning circle at the designated time and date. The one-to-one yarns were closer in structure to a traditional semi-structured interview. However, the interviewing investigators made every effort to allow participants to take control of the narrative, whenever possible.

Prior to the commencement of each of the yarning sessions, both the yarning methodology and the project aims were explained to the participants. The yarning circles were co-facilitated by one Aboriginal investigator and one non-Aboriginal investigator. The one-to-one yarns were conducted by an Aboriginal investigator, and the non-Aboriginal RA, respectively.

The following questions were posed at the beginning of each yarning session as discussion prompts.

- How have you used Indigenous-specific and/or general student support services?
- How do you view the relationship between student support services and degree progression and/or completion?
- What was your experience/reaction when university support services were offered online?
 - During Covid-19 shutdowns (if you were enrolled at the time)?
 - During your degree (if you were already graduated)?

If the yarning veered away from themes of support and/or university for extended periods of time – or there was a lull in conversation – investigators gently guided the discussion back to prompts that had yet to be explored. In the spirit of yarning, the discussion evolved in unexpected and insightful directions which not only responded to the prompts but included salient themes about the nature and perception of support and success at university that were participant generated. The yarning sessions were audio-recorded, transcribed and deidentified for analysis.

Data analysis

Prior to analysis, the yarning circle transcripts were sent back to the participants offering them opportunity to check that they were comfortable with the data – and allowing them a final chance to remove any parts they were not comfortable with, prior to deidentification and analysis. There were no requests to edit or change the discussion.

Analysis of yarning transcription data was a combination of thematic and narrative analysis, to enable both descriptive and interpretive analysis of the student-led conversations about support at university (Braun & Clarke, 2006). Where thematic analysis is performed to note patterns and repetition in – and between – qualitative data sets, narrative analysis is more acutely focused on the process of constructing meaning through stories, acknowledging the analytical significance of context, word-choice, and structure (Georgakopoulou, 2006). Thus, according to Shukla et al (2014, p.6) “thematic analysis is better suited than narrative analysis to providing broad overview of a dataset, while narrative approaches allow an extended focus on particularities, including particular cases”. The addition of narrative analysis allowed for deeper investigation into the ways in which themes were expressed, adding deeper insights into both the individual and collective stories in the yarning data. The benefit of this dual analytical lens was that narrative analysis is always interpretive and places the meaning of themes at the forefront of the analysis. Thus, in the context of the small qualitative dataset, themes were extracted based on significance and depth, as opposed to surface-level frequency alone; the dataset was too small to make claims of thematic saturation or generalisability outside of the sessions themselves.

Following an iterative process, the combined analysis was conducted over three phases. Firstly, three Aboriginal and one non-Aboriginal investigator read the deidentified yarning transcripts several times, noting thematic repetition and independently coding this into potential themes. Once the individual analysis reached saturation, investigators met to discuss points of similarity and difference and came to a consensus on salient themes, relevant to the research questions. The data was then re-coded under the collaboratively generated themes, noting the frequency and consistency of each theme across the datasets (Braun & Clarke, 2006), as well as discussing the underlying meanings attributed to the themes in the way they were expressed (Riessman, 2003). The Aboriginal research who co-facilitated the yarning circles provided additional review of the qualitative findings to ensure participant remarks were interpreted in a way consistent with an Aboriginal worldview.

Findings

The role of IHEUs and Indigenous-specific supports dominated the yarning discussions, with little to no unprompted references made to university support functions outside of the IHEUs. There was some dissonance between the research sites as to the efficacy of Indigenous-targeted support in terms of the students' study journeys. Participants from one site attributed most of their positive support experiences to IHEU staff and services, whereas participants from the other site expressed mixed feelings about the support offered within the IHEU. These divergent narratives will be expressed within the thematic analysis, in the form of individual participant quotes. However, the small participant pool at each site means any statements as to individual IHEUs' strengths and weaknesses were subjective and determined by leaders within the yarning circle discussions. This means no comparative between-site conclusions could be inferred from site-specific data and, as such, the presentation of findings does not include site comparison.

Overarching conceptual considerations

Narrative analysis of the yarning circle data found two layers of meaning that informed the participants' perception and experiences of support and success at university. These included the conceptualisation of **'support' as relationships** and **'success' as quality of experience** (e.g., wellbeing). Conceptual threads running throughout the dataset spoke to meanings that participants attributed to notions of support and success that did not necessarily align with sector, institutional or ISSP definitions. These alternative conceptions are outlined below and will appear as threads within the narrative thematic analysis.

Support as relationships

The first narrative thread that was present in almost all contexts was that the quality of support was measured in terms of meaningful, trusting, interpersonal relationships. These support relationships did not exclusively occur between Indigenous staff and students. Rather, students indicated positive experiences with non-Indigenous staff *as long as* the staff member listened to their concerns and had the student's best interest in mind. Importantly, this finding should be taken in line with the finding that the majority of students interviewed had actively accessed the IHEU where they were exposed to Indigenous staff and students and received cultural support. Thus, relational support did not necessarily have to come from Indigenous staff members *if* students had other opportunities to celebrate Indigenous success and culture on campus. Relational qualities of support services were a superordinate theme that dominated the majority of all discussion threads – and informed the discussions of support that enabled or inhibited the university experience. For example, statement such as *“I really felt like I needed personal [support] – somebody talking to me and somebody checking in (P10)”* and *“somebody to talk to about homelife that's not academic-related, that would help appease worries or just make it more smooth coming to uni (P6)”*.

Success as wellbeing

The second overarching narrative thread in the analysis was in the definition of success that emerged in the yarning data. Rather than focusing on grades, units passed or degree confirmation, participants characterised success at university in terms their wellbeing, relationships, sense of belonging, and ease-of-study. Success may have been interpreted in this way because passing and completion were self-evident for this high-achieving student cohort. However, it is important to note that externalised metrics of success imposed by the ISSP were not the first definition of success that students reached for. Noticing this pattern, yarning circle facilitators guided the discussion towards the relationships between wellbeing and academic success.

Narrative and thematic analysis

The interpretive element of narrative analysis means that the findings and discussion of yarning circle data are integrated. The presence of each identified theme is evidenced through descriptive data analysis, with the addition of exploring the dominant narrative threads of support-as-relationships and success-as-wellbeing that ran throughout most of the discussion. Thematic analysis from the yarning data offered insights into aspects of university learning that participants felt supported their learning at university. An overwhelming theme was the significance of interpersonal relationships in the context of support. This theme was underscored by narrative findings that effective support is determined by the quality of relationships within the university, and stories about positive interpersonal relationships were frequently focused on supporting student wellbeing, as a proxy for success. Within the dominant relational narratives, there were smaller, yet significant, themes of being attributed to students' personal attributes, a sense of belonging, and the role of instrumental support in the form of IHEU facilities, scholarships, ITAS tutoring and pre-university orientation and preparation courses. Sub- themes related to challenges, included financial insecurity; delayed access to services; a lack of cultural awareness or sensitivity amongst some teaching staff; a lack of clarity around the role of Elders and cultural support; a lack of career guidance towards the end of degrees; and perceptions of nepotism and cliques within IHEUs.

THEME 1 - Positive interpersonal relationships with university staff and peers

When prompted to discuss elements of support that enabled their success at university, the participants overwhelmingly referred to specific university staff members and peers, most of whom were referred to by name. In fact, individuals' names were mentioned upwards of 80 times across the small data pool. These individuals were a mix of staff and sometimes peers, with the Student Support Coordinator in one of the IHEUs being mentioned by name more than 30 times in the context of discussions of effective support. Individuals were mentioned so often as key enablers of study success, that they were grouped into the following sub-themes based on their various roles in the university: *IHEU staff, academic staff outside of IHEUs, and peer support*. Conceptualising support in the context of interpersonal relationships with named individuals was consistent across both research sites.

Professional and academic staff within IHEUs

Participants from both research sites named individual IHEU staff members – both academic and professional – as being positive supports at university. Further, stories of these individuals conflated instrumental, referential, social, and emotional support into descriptions of people. Professional staff within the IHEUs were described with a solid emphasis on social and emotional wellbeing support, as well as being important mediators or translators between the student and the university.

P4: I mean [NAME], he's such a great support for me, and [NAME], obviously being an Aboriginal person as well. So, that's so helpful. And even for them to come into the room now and then just to check on you, because **they're everyday people just like us, and they would have been through the same thing as us. So, why not come in and say, "are you going okay with it?"**

P6: [NAME], yeah, anything you need to know, scholarships, enrolments, all the underlying stuff that's not academic content involved, she'll guide you or tell you where to go... **She helps you just overcome any barrier that's stopping you to focus, that's taking away your focus from your studies ... she has such a wealth of knowledge of how the university works.**

P10: [when I need help] I go to [NAME] or [NAME] ... I never remember the title (support role)... if I had to go into a meeting or something, they would attend the meeting if I wanted them to... So, I talk to them before and tell them what it is I want or what it is that **I'm confused about or something and then they will help me – if I couldn't – if I'm in the meeting and I can't talk to them, they would just ask the question for me.** And help out even with Centrelink I've had PERSON 1 help me with that.

P2: [at graduation] [NAME] fist pumped me on stage, and I remember that was so cool, because he was the first Aboriginal person at the uni, at that level, that I **felt had my back.**

Positive references to academic staff in the IHEU echoed the holistic, interpersonal descriptions of successful support provided by people in professional roles, with some references to family-like relationships.

P6: [NAME] is awesome for writing support letters and references, and **she's really open** to hearing of my experience also for studies ... she's been there, and she knows how to – well, she can let me know what I need to do ... [NAME] is [also] so supportive ... it feels good when she talks about you, or she'll say – she'll be so impressed, or she'll just say such endearing things, and it makes you feel good. Like, you didn't think that you could do this, or you didn't think that what you were doing was worthy of such praise, and just makes it feel personal, like she really believes in you and that she's super proud. And she feels – I think, or I'm pretty sure, she feels like she's contributed to that, which she totally has. **So, it's like we're like her children kind of thing.**

P1: I found [NAME] and then built a relationship with her, and then she was like "I'm not doing anymore tutoring. With me, you are just exclusive throughout your whole degree." So, I was just lucky in that instance, where she just refused anybody else, and just kept that going. And she'd been working with [Student] and [Student] as well. So, she'd already started in an Aboriginal space, and kind of was just like **"no, we'll just stay connected, and go all the way through."**

P7: I found that I built really good relationships along the way with a lot of my ITAS tutors. I can still talk to [NAME] a lot, me and him have a fairly good personal relationship now where **I can talk to him about a lot of problems at uni** and ... [NAME] really seems like a good one as well, **she seems really positive and outgoing and seems to want to push you.** ... [NAME], I've still got a good workshop relationship with her and I go and see her, and **she got me through a couple of pretty difficult times at the start.**

Q: Academically or -

*P7: **Personally.** I had a surprise pregnancy and that threw me during the semester ... and she was really, really good support role for that because she went through the same thing when she was doing her undergrad.*

The significance of holistic relational support was further emphasised in a yarning circle discussion about the IHEU at a university that was not one of the study sites, but that two students had previously attended:

P2: ...you can walk straight in there, you don't have to knock on the door, they [IHEU staff] come and have lunch with you, you see them walk in and get their coffee. It's so accessible.

*P5: But one thing that they have that I love, and every time I think of [other IHEU] I think stress-free ... They give you the \$2,000.00 scholarship – **they do it for you while you're sitting there, so you get to see it yourself how it's done.***

The significance of holistic interpersonal support to perceptions of a good university experience were also expressed in stories of the absence of such support:

*P5: There's no guidance, **there is no-one that gives you that moral support,** "hey you know what. I've got this person, I've got that person, I can send you here, I can do that for you."*

*P2: What's even better, which I think is not how we do things, **call me in for a coffee, tell me I did a good job.** Don't send me a letter two months after I've finished, with \$100.00 in it.*

Discussions of ineffective support in the yarning circles also included interpersonal and relational aspects; with poor levels support being equated with issues such as not listening, not paying attention, not being available, not remembering previous interactions, and not personalising communications, as the following excerpts show:

*P5: The support services were dismal – there were no support services. There was a communication breakdown between students and staff. The same staff that we have today, were there then, but they're so much better now, because **they've got a different person at the helm, and that helps.** And we now have a more productive communication with them. **We can approach them; we can have a laugh.***

Finally, there was a powerful narrative for the significance of outreach – and for people to go to the student, as opposed to the student having to ask for help:

*P1: I had the induction ... **she had to actually call me to actually make that appointment and get me there.** When I first started, I was, I don't know where I'm going. So, she was brilliant.*

*P4: So, **why not come in and say, "are you going okay with it?"** And obviously you're going to say yes, even though you're not ... if you want to ... have a talk, obviously they're not going to know that, and obviously you're going to hide that. But it's finding that kind of balance there.*

The findings regarding support offered from within IHEUs were strongly related to staff who had sound institutional knowledge, as well as being willing and available to offer whole-of-life support by helping students solicit supports both inside of and external to the university; to act as mediators between the student and broader university supports, such as Equity or Counselling; who reached out to students to check how they were going; and who were genuinely invested in individual students' wellbeing and journeys for the duration of their

degree studies. One university had an Indigenous student support coordinator who appeared to fulfil dual roles of administrative and pastoral care for students, both within and beyond the university. This person was repeatedly referred to by name (over 30 times in the data from that site) as being a crucial support in terms of both wellbeing and university studies. One participant summed up the experience of support in terms of this person:

*P7: I'm coming from a place where I have utilised the [IHEU] services but I think ... that counselling, especially, **like it's not [NAME]'s position, but she's one of the best people to talk to that I've ever met.** Just the support that IHEU I feel is enough, it's like a family pretty much. It's enough to get you through the mentally tough times.*

RECOMMENDATION: Appoint holistic, Indigenous student support coordinators, who prioritises individual student needs, pastoral care, and whole-of life support to Indigenous students

Academic staff outside of IHEUs

When support was discussed through relationships with individuals, academic staff outside of IHEUs were referenced as examples with equivalent frequency to those within IHEUs. In these examples, individual characteristics, pastoral care, patience and maintaining a relationship over time were significant, as was their attention to students' wellbeing. However, there were also concerning stories as to Indigenous students' experiencing discrimination and discomfort in classes and curriculum activities.

The following excerpts from the yarning circles illustrated good practice in terms of Indigenous student support: *P6: Yeah, this old dude, I can't even remember his name, **he was so sweet and nice**, and he'd been here for 50 years or something. My sister graduated about 15 years ago from here and he taught her as well... he was really cool, and you could just go there and ask questions and he'd put it on a board, like a whiteboard, and break it down*

*P10: For my degree, for the whole of first year, I think two units of second year – I had one unit coordinator... And so, he got to know us pretty well and understand ... For example, I have a twitch so he would alter an assessment ... and **he'd always encourage you to go see the GP or the counsellor or Equity if that's what you needed.***

*P9: I talked to him for about an hour and he didn't once say "look, off you go", **he did double-check that I was going to see other support services for wellbeing** and that sort of thing then he sent me an email later like he was really great, really appreciated his support.*

*P7: So, my Academic Chair's been really good ...Her door's always open when she's there. **She remembers things about you as well** ... I dropped in and I was like "oh can I set up a meeting to just work out the rest of my degree? ... She just goes "oh there's no time like the present, sit down" and we went through it ...So, she's helped a lot to sort out where I've got to go.*

*P2: The non-Aboriginal lecturers. Because they see something new, that you don't see in yourself, that's what it is for me. **Even after uni, I talk to all of them.***

P5: ... it's the lecturers. They make you; they want you to succeed. And my professor in law, he's an ex-barrister – he was my driving force ... amazing.

*P9: Yeah, great like I really liked talking to [NAME] and it was a really nice quiet study place, and **he was just really supportive like if I'd come in and had a problem or just had a stressful day he would just be like "I'll make a cup of tea and sit and study or whatever you want to do"**.*

*P7: I found when [NAME] was there it was really, really good for student support. **I'm not sure if that was even part of his job role and his academic support was top shelf.***

Relationships, wellbeing, and personal care were emphasised in references to good support from academics outside of the IHEUs. Most positive references of effective support outside of IHEUs, which were unprompted, referred to academics – not counsellors or general university student support officers. The only exception was one participant's discussion of the help offered to them from their First Year Advisor, which was a pastoral role allocated to offer students extra-curricular support within each discipline area at the university. Discipline-specific pastoral roles have been since cut from the university. This sub-theme leads to the following recommendation:

RECOMMENDATIONS: 1) Provide adequate training and workload allocation to teaching academics so they offer personalised pastoral and administrative support, including wellbeing check-ins and referrals as part of their role. Or 2) Ensure there are visible pastoral support roles in discipline areas to supplement the support capacity of academic staff. Do not leave this type of support to chance, make it intentional.

While there were several references to positive relationships with academic staff outside of the IHEU, the yarning sessions at both sites also included stories of uncomfortable situations and encounters with academics, most of which evidenced a concerning lack of cultural awareness and cultural sensitivity in certain classes and units. Non-Indigenous academics' discomfort in teaching Indigenous content has been documented in the research literature (Bullen et al., 2021) as well as racism and a lack of cultural safety in universities (Rochecouste et al., 2014). Even more concerning, this occurred within units teaching topics on intercultural awareness and Indigenous perspectives. These stories are summarised in the discussion below:

P8: So, I did an Aboriginal unit, you do it in your third year in Education and the lady who is not Aboriginal, she started by saying that but then when she found out I was Aboriginal I became like the – what's that like a soundboard like I just became that person that she'd bounce off of in that class and it's because I think she knew that there was an Aboriginal person ... I was singled out. I think we talk about it all the time at [IHEU] just how you're ... I do remember that as soon as she found out I was Aboriginal she wanted to single that out.

A student from the other university had a similar experience in the same unit, which is mandated in the national education curriculum.

P2: ...we had a 'teaching Aboriginal students' unit, and I was taught by a non-Aboriginal academic, and I was the only Aboriginal person in that class, and that was a really horrific experience for me ... I don't know if there's any pull around that, as to like what you could do ... people look at you to answer their questions, as the only Aboriginal student.

P7: I've been in [Aboriginal Studies] units and I remember a specific incident where we were looking at the words to the Australian national anthem and I said

“as an Aboriginal person I find it just offensive and trite” from “young and free” talking about incarceration rates and stuff like that. The lecturer sort of just looked past me and went “does anybody have a[n opinion]” – yeah, just didn’t even acknowledge the fact that I’d just spoken.

P1: I did a cross-cultural class unit, and it was taught by a Wadjela [White in Noongar]. But she spoke into so many different cultural spaces, which I found really problematic. ... We had to do a presentation, and I did it on teaching cultural learning. And she actually pointed out certain things that I should have actually included in that, which I was just like, “that’s it, I don’t even think you should be marking this.” Do you know what I mean? And then when I spoke to her about it, she was quite defensive about it ... I even lined-up other [Indigenous] people to come in and co-lecture with her, for future reference, and she was just not in agreeance. She was like, “no, this is cross-cultural, therefore I can speak into this space.” I was like, okay.

P1: And another lecturer in, it was an individual differences unit, I think it was the fourth week, everyone talked him up. However, got us to read an article on how people had been studied based on the colour of their skin, and whether they were smart or not, I think it was in Africa or something. I was irate. I was really upset that week, I was trying to speak to him about it, and he’s like “it’s something that you just need to sit with, blah blah blah”. I was like, well where’s the safe space, where’s the heads-up before we read something like that? This is really kind of toxic research ... there was no support provided to any people that might have been affected within that week.

Concerningly, although perhaps not surprising to Indigenous academics working in the sector, these stories unveil the racism that persists in university curriculum and pedagogy. Narratives of being singled out in classes as the ‘spokesperson’ for all things Indigenous are apparent in much of the qualitative research of Indigenous peoples’ experiences at university (Fredericks et al., 2011) which was evidenced again in this study. Further, a lack of awareness amongst non-Indigenous academics teaching Aboriginal Studies or cross-cultural units needs to be addressed to avoid causing inadvertent trauma for Indigenous students – especially when there are no support mechanisms in place to help students who might be triggered by academic content which references racist perspectives. These stories would be circumvented if Indigenous academics were appointed to teach across a variety of disciplines. Likewise, universities have a responsibility to ensure non-Indigenous staff are appropriately qualified to teach Indigenised curriculum (Bennett et al., forthcoming).

RECOMMENDATION: Mandate professional development of non-Indigenous academic staff teaching units with Indigenous and/or cross-cultural content in terms of Indigenous cultural awareness and sensitivity. Conduct regular Indigenous-led audits of Indigenous and cross-cultural curriculum content to ensure it is culturally safe. We also point to and echo the recommendations for non-Indigenous staff development laid out by Bullen et al., (2021).

RECOMMENDATION: Ensure universities have an Indigenous employment strategy that effectively increases recruitment and retention of Indigenous academic staff to develop and teach Indigenised content. Increased Indigenous staff at universities is crucial to ensure that existing Indigenous staff, particularly academic staff, are not over-burdened with demands for capacity building for non-Indigenous staff.

Peer support

A final important sub-theme in terms of supportive relationships at university, was the relationships with peers – particularly other Indigenous students. This significance was largely expressed through a desire to connect with other Indigenous students within degrees and IHEUs more generally.

P5: ...had I known that [NAME] and I were in the same class that year, I would have happily gone “hey, let’s hook-up. Even if it’s online, it doesn’t matter, once a week, once a fortnight, it doesn’t matter.” There was no support system to say this person is in your class, let’s try and connect you.

P1: You literally had to bump into people, to know that there were actually other Aboriginal students within that space.

P2: I didn’t meet any other Aboriginal students my entire time, through my degree, that were doing a [MAJOR]. And again, I would have loved that.

P8: Uni Games ... the feedback I got from students – I’ve never been to one, but I know that they love it, hanging out with other blackfellas.

RECOMMENDATION: Provide multiple and ongoing opportunities for Indigenous university students to network and socialise, within and between universities

THEME 2 - Students’ individual attributes and experiences

While interpersonal relationships were the most dominant theme in terms of support, when prompted to discuss what enabled the students’ success in terms of persisting at university for the duration of a degree, individual attributes and experiences led the responses, which are evidenced below:

P6 ...my son, he was getting in trouble and then he got arrested or got charged and ...I couldn’t tell him what to do, so I thought well, I can’t control that, can’t do nothing now that he’s in there, so I’m just going to work on myself and be an example for him.

P9 I think for me it was stubbornness. Somebody told me I couldn’t do it and I went “okay, here’s a point to prove” and so I think for me it was a lot of stubbornness ... [also, I have had] withdrawn from uni I would have had to move, I had so much other stuff that was set on me being at uni that it was just easier to just fight through and keep going.

P4 You just keep pushing on, you just keep pushing on, because you know you’ve got this deadline. And you’re meeting up with your tutor once a week, then you’ve got to meet up with your supervisor, then your professor, then your lecturer. So, there’s all these things that are on your shoulders, you know you need to keep pushing, and keep pushing.

P7 I think it was mainly my passion for what I’m doing. I find that even when I’m on holidays I’m reading journals and stuff like that.

When asked about how students met the success metrics of units passed and degree completions, participants referenced their resilience, persistence and passion which suggested they were determined to keep going in spite of challenges. This response raised the question as to whether the success of the participant group was due to their

personalities, as opposed to institutional support efforts. If this was the case, then there was a concern that Indigenous students who have different personalities may not stay the duration of a degree, and thus IHEUs and universities are not equitably supporting students with diverse wellbeing and support needs. This led to the following recommendation:

RECOMMENDATION: Future research into the enrolment-completion gap needs to focus on understanding the experiences of Indigenous students who have withdrawn from university and those who are struggling to progress through their degrees. Accessing the stories of students across the spectrum of 'success' will enable a comprehensive analysis of the role of institutional support strategies and progression and completion trajectories.

THEME 3 - Sense of belonging

Intersecting with themes of interpersonal connection, especially with Indigenous people at university was an overall theme related to a sense of belonging within the IHEU community. This theme referred to a sense of ownership over the IHEU, and the feeling that there was a community of people on campus who were there for support.

P10 I'm always here and I always see everybody here and I know what everybody here can help me with and what they know. So, I can go to – I know that if they can't help me with it, they can at least find me or direct me to where I need to go.

P6 It's a feeling of belonging, like this is our area, not exclusively, even though it kind of is exclusive for us. We've got the printing, well, the printer room and the computer room, the kitchen facilities, like that belongs to us, but it's - we feel like we belong here.

P3: being closer to the team was really nice... [they] would come and see us, see if we were all right and everything... I noticed a big difference in just the energy of the kitchen and the spaces that we have now, and the computers.

Sense of belonging was also expressed as an absence or lack – a desire for a stronger campus-based Indigenous community, where both students and staff look after one another was also of clear significance. Stories of not fully belonging in terms of the IHEU and also in terms of being off-Country are included in the following sub-themes:

Nepotism, cliques, and feeling left out of IHEU communities

P5: Then you've got rural students. And the real disconnect was the rural students. So, a lot of the kids, especially the older ones that have been here – I was bringing in food for these kids, I was making stews and doing lots of other things and bringing them in, because kids were starving. They had no support here.

P7: Yeah, that was a very big one for me at the start. I think it was also a lot of my anxiety stopping me from talking to people and stuff like that, but I did feel a bit like an outsider, I guess, coming in, going oh I don't know anybody here and I guess it's taken what, three years and I pretty much feel like I'm family now.

P2: And I feel like, I don't know if it's still like this, but a lot of it was cherry-picking. And I feel like I can that it was quite often I was cherry-picked ... I got

picked to sit on the board at the table, all this kind of stuff. Which is fine because I was picked. But what if I wasn't?

P5: So, when I've been here, particular people played students off each other, without them even knowing. And that's what happened in my case, with a couple of people here. And it's not the students' fault, at all. We didn't know what was going on. So, it's favouritism – nepotism was rife. I wrote letters to the senators. It's rife, and it's not okay. We're supposed to be here to further our education, not be played against each other.

RECOMMENDATION: Focus on creating a community of practice for Indigenous students on campus, bringing together Indigenous students and staff in informal and formal settings. Intentionally address cliques and have strategies in place in the IHEU to help new students feel welcome and included – don't leave this up to students, alone, as this is not their responsibility.

Another interesting narrative thread that was related to a sense of belonging was identified in perceived separation between IHEUs and university communities. The separation was both geographical and conceptual and had both positive and negative elements for the participants:

P2: Before I even started this, I was in high school, I remember coming here and doing like, "this is the centre, this is where you can come," which was great. But we only had access to this centre – it would have been good if we could have accessed the whole university. Because for a lot of us, we're like the first in our families to come here, and it's such a new space to come here, and then you've got to navigate the different schools around the university. So, if we could have some kind of access to that.

P6: Like, we're down here [IHEU] and there's not much awareness of us up there [University], and it'd be nice for us to be seen or for us to be represented up in the mainstream ... it's a different kind of feel like you're belonging ... up there it seems fake because you don't really know the people, or I haven't really developed those kinds of relationships with my classmates, I'll just see them once a week, whereas you see everybody here all the time in the printing, in the computer lab.

P6: [Maybe] if there were more Aboriginal lecturers or units. Or maybe some, I don't know, some signs or some kind of artwork or stuff on [Main Campus], something where [Indigenous students] can connect to and identify with to make them like oh yeah, this is our turf. Not our turf, but we live along here, and we will tap into that knowledge or that historic passing on of knowledge and learning and a space to impart knowledge. That might make Aboriginal people feel more welcome here.

P10: I know for myself I always try and get the help here at IHEU first and see if somebody here can help me ... If I needed to go to the [university] people for something I would go to see somebody here [IHEU] and they usually are the ones that call up and talk to them on my behalf, so I don't actually go see them. I guess I don't feel comfortable talking to them because I don't know them, and I just struggle to talk to people I don't know, about I guess my studies all my life or something.

Some participants wanted a greater presence in the whole-of-university community, as a way to affirm their place within the university – and to remind the university of Indigenous sovereignty and ownership of the land it operated on. Others enjoyed the safety provided by the physical and administrative separation of the IHEU and appeared anxious when thinking about interacting with the broader university community.

RECOMMENDATION: Promote Indigenous visibility in university events, artwork, and signage within university campuses. However, it is important to maintain cultural and physical separation between Indigenous and mainstream communities, as IHEUs are often needed as respite from experiences of discrimination in the broader university.

Cultural belonging and being off-Country.

Another important feature in discussions of belonging at university was related to cultural support and advice on campus, including the role of Elders and being off-Country.

P1: I think the Elders were really great being there – I just felt like none of that was ever communicated, and so they were just sitting in a room. So, Auntie would come, and would just sit in the room for a half a day or something, and then wander out. They were perfect opportunities for us to actually connect as a group and bring people together.

P4: Auntie's here because she's one of the language consultants. I deal with Auntie a lot, because of what I'm doing ... But I think that's where it stops, because I see a lot of young students come through [and not being consulted]... So, I'm not quite sure what's happening there...

P2: We had an email saying, "Uncle will be at lunch." That's all we got.

P5: See for me, I never connected with the older people, because one, I'm not from here, I'm from the Kimberley. So, there's an automatic block there for me already, it's like "no, that's your culture, this is mine from up there." So, I don't engage with the Elders here. I respect them, I say hi, and have a conversation – I see them, but I don't engage. Because it's not my world, and it's not my lineage.

P9: My people aren't from WA and it was one thing I did notice when I came up here is like everybody kind of knew everybody in [the IHEU] and I actually found that a little bit overwhelming because I felt like at times an outsider. Like I would be having lunch with somebody and then somebody else would come in and they'd be talking about how they'd all got together on the weekend and I was kind of being shut out of the conversation a little bit and that could be a little bit – I don't know.

P4: Even as a suggestion ... maybe finding out an Elder from the Kimberley that's working in universities, that can come over and talk, you know what I mean ... Because that's the thing I find, I'm a Noongar-Yamatji man, but I find that. And my children, they're from the Kimberley, from my ex-partner. But I find that for [P5] because I see her on a regular basis here, I'm thinking where's her connection but, where's her yarning circle?

The discussion around the lack of cultural connection students felt when they were studying off-Country, and the confusion around the role of Elders on university campuses, led to two recommendations.

RECOMMENDATIONS: 1) Create a community of practice that is intentionally inclusive of all Aboriginal and Torres Strait Islander students. Take particular care to include students who are off-Country 2) Be intentional and clear as to the role that Elders on campus play for students. Clarify if they are available for cultural consultation and support, or whether they perform a strategic role that is not student facing.

THEME 4 - Instrumental support

While much of the yarning discussion covered interpersonal, cultural, and communal elements of support, the significant role of practical, infrastructural, and especially financial, support was also discussed. Pre-university orientations, inductions and enabling courses also featured in discussions of Indigenous-specific practical support for degree studies. The communal kitchens and computer rooms at IHEUs were referenced frequently, one student stated that *“that computer room has saved my arse a lot of times ... I don’t have an internet connection at home, I can’t get one where I’m living so it’s been paramount to my studies [P7].*

However, discussions of financial support dominated service support discussions. This echoed previous research findings that financial concerns form a major challenge in Indigenous students’ university journeys (Asmar et al., 2015).

P4: I’ve got a family, and then just making ends meet is another thing. And I do cleaning three times a week, and then you think to yourself, and you’re pressuring yourself, why am I doing this? And I keep telling myself, it’s because of culture. That’s the only reason why I’m still here.

P1: Well, it doesn’t say how many spaces are available [for financial scholarships], you just put your hat into the ring and hope for the best. But if we’re working fulltime, and then applying for an equity scholarship, then obviously it’s going to show that we’re financially off. However, I wouldn’t minded not to have had to work.

P2: [to P1] Yeah, it’s a catch-22.

P6: It was really stressful because I was going to lose the scholarship if I didn’t do it in time, and the Student Services weren’t willing to talk to outside people, which was the scholarship mob, because they just wanted to have an invoice of the fees.

P5: affording books, which was the biggest problem for me, it was so big that it extended my stay at university. So, I had to choose over a book, or putting food on the table – that was appalling ... we’re only getting \$40.00 or \$50.00 in printing, and a \$100.00 book voucher – that’s appalling. And that’s the reason why Closing the Gap isn’t meeting its markets ... I kid you not, this one book cost me nearly \$300.00. Now I need four books sometimes for one unit, where am I going to get that from? I’m a high distinction student when I have books. When I don’t have a book, I’m barely getting a distinction in the in the 70s. That’s not good enough. I’m not here just to pass – I’m here to do myself a service, my daughter a service, who’s been here for five years with me, and my community, and beyond that. It’s not just the Aboriginal community that I want to do a service for, it’s for people that are so disadvantaged in our community, they have no-one.

P2: There was also this really strange thing that started I think about my third year, was if you got a HD or a D, you got money ... It was really strange... As a teacher, I would not do something like that. I don't believe in that kind of stuff ... what I took from it as a teacher, was that they've got money to use, and they don't know how to use it... And if you want to use your money properly, give that to me at the start so I can buy something.

Another obstacle in terms of instrumental support was significant delays in receiving money for books and in getting an ITAS tutor for units. The obstacle here appeared in the form of frustration at bureaucratic processes which meant students were not able to access financial or academic support until well into the teaching semester:

P6: It's kind of annoying, but I can't complain... Like yay, you're getting the money, which is awesome if you do get it, but it's already week four when you receive it and you kind of need the money to get the books week one or before...

P5: To get a tutor in, in Week Six/Seven, is just ridiculous. All these things should be prepped and ready to go, months prior.

P2: I only asked for tutoring once in my third year, and it was the worst experience, and I never did it again. I didn't even go to my first lesson thing, because I booked her, and she was not free for three weeks, and by then it's Week 5.

P2: Yeah, by then you're either right there in the middle of your assignments, or the assignment is done. And that's your 40% already gone

A clear recommendation for offering adequate financial support, is articulated below:

RECOMMENDATION: Ensure that financial support scholarship and ITAS tutoring is processed in the first two weeks of teaching period (to allow students to finalise their enrolment status), prior to initial unit assessment rounds. Further, consider basing financial support for books and printing on unit requirements for the semester, as opposed to issuing the same amount per student, regardless of their unit costings.

In terms of IHEU support, participants spoke highly of pre-university induction, orientation, preparation units and enabling courses. The experience of having the university process demystified first-year studies and reduced student anxiety:

P10: I felt confident with the summer school [pre-university preparation] especially because you get the unit guides from last year, or the semester before, and you've got a four-week head start ... And going into there [undergraduate studies], like the first week you're already ahead, it's relaxing. Well, it's not relaxing, you know, you can breathe, and you're not stressed and you're not panicking and there's no anxiety about oh my god, I'm falling behind.

P2: ...there were some really good things that I found when I started here. So, there was an induction, and you came in and they taught you how to navigate the portal, and this is how you submit an assignment and things. And the other really good thing was, I always used the computer room, always printed my unit plans, any resources I had to do.

P4: The thing that I noticed when I first came in here, they had all the teachers come into the room, and telling us who your support is, and some lecturers

you've already got. Especially coming back at my age, coming back to university, I was going, "am I really doing the right thing here?" So, that was great to see. And then they gave us these bags and so on and so on, this is all your information you can have, and this is the cultural centre down here and so on.

While Indigenous-targeted pre-university preparation events and courses were really appreciated in the yarning circle discussions, the same could not be said when students were nearing the end of their degrees. Participants from both sites wanted more career guidance and support in terms of what to do after university:

P4: I finish next year, where am I going after this? What is there for me? ... So, it's that questioning of going, what do you do when you finish?

P1: I found that when I got towards the end of my degree, I was really wanted by so many people and organisations, to a point where I started to lose where I wanted to go. And I thought, I had so many people offering me things, which is so privileged – but to a point where I didn't know what my community needed instead, and I really needed guidance and direction in that instance. So, having the opportunities to maybe be able to chat with Elders, or peers, or mentors, within this facility, that could actually provide you with support and guidance in regard to what a clear career path should look like. Not just career counsellors, but Aboriginal specific.

P1: I went to speak to the Deputy Vice-Chancellor- I wanted to do my PhD, and like an inside degree, and I'd said to him, "I've heard that there is possibility of a traineeship while you do PhD for Aboriginal students." He said, "maybe, at some stage." He's like, "but there are other universities out there for you to do your thing." And so, I was like "well, have a nice day." So, it was really like a barrier. I just closed that door ...and because I didn't know what community needed, I really just needed to shut myself off from all of university space, and go back into community, and try to work it out from there.

P2: [prior to university] I remember talking to NAME, and I was like "I want to be a teacher," and she's like "you could go to this uni, do this degree, what is it that you want?" Whereas like, I left here [university] wanting to do a Masters, and I had no-one to talk to. So, now I'm studying my research online.

These discussions raised two important points: The first was that transitioning out of university was equally as anxiety provoking as transitioning in; however, there was inadequate support at the end of degree studies. The second was the sense that universities abruptly severed relationships with Indigenous students upon graduation.

RECOMMENDATION: Develop transition and preparation strategies for Indigenous students in their final year to reduce post-degree questions and anxieties. This support can boost graduate employment and graduate satisfaction metrics which in turn attract future students to the university. Further, have clear transition strategies for students who wish to pursue postgraduate studies in the same university. Nurture the relationship with Indigenous graduates and offer opportunities for postgraduate study with the understanding that connection is imperative to Indigenous models of wellbeing

THEME 5 – Responses to the Covid-19 pandemic.

COVID-19 lockdowns were described as being both challenging and beneficial to the student participants. They were also not discussed at length. This may have been due to the relative freedom WA had experienced for several months, due to not having COVID-19 cases in the community. However, the following narratives offer some insight for this specific research enquiry. One student did not have an adequate study environment in her household, so the decision to leave computer facilities open to students during lockdown was instrumental to her remaining at university:

P10: I think definitely if I didn't have IHEU during [lockdown] I probably wouldn't have done uni.

Another referred to the additional pressure the transition to online learning caused:

P4: when it all happened, COVID hit, and I'm sitting there going, "oh wow. Now I have to do this at home. I have no tutor," and I just kind of struggled.

And a third, described what she learned from it and logistical benefits in largely positive terms:

P5: Now the feeling of us all going into lockdown, to me, that was the best thing that ever happened. The reason being, they now have got a taste of what online students had to deal with. And having our exams at home online, perfect. You're in an environment where you're home, you're safe, you're free in thinking, and you don't have the pressure of putting your kid into school, or into day-care. You're in your own space, you've got 48 hours to do your exam, you're prepared mentally, emotionally. That was the best thing. And even speaking to some students now that are still online, that haven't still been connected to any of the staff here – they love it! That was the best thing to ever come out of COVID.

Overall, the subjective experiences of lockdown expressed in the yarning circles, coupled with the proportionally low references to the impacts of the pandemic, means that no meaningful recommendation can be elicited from the WA dataset.

RECOMMENDATION: Conduct further research with Indigenous students from states and territories that have experienced multiple lockdowns to find salient insights into how to best support progression and completions trajectories in rapid transitions to online learning.

Final conclusions

Limitations

The quantitative data included in the report is limited by inconsistent record keeping. Thus, there is a possibility that Indigenous students access support at higher frequencies than was reported. Interactions with services particularly the IHEU are often recorded on an ad hoc basis, leading to underreporting. It is also important that both IHEUs in the current study had an open-door policy where students are encouraged to walk in and seek advice without appointments. Study One in particular demonstrates that, at present, university recording systems cannot adequately quantify the level of support systems accessed by Indigenous students.

A limitation of Study One was being unable to access health and wellbeing service data due to certified practitioners raising concerns around the legality of releasing this data. They felt releasing access data (but not client records or details) may have been in breach of the Privacy Act. This was problematic, especially as the data was low risk for Indigenous students but may have provided important insight into relationships between wellbeing and academic success. In this case, it appeared that the protection of practitioners was weighted over the benefits to Indigenous student support. Future policy changes might consider obtaining consent upon accessing wellbeing service to obtain deidentified access data.

The qualitative data in the report may have been impacted by confirmation-bias in that the successful Indigenous students interviewed had accessed IHEU community networks. Therefore, findings as to the importance of IHEUs to success maybe skewed. Having said that, this may also have indicated that successful student's access IHEUs. This project did not find enough evidence to make firm conclusions either way.

Final conclusions

Despite data limitations, analysis of student progress rates and student reports of their individual strength and resilience whilst at university provided a strong challenge of a deficit narrative often levelled against Indigenous students. With this in mind, it is interesting to consider the enrolment-completion gap reported in national statistics (DET, 2019). Most Indigenous students in the current sample appeared to be on track toward completing their university degree or demonstrated consistent enough pass rates to infer that they had already completed their degree. A smaller proportion of students across both universities were located within a 'low success' pool averaging 0-30 per cent pass rates across the study period. There was only a small minority of student who consistently attempted and failed units. Data from both studies thus illustrated the individual and collective strengths-based strategies and behaviours displayed by students articulating stories of academic success.

Relatedly, findings from Study Two highlighted that Indigenous students attributed their success to being 'well' at university and perceptions of wellbeing were integral to discussions of their academic success. Findings from Study Two also provided overwhelming support for developing strategies which align with Gee's Indigenous model of Social and Emotional Wellbeing (2014), central to which is the tenant of connection (to Country, to community, to family, to spirit and ancestors, to body, to mind, and to Culture). Narrative themes picked up on students' desire to be connected to academic and support staff; to Indigenous peers on and off campus; to Country, when on campus; and, to the broader university. This theme of connection ran throughout the yarning sessions and was positioned as both a strength and a lack in successful students' experiences. Thus, universities and IHEUs might base strategic and policy decisions relating to Indigenous student support around the primacy of interpersonal relationships (Bennett et al., 2021), sense of belonging and community networks. Based on the report findings, we argue for an investment in support relationships for Indigenous students rather than solely relying on instrumental supports. Universities must

adequately support and fund these support relationships ensuring that there are adequate workload allocations for academic staff to engage supporting Indigenous students. This is particularly true for Indigenous academic staff who already shoulder the burden of capacity building for non-Indigenous colleagues.

Final response to the project research questions

What is the pattern of Indigenous students' use of support services over a 10-year period?

Finding showed the majority of Indigenous students did not access institutional support services, particularly those outside of the IHEU. The most frequently accessed services – and those most frequently discussed in the yarning data – were scholarships and ITAS. The data analysis suggested that Indigenous students accessed either Indigenous-specific services or Indigenous-specific service in conjunction with whole of university services. They rarely accessed whole of university service in isolation. This pattern suggests that IHEUs are not only supplementing student support for the broader university, but they are also replacing it. Therefore, it is important that institutions consider redirecting support funding from the university to IHEUs, in addition to ISSP supplementation.

What is the relationship between Indigenous student progression and access of university support services?

Statistical analysis found inconsistent relationships across the 10-year period. Scholarships were most frequently associated with pass rates, followed by ITAS. However, this was a cross-sectional analysis and did not measure cause and effect relationships. Further longitudinal analysis may solicit additional patterning. However, it is important to note the number of support functions experienced through relational interactions evidenced in the qualitative data, which is currently not measured by universities.

How do successful university students:

- Engage with university support services?
- View the relationship between university support services and degree progression?
- Experience the transition of support services online in response to COVID-19 lockdowns?

Data from Indigenous student enrolment, grades, and university support service usage, along with qualitative accounts of students' experiences with support services show that the degree of *relational support*, rather than specific types of instrumental support (with the exception of scholarships), is what matters in terms of student success. Indigenous students identify meaningful relationships with university staff and peers, both within IHEU's and within the broader university, as impacting their wellbeing which in turn impacts their academic success. Without these relational supports, students achieve high levels of success, albeit with reduced wellbeing. Finally, no conclusions could be made as to the impact of COVID-19 lockdowns, likely due to WA largely avoiding prolonged lockdowns, after mid-2020 and students had returned to campus-based learning for several months upon data collection.

References

- Asmar, C., Page, S., & Radloff, A. (2015). Exploring anomalies in Indigenous student engagement: findings from a national Australian survey of undergraduates, *Higher Education Research & Development*, 34:1, 15-29, DOI: 10.1080/07294360.2014.934334
- Barney, K. (2013). 'Taking your mob with you': Giving voice to the experiences of Indigenous Australian postgraduate students. *Higher Education Research & Development*, 32(4), 515-528.
- Barney, K. (2016). Listening to and learning from the experiences of Aboriginal and Torres Strait Islander students to facilitate success. *Student Success*, 7(1), 1-11. <https://doi.org/10.5204/ssj.v7i1.317>
- Behrendt, L. Y., Larkin, S., Griew, R., & Kelly, P. (2012). *Review of higher education access and outcomes for Aboriginal and Torres Strait Islander people*. Department of Industry, Innovation, Science, Research and Tertiary Education.
- Bennett, R., Uink, B., & Cross, S. (2020). Beyond the Social: Cumulative implications of COVID-19 for first nations university students in Australia. *Social Sciences & Humanities Open*, 2(1), 100083.
- Bennett, R., Tanoa, A., Uink, B., & van den Berg, C. (2021). Creativity in reactivity: Application of a 'relationships-first' strategy in the rapid transition to online learning for Indigenous university students during COVID-19. *Journal of Global Indigeneity*, 5(1), 1-13.
- Bennet, R., Uink, B., & Martin, G. (forthcoming). Cultural studies as pedagogy for critical allyship. *Continuum*.
- Bessarab, D., & Ng'andu, B. (2010). Yarning about yarning as a legitimate method in Indigenous research. *International Journal of Critical Indigenous Studies*, 3(1), 37-50.
- Braun, V., & Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2). pp. 77-101.
- Bullen, J., Roberts, L., Davis, C., Hill, B., Lipscombe, T., & Cox, D. (2021). Comfort with discomfort: Exploring Wadjella educators' engagement with Indigenous students. National Centre for Student Equity in Higher Education. Perth. Retrieved from: https://www.ncsehe.edu.au/wp-content/uploads/2021/03/Bullen_Curtin_WadjellaEducators_2021_FINAL.pdf
- Cohen, P., West, S. G., & Aiken, L. S. (2014). *Applied multiple regression/correlation analysis for the behavioral sciences*. Psychology press.
- DET (2019). Selected Higher Education Statistics – 2019 Student data. Australian Government, Department of Education and Training. Canberra. <https://www.dese.gov.au/higher-education-statistics/student-data/selected-higher-education-statistics-2019-student-data>
- DET (2019b). Higher education statistics: 2019 section 6 Indigenous students. Australian Government, Department of Education and Training. Canberra. <https://www.dese.gov.au/higher-education-statistics/resources/2019-section-6-indigenous-students>
- Frawley, J., Ober, R., Olcay, M., & Smith, J.A. (2017). *Indigenous Achievement in Higher Education and the Role of Self-Efficacy: Rippling Stories of Success*. National Centre for Student Equity in Higher Education, Perth. Retrieved from: https://www.ncsehe.edu.au/wp-content/uploads/2017/05/Frawley_Rippling-Stories.pdf

- Freedman, D. A. (1999). Ecological inference and the ecological fallacy. *International Encyclopedia of the Social & Behavioral Sciences*, 6(4027-4030), 1-7.
- Fredericks, B. (2011). 'Universities are not the safe places we would like to think they are, but they are getting safer': Indigenous women academics in higher education. *Journal of Australian Indigenous Issues*, 14(1), 41-53.
- Gee, G., Dudgeon, P., Schultz, C., Hart, A., & Kelly, K. (2014). Aboriginal and Torres Strait Islander social and emotional wellbeing. *Working together: Aboriginal and Torres Strait Islander mental health and wellbeing principles and practice*, 2, 55-68.
- Georgakopoulou, A. (2006) The other side of the story: Towards a narrative analysis of narratives-in-interaction. *Discourse Studies*, vol. 8(2): 235-257
- Hamaker, E. L. (2012). Why researchers should think "within-person": A paradigmatic rationale. In M. R. Mehl & T. S. Conner (Eds.), *Handbook of research methods for studying daily life* (pp. 43–61). The Guilford Press.
- Kift, S., & Nelson, K. (2005). Beyond curriculum reform: Embedding the transition experience. *Research and Development in Higher Education: Higher Education and the changing world 28*. Conference Proceedings retrieved from: <http://www.herdsa.org.au/publications/conference-proceedings/research-and-development-higher-education-higher-education-75>
- Nakata, M. (2013) The Rights and Blights of the Politics in Indigenous Higher Education, *Anthropological Forum*, 23:3, 289-303, DOI: 10.1080/00664677.2013.803457
- NIAA (n.d). <https://www.niaa.gov.au/indigenous-affairs/education/indigenous-student-success-program>
- Pechenkina, E. (2015). Who needs support? Perceptions of institutional support by Indigenous Australian students at an Australian University. *UNESCO Observatory Multi-Disciplinary Journal in the Arts*, 4(1), 1-17.
- Pulver, L.J. (2020 July 14). Indigenous students need support in the COVID crisis. The University of Sydney (2020 July 14). Available from: <https://www.sydney.edu.au/news-opinion/news/2020/07/14/indigenous-students-need-support-in-the-covid-crisis.html>
- Riessman, C. K. (2008) *Narrative methods for the human sciences*, London: Sage.
- RocheCouste, J., Oliver, R., & Bennell, D. (2014). Is there cultural safety in Australian universities? *International Journal of Higher Education*, 3, 153-166.
- Shalley, F., Smith, J., Wood, D., Fredericks, C. B., Robertson, K., Miller, A., & Larkin, S. (2019). Understanding completion rates of Indigenous higher education students from two regional universities. National Centre for Student Equity in Higher Education, Perth. Retrieved from: https://www.ncsehe.edu.au/wp-content/uploads/2019/12/Shalley_Final_3.12.19.pdf
- Shukla, N.; Wilson, E.; Boddy, J. (2014). Combining thematic and narrative analysis of qualitative interviews to understand children's spatialities in Andhra Pradesh, India. *Institute of Education, University of London: National Centre for Research Methods Working Paper*, [NOVELLA: Narrative Research in Action]
- Uink, B., Hill, B., Day, A., & Martin, G. (2021). 'Wings to fly': a case study of supporting Indigenous student success through a whole-of-university approach. *The Australian Journal of Indigenous Education*, 50(1), 10-19.
- Universities Australia. (2017). Indigenous strategy 2017–2020. *Universities Australia*.

Williams, R. (2020). Heteroskedasticity. University of Notre Dame.
<https://www3.nd.edu/~rwilliam/>

Appendix A

Table A1. Instructions for Scoring University Support Service Data

Description of Service	Raw data provided	Scoring
Learning advisors (university one)	Every workshop/session attended by Indigenous students; Date of workshop/1-1 consultation	Any workshop/consult with a start date between 1 st Jan – 31 st June = coded as occurring in semester 1 of that calendar year Any workshop/consult with a start date 1 st July- 31 st December = coded as occurring in semester 2 of that calendar year
Student Success Team, Learning Advisors, Scholarships, ITAS, PAC/PASS, Careers (university two).	Interactions per student and semester and year of interaction.	Filtered database search for semester 1 (1 st Jan-31 st June) each year and semester 2(1 st July- 31 st December) each year.
Student Advisors/Student Support Team, IHEU (university one)	Date of interaction; product hierarchy (i.e., type of interaction)	Divided into semesters by interaction date (interactions between 1 st Jan-31 st July = semester 1; interactions between 1 st July – 31 st December = semester 2). Filtered for interactions related to 'Student Advisor Network' 'Student Support' or 'IHEU'
PAC/PASS (university one)	Semester of workshop/1-1 consultation for every student	Data provided in semester 1 and semester 2 format.
Scholarships (university one).	Start date of each scholarship received by Indigenous students	Any scholarship with a start date between 1 st Jan – 31 st June = coded as occurring in semester 1 of that calendar year Any scholarship with a start date 1 st July-31 st December = coded as occurring in semester 2 of that calendar year
ITAS (university one)	Semester of ITAS usage, number of hours of ITAS used for each student who signed up to ITAS	Used pre-recorded semester of use (use was semester 1, semester 2 recorded).
Indigenous undergraduate support unit (university one)	Semester of enrolment for each student	Used pre-recorded semesters. Program only ran during semester 1 and semester 2 each calendar year.

Appendix B

Table A2. Model fit statics

	F	<i>p</i>	% Variance Accounted For
ITAS			
Sem 1 2017	1.35	.252	--
Sem 2 2017	3.54	.008*	2.6%
Sem 1 2018	1.78	.132	--
Sem 2 2018	1.93	.105	--
Sem 1 2019	4.76	.001*	3.6%
Sem 2 2019	2.71	.030*	1.7%
Learning Advisors			
Sem 1 2018	1.70	.150	--
Sem 2 2018	.610	.656	--
Sem 1 2019	1.65	.161	--
Sem 2 2019	2.31	.057	--
PAC/PASS			
Sem 1 2018	1.33	.340	--
Sem 2 2018	.822	.512	--
Sem 1 2019	2.10	.080	--
Sem 2 2019	2.59	.036*	1.6%
Scholarships			
Sem 1 2010	1.46	.219	--
Sem 2 2010	.796	.530	--
Sem 1 2011	.279	.891	--
Sem 2 2011	.743	.564	--
Sem 1 2012	3.45	.009*	4.5%
Sem 2 2012	.676	.609	--
Sem 1 2013	.368	.831	--
Sem 2 2013	1.63	.168	--
Sem 1 2014	1.19	.318	--
Sem 2 2014	1.87	.117	--
Sem 1 2015	4.40	.002*	4.4%

	F	p	% Variance Accounted For
Sem 2 2015	3.33	.011*	2.9%
Sem 1 2016	2.59	.001*	1.7%
Sem 2 2016	1.90	.102	--
Sem 1 2017	1.66	.158	--
Sem 2 2017	3.63	.006*	2.7%
Sem 1 2018	4.73	.001*	3.5%
Sem 2 2018	4.87	.001*	3.7%
Sem 1 2019	3.27	0.12*	2.2%
Sem 2 2019	4.59	.001*	3.4%

Note: all degrees of freedom = 4. * $p < .05$.