Alternative pathways into university

Are tertiary preparation programs a viable option?

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During the past three decades, the student populations of Australian universities have become more heterogeneous as the higher education sector expanded and new alternative entry pathways were established. Broadening access to university study and, therefore, to professional and semi-professional occupations, provides avenues for social mobility. In this paper, we examine whether students entering university via alternative entry pathways, and in particular, on-campus tertiary preparation programs, have similar levels of achievement and attainment as students who entered via the more traditional pathway after completing Year 12. Our analysis is conducted on data from one regional university and our results show that students who were not eligible to enrol on the basis of their secondary school results were no more likely than traditional students to discontinue their studies.

Keywords: higher education; alternative entry; retention

In the latter part of the twentieth century, Australia, like many other nations, transitioned into a post-industrial economy, shedding jobs in manufacturing and creating jobs in the services sectors, fuelling demand for a more educated population with higher levels of skills and the capacity for lifelong learning (Gale & Tranter, 2011; Ryan & Watson, 2003). To meet rising demand for university degrees, the Australian Government expanded the higher education sector by increasing the number of universities and introducing alternative entry pathways. In 2010, the government introduced equity targets to encourage universities to provide more opportunities for students from a wider segment of the population and to provide additional support to these non-traditional students (Pitman, 2017; Thomas, 2014). The expansion of higher education sectors in Australia and other Anglophone countries such as the UK and the US is associated with more heterogeneous student populations in terms of family background, previous level of education, life stage and motivation (Gale & Parker, 2014; Schuetze & Slowey, 2002). However, as Walker, Matthew and Black (2014) note, social background is not the only barrier to the successful completion of university study with students from non-traditional backgrounds requiring additional support throughout their studies to overcome feelings of alienation (see also Thomas, 2014). To assist in preparing

a more diverse student population for the rigours of academic life, universities have developed enabling programs to upskill students who did not complete secondary school or who completed secondary school without the required level of achievement.

In this paper, we analyse administrative data provided by a regional university in Australia to examine the association between pathway into university and achievement and retention. After providing an overview of the context and the results of previous research, we introduce the data and then present and discuss the results of our analysis.

Higher education in Australia

The Australian higher education sector expanded after 1989 when colleges of advanced education and institutes of technology were 're-invented' as new universities, through rebranding or mergers with other colleges, institutes or universities (Moodie & Wheelahan, 2009). Since then, the Australian Government has implemented several policies aimed at widening participation. In 2010, the government uncapped quotas for Commonwealth supported students, which led to a dramatic increase in commencing-student numbers as universities scrambled to maintain market share, and introduced a Higher Education Participation Partnerships Program (HEPPP) which provided specifically targeted funding to promote the participation of under-represented groups (Devlin, 2013; Hodges *et al.*, 2013; Pitman, 2017; Thomas, 2014). Consequently, many students with no or low ATARs (Australian Tertiary Admission Rank) enrolled in university degree programs. ATARs rank students relative to their peers and range from 30 to 100. They have a similar role to A levels in the UK and the SAT in the US (Goggin *et al.*, 2016). Pitman, Koshy and Phillimore (2015) found that the percentage of students entering via alternative entry pathways, that is, not on the basis of their ATAR, increased from 37 to 46 per cent between 2008 and 2011.

Despite the number of domestic undergraduate students increasing from almost 280,000 to almost 745,000 between 1988 and 2015 (DETYA, 2001; DET, 2016), students from the designated equity groups, that is, students from low socio-economic status (SES) families, Aboriginal and Torres Strait Islander students, students from non-English speaking backgrounds, students with disabilities, and students from rural/remote regions, continue to be under-represented in the higher education sector (DET, 2016; Edwards & McMillan, 2015; Ellis, 2013; Gale & Tranter, 2011; Goggin *et al.*, 2016). Between 2009 and 2015, the percentage of students from low SES families increased from 16 to 18 per cent (DET, 2016; Edwards & McMillan, 2015). Furthermore, several researchers provide evidence that although the expansion of the higher education sector led to an increase in the number of students from low SES families attending university, there is also evidence of increased stratification within the sector (Gale & Tranter, 2011). Thus, expansion of the higher education sector may not have achieved an important social justice goal of ensuring that individuals from disadvantaged families have access to the same opportunities as their peers from more advantaged families (Pitman, 2017).

Since 1990, domestic students have been required to make a contribution to the cost of their tuition through an income-contingent loan scheme. In the original scheme (the Higher Education Contribution Scheme), all students made an equal contribution regardless of their degree program. However, after several changes, contributions now differ between discipline groups. Currently, Higher Education Loan Program (HELP) loans are interest-free (although the outstanding balance is adjusted to account for inflation on an annual basis) and are repaid via the taxation system once the student's income reaches a designated threshold. In addition, to ensure that students from low SES families are not deterred from undertaking university study for financial reasons, students from low-income families and independent students with low incomes have access to a means-tested scheme of income support.

Financial constraints are just one of the many interrelated factors that deter young people from low SES families from attending university (Chambers & Deller, 2011). Young people from low SES families are more likely than those from high SES families to have parents who have no experience of the higher education sector, thus they have access to lower levels of relevant cultural and social capital (Gale & Tranter, 2011). This 'social class gradient' in access to information, as well as financial resources, structures access to higher education and the ability of students to navigate the complexities inherent in higher education such as selecting universities, selecting degree programs, selecting subjects within and across degree programs, and mapping out achievable goals (Christie *et al.*, 2004).

The under-representation of students from low SES families is also a feature of higher education systems in other nations (Forsyth & Furlong, 2003; Harrison & Hatt, 2011; Ishitani, 2006; Rowan-Kenyon, 2007; Rowan-Kenyon *et al.*, 2008; Schuetze & Slowey, 2002; Thiele *et al.*, 2017; Walker *et al.*, 2004). For example, Schuetze and Slowey

(2002) examined higher education in 10 countries, finding that although the higher education sectors in some countries managed to attract relatively large numbers of non-traditional students, elite research-intensive universities were seemingly less accessible than newer universities to non-traditional students. Forsyth and Furlong (2003) also found that UK students from the most disadvantaged families who qualified for university were the least likely to enrol at prestigious institutions or in prestigious courses at any institution.

Enabling programs are particularly attractive to students from under-represented groups, such as students from low SES families, first-in-family students, Indigenous students and students with disabilities.

Pathways into university

Although the traditional pathway into university in Australia is via the completion of secondary school with an ATAR, there are several alternative entry pathways including the completion of an enabling program, the completion of a Vocational Educational and Training (VET) qualification, the completion of a lower level higher education qualification such as an Associate Degree, or on the basis of being over 21 years of age (Watson *et al.*, 2013). In 2010, around 10 per cent of all commencing students were admitted via the VET pathway, however, the percentages differed markedly between universities, ranging from less than five per cent in research-intensive universities to 26 per cent in some regional universities (Watson *et al.*, 2013). According to Moodie and Wheelahan (2009: 360), although VET is an 'educational ladder of opportunity' allowing students to progress through the system one level at a time, the sector does not provide 'a social ladder of opportunity' because the students most likely to transfer from VET into higher education were similar in terms of SES to students who entered the higher education sector via the traditional pathway.

Enabling programs (also called transition, bridging, preparation, foundational or access programs) are an alternative pathway into higher education that provides commencing students with additional support, usually in the semester prior to the commencement of a degree program. An enabling program is 'a course of instruction provided to a person for the purpose of enabling the person to undertake a course leading to a higher education award' (Australian Government, 2012: 26). All publicly-funded Australian universities offer enabling programs to students with low or no ATARs. Students are not required to make any contribution to the cost of tuition, although they may have to purchase course materials and/or pay service fees (Hodges *et al.*, 2013; Lomax-Smith *et al.*, 2011). In 2015, there were 22,495 students across Australia enrolled in enabling programs (DET, 2016).

Enabling programs are particularly attractive to students from under-represented groups, such as students from low SES families, first-in-family students, Indigenous students and students with disabilities (Hodges *et al.*, 2013; Lomax-Smith *et al.*, 2011). Enabling programs are designed to provide potential students with an opportunity to test whether they are capable of studying at university level and to discover whether or not they actually want to study at university (Goggin *et al.*, 2016; Hodges *et al.*, 2013; Thomas, 2014). Students who graduate from an enabling program perform at similar levels as traditional students during their undergraduate degree programs (Chesters & Watson, 2016; Thomas, 2014).

Retention and attrition

As the expansion of alternative entry pathways into university provides increased opportunities for the participation of under-represented groups in degree programs, there is a strong policy interest in the retention and attrition rates of the students from these groups (Coates, 2014). Retention and attrition rates are widely accepted institutional measures of success in the higher education sector. Studies examining retention and attrition rates of traditional students have found that students with relatively high ATARs were more likely to complete their degree programs (Edwards & McMillan, 2015; Lomax-Smith *et al.*, 2011). Edwards and McMillan (2015) found that 60 per cent of students with an ATAR of less than 60 completed their degree program whereas 90 per cent of students with an ATAR of at least 90 completed their degree program.

The non-completion of a degree program tends to be the end result of complex and interrelated factors at both the student and the institution levels (Christie *et al.*, 2004). Student-level factors include: a mismatch between the student's expectations and experiences; a lack of preparation for higher education; financial and personal circumstances; long hours of paid work; a lack

of support and understanding from family and friends; poor mental and/or physical health; and a lack of time management skills. The institutional-level factors include: a lack of coordination between academic and student support services; short contact hours that detract from feelings of belonging; discordance between lectures, tutorials and assessment items; a lack of expenditure on student support services; and a lack of information about how and when to access support services (Bowles & Brindle, 2016; Bowles *et al.*, 2014; Coates 2014; Christie *et al.*, 2004; McMillan, 2011; Mestan, 2016; O'Keefe *et al.*, 2011; Wilcoxson, 2010). O'Keefe, Laven and Burgess (2011) found that of the students who discontinued their studies, 70 per cent subsequently enrolled at other institutions. Wilcoxson (2010) identified differences between students who discontinued their studies in their first year and those who discontinued in their second year. The most common reasons for discontinuing in the first year were: being socially disengaged from university life; being poorly prepared; and lacking commitment to a specific career. The most commonly cited reasons for discontinuing study during the second year were: poor health; financial difficulties; having a clearer idea of their career goals; and feelings of not belonging. Bowles and Brindle (2017) regard having a sense of belonging, that is, identifying with the academic culture of the institution and having a commitment to achieving educational goals, as integral to the completion of degree programs.

Research has consistently identified an association between SES and both attendance at, and attrition from, universities. Students from low SES families are less likely to attend university and those who do attend are less likely to graduate from university than their peers from high SES families (Chesters & Watson, 2013; Edwards & McMillan, 2015). Edwards and McMillan (2015) found that of the students who commenced study in 2005, 69 per cent of students from low SES families and 78 per cent of students from high SES families had completed their bachelor degree programs by 2013. Students from low SES families are more likely than their high SES peers to be the first person in their family to attend university and thus may experience some difficulty adjusting to university culture and expectations (Chambers & Deller, 2011; Christie *et al.*, 2004; Devlin, 2013; Ellis, 2013). Devlin (2013: 941) argues that success at university depends upon an understanding of 'implicit expectations' that many students from low SES families are unaware of and therefore unable to respond to (see also McKay & Devlin, 2014). Walker, Matthew and Black (2004) argue that students who lack the appropriate cultural capital are likely to experience a sense of alienation and are, consequently, less likely to complete their degree programs.

In this paper, we use administrative data provided by a relatively new university located in a regional area, 90 kilometres from a state capital city. In 2017, almost half of the 15,000 students were first in family students, almost one-fifth were from low SES families and 23 per cent were from regional/remote areas. Australian Bureau of Statistics Census 2011 data show that in the local area, a lower percentage of the population had a university-level qualification (11.1 per cent compared to 14.3 per cent for Australia overall); the percentage of employees engaged in professional jobs was lower than for Australia overall (18.9 per cent compared to 21.3 per cent); and the percentage engaged as sales workers was larger than for Australia overall (11.7 per cent compared to 9.4 per cent). The part-time employment rate was higher than that of Australia (34.9 per cent compared to 28.7 per cent) (ABS, 2017).

Our examination of the association between alternative pathways into university and students' subsequent achievement and retention is designed to answer our research question: Are graduates of the on-campus tertiary preparation pathway program more, or less, likely than traditional students to discontinue their studies?

Method

This study draws on de-identified unit-level administrative data for one cohort of domestic undergraduate students who commenced their first bachelor degree program in the first semester of 2010 (n=1771). Data for each semester, in each year from 2010 to 2014, were analysed. The key variables of interest are the student's pathway into university, academic achievement and progress. The majority of commencing students (60 per cent) entered via the traditional pathway; 16 per cent were admitted on the basis of a higher education sub-degree; 12 per cent were admitted on the basis of a VET award; 10 per cent were admitted after the completion of the university's own Tertiary Preparation Pathway (TPP) program; and 3 per cent were admitted on the basis of 'other' criteria (that is, mature-age or professional experience).

The control variables are: sex; age; Indigenous status; first-in-family status; study status; and field of study. There are four age categories: <20 years; 20-29 years; 30-39 years; and 40 years or older. The Indigenous status variable distinguishes between Indigenous and non-Indigenous students. The first-in-family variable distinguishes between students with at least one university-educated parent and

Table 1 Characteristics of commencing students

Characteristic	*Total*	
	n= 1771	%
Sex		
Male	598	34
Female	1,173	66
Age		
<20	1,087	61
20-29	428	24
30-39	133	8
40+	123	7
Indigenous status		
non-Indigenous	1,747	99
Indigenous	24	1
First in family status		
Not first in family	900	51
First in family	871	49
Study status 1st semester 2010		
Full-time	1542	87
Part-time	229	13
Field of Study 1st semester 2010		
Arts	296	17
Social Sciences	172	10
Education	245	14
Business	353	20
Science	132	7
Health sciences	573	32

those who did not have a university-educated parent. The study status variable differentiates between those studying full-time and those studying part-time. The field of study variable has six categories: Arts; Social Sciences; Education; Business; Science; and Health Sciences.

The descriptive statistics of the 2010 commencing cohort are provided in Table 1. Two-thirds of the students were female; 61 per cent were aged 19 years or younger and 15 per cent were aged 30 years or more. Almost half of the students were first-in-family students (our measure of low SES). According to the Department of Education (2017), in 2010, across all universities, 12 per cent of domestic students undertaking bachelor degrees were aged 30+ years and 14.5 per cent were students from low SES families. Health Sciences attracted almost one third of the students (32 per cent), Business programs attracted one-fifth of the students and 17 per cent of students were enrolled in Arts programs.

Student achievement

Student achievement levels, as measured by grade point average (GPA) for all units completed in 2010 and 2011, differed slightly by pathway into university. Student grades range from 0 to 7 with 4 signifying a pass. The average (mean), median (50th percentile), 5th percentile (the lowest 5 per cent) and 95th percentile (the highest 5 per cent) GPA scores by pathway into university are shown in Table 2. Students who had completed a higher education sub-bachelor degree qualification recorded the highest mean GPA of 4.7 whereas traditional students and TPP graduates recorded the lowest mean GPA of 4.2.

Table 2 Summary statistics of GPA by pathway into university and field of study

Pathway	*n=*	*Mean*	*Median*	*Lowest 5%*	*Highest 5%*
Year12	1034	4.2	4.4	1.5	6.1
TPP	166	4.2	4.5	0.9	6.3
other	44	4.4	4.6	1.5	6.7
VET	194	4.5	4.8	1.5	6.2
HE sub-degree	277	4.7	5.0	1.5	6.4
Field of study					
Arts	288	4.1	4.5	1.2	6.2
Social sciences	166	4.3	4.8	1.2	6.2
Education	236	4.7	5.0	1.4	6.5
Business	336	4.0	4.2	1.3	6.1
Science	131	4.0	4.1	1.5	6.3
Health sciences	558	4.5	4.8	1.6	6.3

NOTE: calculated GPA for all units completed in 2010 and 2011.

The difference between the lowest 5 per cent and highest 5 per cent provides an indication of the spread of scores. The GPAs of TPP students range from 0.9 to 6.3 and the GPAs of traditional students range from 1.5 to 6.1 indicating that there was a wider distribution of scores within the TPP cohort. Students studying Business and Science had the lowest mean GPAs (4.0) and those studying Education had the highest mean GPA (4.7). Education students recorded the largest difference between the mean GPA of the lowest 5 per cent (1.4) and the mean GPA of the highest 5 per cent (6.5).

Attrition

Our measure of attrition is based on whether or not students who were no longer enrolled had completed a program by the end of 2014. Undergraduate students may enrol in units of study in different patterns depending on their program of study, whether they are enrolled on a full-time or part-time basis, and individual preference. In addition to the standard two semesters per year, the university offers some units over a summer semester. Although there is no consistent point in time when students complete their undergraduate degree, the completion of 24 units usually signals the completion of a three-year program, such as Arts, and the completion of 30 units signals the completion of a four-year degree program, such as Education.

Of the 1771 commencing students, 56 did not complete any units in semester 1, 2010 and did not return to study. One-fifth of the commencing students did not enrol in semester 2, 2010 and did not complete a degree program. A further 17 per cent of the commencing students did not enrol in semester 2, 2011 and did not complete a degree program. Overall between semester 1 in 2010 and semester 2 in 2014, 52 per cent of students discontinued their studies without completing a degree program. Previous research suggests that a large proportion of these students may have enrolled in programs at other universities (O'Keefe *et al.* 2011). These data allow us to track students who changed degree programs within this university, however, we are unable to track students who transferred to other universities.

Pathways and attrition

There is some variation in attrition rates according to pathway into university and length of time at university, as shown in Table 3. We examine the attrition rates at two time points: the beginning of semester 1 in 2012; and the beginning of semester 2 in 2014. By semester 1, 2012, almost half (49 per cent) of the commencing students who entered after completing Year 12, had discontinued their studies without completing a degree program. Students who entered via the TPP (44 per cent), higher education sub-degree (40 per cent) and VET pathways (37 per cent) were less likely than traditional students to have discontinued their studies by the beginning of semester 1 2012. By semester 2, 2014, 65 per cent of Science students and 44 per cent of Health Sciences students had discontinued their studies without completing a degree program.

Table 3 Association between attrition and pathway into university, field of study and GPA.

	Commencing	*Discontinued sem. 1 2012*	*Discontinued sem. 2 2014*
Pathway	*n=*	*%*	*%*
Year12	1,060	49	54
TPP	173	44	52
HE sub-degree	288	40	48
VET	204	37	52
Other	46	50	63
Field of study			
Arts	296	52	61
Social sciences	172	42	49
Education	245	41	49
Business	353	45	54
Science	132	47	65
Health sciences	573	38	44
GPA 2010/2011			
<4	594	70	79
4/4.99	449	31	40
5/5.99	485	24	31
6/7	187	22	30

As GPA increased, the likelihood of discontinuing study before completing a degree program decreased. By the beginning of semester 1 in 2012, 70 per cent of students with a GPA of less than 4 had discontinued their studies whereas 22 per cent of students with a GPA of at least 6 had discontinued their studies. These figures indicate that decisions to discontinue study are not solely driven by levels of achievement with some low achievers persisting with their studies and some high achievers discontinuing theirs. As Christie, Munro and Fisher (2004) point out, students discontinue their studies due to a range of personal and institutional factors such as financial and/or time constraints.

Are graduates of the on-campus tertiary preparation program more, or less likely than traditional students to discontinue their studies?

To answer our research question, we conducted a series of logistic regressions to examine the relationships between students discontinuing study by semester 1 2012 and sex, age, first-in-family status, pathway, study status, field of study and GPA. Logistic regressions produce odds ratios which represent the change in the likelihood of discontinuing

Table 4: Association between discontinuing study and selected characteristics

	Model 1	*Model 2*	*Model 3*	*Model 4*
	Odds ratio (std. err.)	*Odds ratio (std. err.)*	*Odds ratio (std. err.)*	*Odds ratio (std. err.)*
Female =1	0.65*** (0.07)	0.64*** (0.07)	0.65*** (0.07)	0.82 (0.10)
Age (<20 = ref.)				
20-29	1.16 (0.13)	1.06 (0.16)	1.07 (0.16)	1.34 (0.22)
30-39	0.83 (0.16)	0.64 (0.14)	0.67 (0.15)	1.22 (0.31)
40+	0.62* (0.13)	0.45* (0.11)	0.46* (0.11)	0.80 (0.22)
First in family =1	1.17 (0.11)	1.17 (0.12)	1.17 (0.12)	0.96 (0.11)
Pathway (Yr12 = ref.)				
TPP		1.28 (0.24)	1.30 (0.25)	1.17 (0.25)
HE sub-degree		0.79 (0.13)	0.81 (0.14)	0.85 (0.16)
VET		0.76 (0.14)	0.77 (0.14)	0.65* (0.14)
other		1.30 (0.44)	1.33 (0.45)	1.07 (0.40)
Study status (Full-time= ref.)				
Part-time		2.69*** (0.43)	2.65*** (0.43)	2.78*** (0.50)
Program (Arts = ref.)				
Social sciences			0.69 (0.14)	0.61* (0.14)
Education			0.66* (0.12)	0.83 (0.17)
Business			0.70* (0.11)	0.56** (0.10)
Science			0.67 (0.15)	0.58* (0.14)
Health sciences			0.60*** (0.09)	0.62** (0.10)
GPA (<4= ref.)				
4				0.16*** (0.02)
5				0.12*** (0.02)
6+				0.09*** (0.02)
Constant	0.94 (0.09)	0.93 (0.10)	1.30 (0.20)	3.95*** (0.72)
n=	1771	1771	1771	1771
Pseudo R2	0.0122	0.0315	0.0367	0.1777

****p<0.001; **p<0.01; *p<0.05. Note: The reference categories: male; <20 years; not first in family; TPP pathway; full-time; Arts program; GPA<4.*

study relative to continuing study. An increase in the likelihood of discontinuing study is indicated by an odds ratio of greater than 1 whereas a decrease in the likelihood of discontinuing study is indicated by an odds ratio of less than 1. The results of the four models are presented in Table 4. We start by examining the association between attrition and the demographic characteristics (Model 1) and then progressively add in the other explanatory variables. In Model 2, we add in pathway into university and study status; in Model 3, we add in field of study; and in Model 4 we add in GPA.

The results for Model 1 show that being female has a negative effect on the likelihood of discontinuing study by semester 1 in 2012, net of age and first-in-family status. Older students, that is, those commencing study when aged at least 40 years, were also less likely to discontinue study than younger students. When we add in pathway into university and study status (Model 2), we find that students who entered via any of the non-traditional pathways, including TPP students, were no more likely than traditional students to discontinue their studies, net of sex, age, first-in-family status, and study status. In other words, students who entered university via an alternative pathway were just as likely to continue their studies as students who entered via the traditional pathway. Net of pathway into university, age and study status, female students were less likely than male students to discontinue their studies. Net of pathway into university, sex and study status, those aged 40 years or older were less likely to discontinue their studies than those aged under 20 years at the time of enrolment. Part-time students were 2.7 times more likely than full-time students to discontinue their studies, net of the other factors. When we add field of study into Model 3, the results from Model 2 are repeated. Furthermore, students studying programs in the broad fields of Education, Business or Health Sciences were less likely than Arts students to discontinue their studies, net of the other factors.

The final model (Model 4) includes the GPA variable and as expected, as GPA increases the likelihood of discontinuing study decreases. Students with a GPA of 4 were only one-fifth as likely to discontinue study as students with a GPA of less than 4 even after controlling for sex, age, first-in-family status, pathway into university, study status and field. Interestingly, net of the other variables, students who entered via the VET pathway are less likely than traditional students to discontinue their studies. The final model explains around 18 per cent of the variation in decisions to discontinue, however, this is not an unexpected result given that the data did not include a range of personal factors identified as being important predictors of attrition such as long hours of paid work; financial constraints; health issues; and family obligations (Christie *et al.,* 2004).

Discussion

Since 1990, the Australian higher education sector has expanded by increasing the number of universities and by widening the eligibility criteria thus allowing more students to access higher education. Through the development of alternative entry pathways, the student populations of Australian universities have diversified and now include sizeable, but not representative, proportions of low SES students, Indigenous students and students with disabilities. Previous research examining the effects of pathway into university shows that type of alternative entry pathway is an important predictor of completion. There is some evidence that students entering via the mature age entry pathway were more likely than traditional students to discontinue their studies (Edwards & McMillan, 2015) whereas students who completed an on-campus enabling program were more likely than traditional students to complete their studies (Chesters & Watson, 2016; Walker *et al.*, 2004).

This study tracked one cohort of students attending a regional university for a period of five years using administrative data provided by the university. Sixty per cent of the students entered via the traditional pathway and 10 per cent of the students completed the on-campus tertiary preparation pathway (TPP) program. On average, TPP students had similar levels of achievement as traditional students. GPA was a strong predictor of non-completion by Semester 2, 2014 with 79 per cent of students with a GPA of less than 4 discontinuing their studies compared to 30 per cent of students with a GPA of 6 or higher.

After controlling for sex, age, study status, field and GPA, TPP students were no more likely than traditional students to discontinue their studies and VET students were less likely than traditional students to discontinue their studies. Thomas (2014) and Chesters and Watson (2016) also found that graduates from enabling programs performed just as well as students who entered university via the traditional pathway. Tertiary preparation programs may provide students with the confidence and skills to persist (Habal, 2012). Participation in enabling programs such as the TPP allows students to familiarise themselves with many aspects of university life before they commence undergraduate studies (Wilcoxson, 2010) and to develop a

sense of belonging which is a key factor in the likelihood of continuing study through to graduation (Bowles *et al.*, 2014; Kahu and Nelson, 2017). Staff from 12 Australian universities interviewed by Thomas (2014) reported that graduates from enabling programs tended to do as well as traditional students in undergraduate degree programs. Thomas' participants were unable to draw on data to support their claims, however the results of our study do provide some supporting evidence. In other words, non-traditional students who complete an on-campus enabling program are just as likely as traditional students to graduate with a university degree.

A limitation of this study is that we relied on administrative data that did not include indicators of the students' personal and financial circumstances that other researchers have found to be important predictors of attrition. For example, students undertaking long hours of paid work were more likely to discontinue their studies (McMillan, 2005) as were students who lacked sufficient financial resources and those who did not integrate well into university life (Christie *et al.*, 2004; Wilcoxson, 2010). Furthermore, many students initially enrolled in second choice programs and then upgraded into the program of their choice after completing their first year of study (O'Keefe *et al.*, 2011). Although we were able to track students who changed degree programs within this particular university, we were unable to track students who transferred to other universities. Given that these data pertain to one cohort of students attending one regional university in Australia, the results are not generalisable across Australian universities. Therefore, a longitudinal study collecting data from a nationally representative sample of students at regular intervals from enrolment through to graduation, or until they discontinue their study, is warranted. Understanding the difficulties that some students face in accessing higher education; negotiating the complexities of studying at university-level; managing competing demands on their time and energy; and interacting with various professors, lecturers, tutors and their support staff; would provide an insight into why students discontinue their studies.

Conclusion

The above findings confirm that tertiary preparation programs provide viable alternative entry pathways into higher education and are associated with similar levels of retention and completion of university study as the traditional pathway. Despite concerns that broadening the criteria for admission into the higher education sector may dilute academic standards, the results presented in this paper indicate that graduates of the tertiary preparation pathway program performed as well as other commencing students and were equally as likely to complete their degree programs. As with other enabling programs, the TPP at this university attracts second chance students, those who do not have the pre-requisite educational qualifications for direct entry into undergraduate degrees. By immersing students in the university culture and providing a supportive learning environment, enabling programs have the capacity to prepare a wider segment of the population for the rigours of academic study.

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