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Completing university in Australia

A cohort analysis exploring equity group outcomes

By Daniel Edwards and Julie McMillan

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Introduction

This briefing paper provides initial analysis of national data on university enrolments, tracking students from commencement to completion of university. The Research Briefing focuses on the completion of university among key equity groups in higher education, offering new insight into the outcomes for a number of groups underrepresented in the higher education sector.

This work is part of a larger project funded by a research grant from the National Centre for Student Equity in Higher Education (NCSEHE). The project explores the outcomes of equity groups using complex administrative data that allows for the tracking through university of all undergraduates enrolled in Australia.

Substantial work has already explored the hurdles faced by disadvantaged groups of students in accessing university. Such work has facilitated programs to increase representation of these groups in enrolments. The research discussed in this briefing offers a new perspective on analyses of equity in higher education by focusing on the outcomes of those disadvantaged students who succeed in reaching university. The underlying question that guides this research is – 'Are outcomes equal once students are through the gates of the university?'

The progress of a number of cohorts of university students is explored using data from the Higher Education Student Collection (HESC). The introduction in 2005 of an individual identifier – the Commonwealth Higher Education Student Support Number (CHESSN) – facilitates the tracking of students as they progress through their courses. The work undertaken here is based on analysis by the Commonwealth Department of Education (DOE, 2014; 2015). The analysis follows one cohort for nine years following commencement at university (from 2005 to 2013) and four cohorts for six years after commencement (commencers in 2005, 2006, 2007, and 2008). This Research Briefing focuses on students by socioeconomic (SES) background, residential location and Indigeneity.

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Key findings from this research are:

- Of all students who commenced a bachelor degree in 2005, 73.6 per cent had completed a degree by 2013 and a further 4.2 per cent were still enrolled.
- Among key equity groups, completion rates for the 2005 cohort nine years after commencement were lower than the national average.
- Nine years after commencing their degree:
  - Low SES students had a completion rate of 68.9 per cent;
  - Regional students had a completion rate of 69.8 per cent;
  - Remote students had a completion rate of 59.5 per cent; and
  - Indigenous students had a completion rate of 46.7 per cent.
- When more recent commencement cohorts are examined over a slightly shorter six-year period, the patterns of lower completion for equity groups remain the same.
- Other factors, such as type of attendance, mode of attendance, age and prior achievement (ATAR) are shown to influence completion rates.
- Previous research suggests that students who are members of equity groups are also more likely than average to have some of the other characteristics related to low completion or belong to multiple equity groups.
- The extent to which these inter-related factors explain the outcomes for equity groups is to be explored in further research.

Completion rates among equity groups nine years after commencement

Background

Accessing university has always been a fundamental issue for students from disadvantaged backgrounds. In the recent context of an expanding higher education system in Australia, some accessibility issues have been alleviated. The move to a demand driven system of funding university places has been a key policy influencing this outcome, and has been highlighted previously in the Joining the Dots series (Edwards & van der Brugge, 2012, 2013). This research, funded by the NCSEHE, provides evidence-based insights into the likelihood of completion for students from key equity groups who are growing in number as a result of the demand driven system.

Using a Commonwealth administrative database which links an individual student identifier (CHESSN) to the enrolment of each domestic bachelor level student in Australia from 2005 onwards, the progression of students can now be tracked, allowing an analysis of completions among particular groups of students that has not previously been possible. This data has been used in a limited way in recent years, for example in the Base Funding Review (Lomax-Smith, Watson, & Webster, 2011) and the Review of the Demand Driven Funding System (Kemp & Norton, 2014). However, the focus of these reviews has generally been overall completion rates, or completion by ATAR, rather than the outcomes of particular under-represented groups of students.

Analysis of earlier cohorts of students, based on the Commonwealth data collected prior to the introduction of the CHESSN, measured outcomes within institutions and could not track students if they moved between institutions (Martin, MacLauchlan, & Karmel, 2001). Other work on university attrition, retention and completions in Australia has relied on survey data, especially the Longitudinal Survey of Australian Youth (LSAY) (Marks, 2007; McMillan, 2005, 2011). While research based upon LSAY can track individuals over time and between institutions, these studies have been limited in their ability to estimate completion rates for students from small or underrepresented groups.

Of the previous research in Australia that has attempted to explore completion at the sub-group level, work by Marks (2007) using the Longitudinal Surveys of Australian Youth (LSAY) offers one of the most comprehensive examinations. The data analysed by Marks showed that overall, students' regional and socioeconomic characteristics had little influence on their likelihood of completing university: once low-SES students (measured by parental occupation) entered university, their background did not negatively affect their chances of completing a course after controlling for a range of other factors. Similarly, research by the Centre for the Study of Higher Education (CSHE) for Universities Australia examined a range of data and concluded that once at university, low-SES students had similar outcomes to medium- and high-SES students in terms of retention, success and completion, with the exception of remote and Indigenous students (CSHE, 2008).

However, more nuanced analysis by Marks did find some socioeconomic differences in completion when a different SES measure was used: students whose parents had not completed secondary school had the lowest expected completion rate (72%), students whose parents had a trade or vocational qualification had a higher expected completion rate (79%) and the highest expected completion rates were found among those whose parents' highest qualification was Year 12 (87%) or a degree or diploma (85%) – see Figure 1. Similarly, McMillan (2005) found that parental education was related to attrition from higher education but that parental occupation was not related to attrition.

Studies have identified a range of additional factors that are associated with retention and completion. For example, Marks found that non-completion of university courses is much more likely among academically weaker students and concluded that Year 12 results (ENTER, now ATAR scores) were the strongest correlate of expected course completion. Similar more recent analysis of the CHESSN data has also highlighted this correlation (Kemp & Norton, 2014).

Other factors that have been associated with higher likelihood of attrition and lower likelihood of completion include being male (Marks, 2007; Martin, et al., 2001); being older (Martin, et al., 2001); enrolment in generalist fields of education (Martin, et al., 2001; McMillan, 2005), studying part-time or externally (Martin, et al., 2001); and undertaking long hours of paid work while studying (McMillan, 2005; Vickers, Lamb, & Hinkley, 2003).

Cohort Data

As noted above, this report utilises data from the HESC based on a broader analysis by the Department of Education (DOE, 2014; 2015). The discussion is based on the tracking of the 2005 commencement cohort for a period of nine years. The population in question is bachelor-level, domestic students. The characteristics of students used in this analysis are based on situation at commencement of university, and limited to the definitions used by the DOE in collecting the administrative data that this analysis is derived from.

Further analysis is also undertaken based on subsequent cohorts of commencers in order to assess whether there are notable differences in the progression of students in different cohorts. As such, commencers in 2005, 2006, 2007 and 2008 have been examined and compared over a six year period. Table 1 provides an overview of the cohorts used in this Research Briefing. The figures and tables displayed in the discussion below focus on the 2005 cohort eight years after completion, although reference in the text is also made to the cohorts tracked over six years.

Table 1 Domestic Bachelor Student cohorts examined in these analyses

Cohort commencement year	Years tracked	
	Nine-year	Six-year
2005	2005-2013	2005-2010
2006	–	2006-2011
2007	–	2007-2012
2008	–	2008-2013

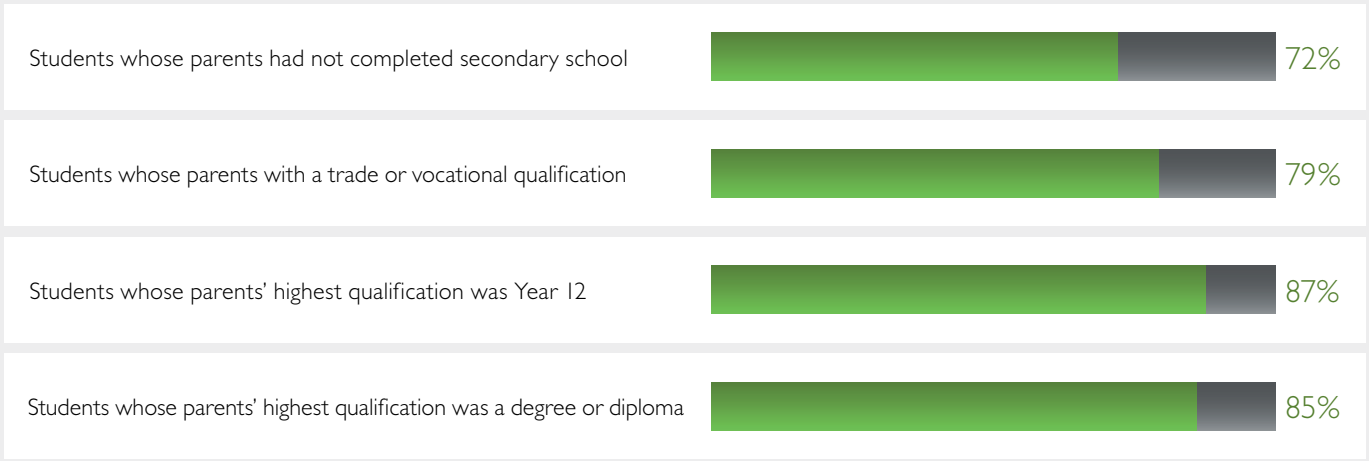


Figure 1 Prior Research: Completion rates by parental education background using LSAY (Marks, 2007)

Completing university in Australia – National-level outcomes

The progression through university of each cohort is explored according to four specific outcomes: completed by the end of the period under analysis; still enrolled at the end of the period dropped out in first year or had not returned to university after first year; and dropped out of study at some stage after first year. The availability of the CHESSN has permitted the tracking of students both within and between institutions for the measurement of these outcomes. 'Completion' in this analysis refers to whether a student had completed an award course within the period of analysis. This completion may not necessarily be the same course that the student commenced in 2005. For example, a student who commenced a Bachelor of Arts in 2005, but changed course and completed a Bachelor of Commerce in 2010 would be counted as 'completed'.

Overall outcomes – a national baseline

The distribution of these outcomes for the nine-year cohort is shown in Figure 2. These figures act as benchmarks against which we can compare the equity group data which follow.

Student completion rates show that 73.6 per cent of domestic students who commenced a bachelor degree in 2005 had completed a degree by 2013 (nine years following commencement). A further 4.2 per cent remained in study in 2013, 8.2 per cent dropped out in or at the end of first year and did not return to higher education within the nine years, and 14.0 per cent were found to have dropped out at a later stage within the nine-year period.

In the analysis of the four cohorts over six years (commencers in 2005, 2006, 2007, and 2008), the pattern remained consistent, with only minor differences in the distribution of students across the four outcomes used here. This is important, because it shows that the figures for the 2005 cohort are not out of the ordinary. Given the relative consistency, the data relating to the six-year cohorts are not displayed separately in the briefing.

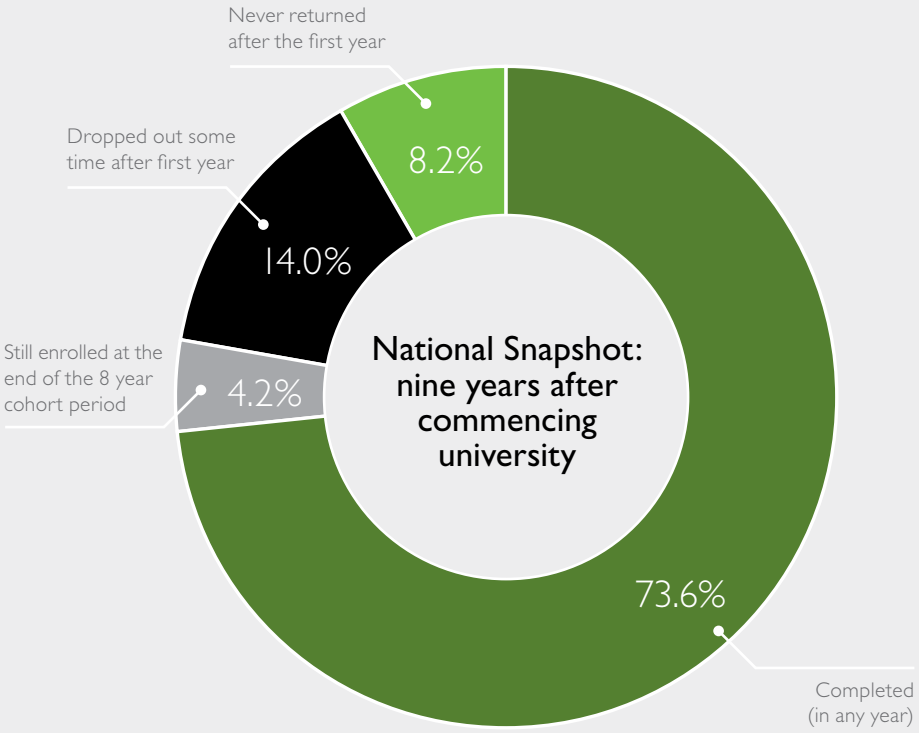


Figure 2 Enrolment outcomes for domestic bachelor students commencing in 2005 over an nine-year period to 2013

Completion among equity groups

Three key equity group indicators are available in the cohort data for exploring university outcomes: SES, region of residence and Indigeneity. Equity group differences in the outcomes for domestic bachelor level commencers in 2005, tracked over a nine year period, are shown in the tables below.

Socioeconomic Status

Outcomes for students commencing in 2005 and tracked through to 2013 are shown by SES group in Figure 3. In this data, SES is allocated based on the postcode of permanent home residence of the student at commencement of their studies. The SES value is derived from the 2006 SEIFA Education and Occupation Index for postal areas, with postal areas in the bottom 25% of the population aged 15-64 being classified as Low SES. The data reveal a notable difference in completion rates between the commencers from high SES backgrounds and those from low SES backgrounds. Nine years following commencement of their degree, about two thirds (68.9 per cent) of students from low SES backgrounds had completed their degree compared with more than three quarters (77.7 per cent) of those from high SES backgrounds. Low SES students were more likely than other students to have dropped out before commencing their second year or to have dropped out at some stage after first year.

Interestingly, the only category with similar proportions of commencers across SES groups after nine years is those students still enrolled. As highlighted in prior research (Martin, et al., 2001), the link between part-time study and lower completion rates is notable in the national figures. However, while low SES students are more likely to study part-time, the data presented in Figure 3 suggest that lower completion as a result of remaining in study explains little of the differences between SES groups.

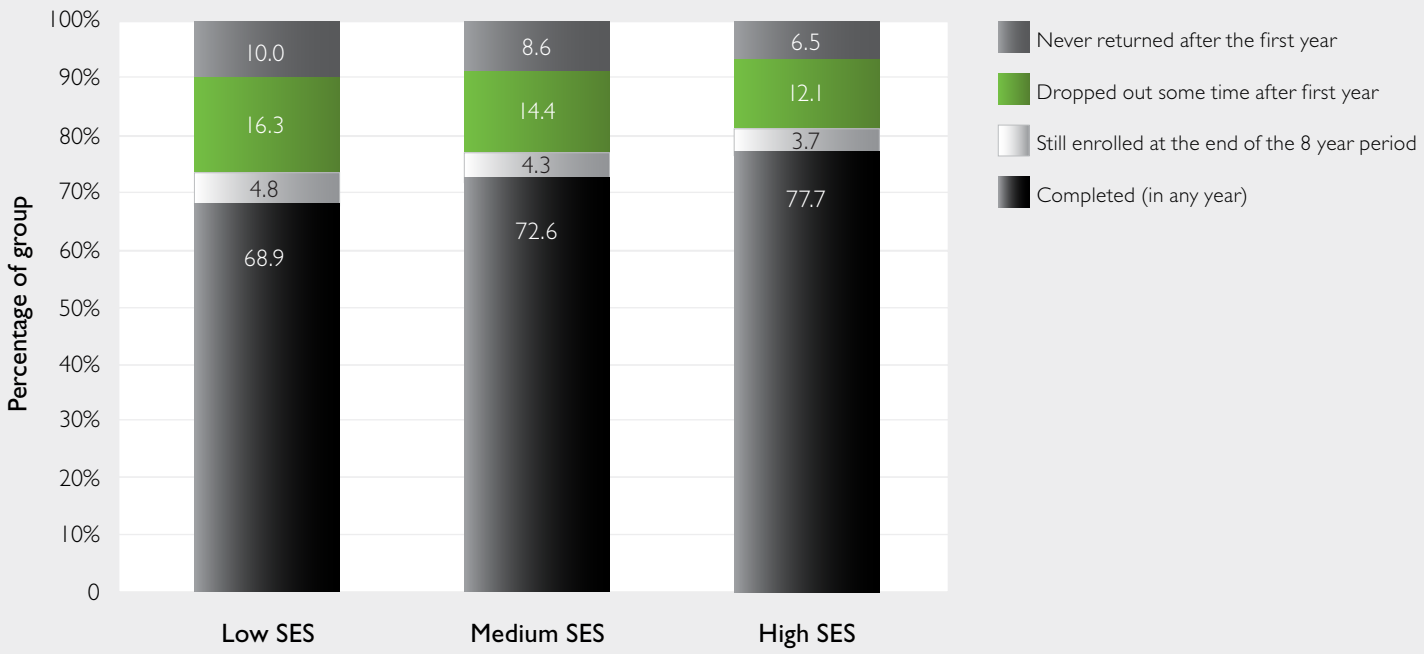


Figure 3 Enrolment outcomes for domestic bachelor students commencing in 2005 over an nine-year period to 2013, percentage of cohort by SES

Residential location

Outcomes nine years after completion for domestic university commencers in 2005 by residential location (at commencement of degree) are shown in Figure 4. Among this cohort, those residing in metropolitan areas were more likely to have completed their degree within nine years (75.0 per cent), compared to those from regional areas (69.8 per cent). Students residing in remote areas were substantially less likely to have completed their degree than those from regional or metropolitan areas, with 59.5 per cent of this group having completed their degree nine years after commencement. Students in the remote group were more likely to have dropped out before second year (14.8 per cent) or to have dropped out at some other stage within the nine-year period (19.9 per cent). The outcomes for regional students mirror those reported above for the low SES group.

As was the case for other characteristics, analyses by residential location across the four six-year cohorts did not show any substantial difference in outcomes.

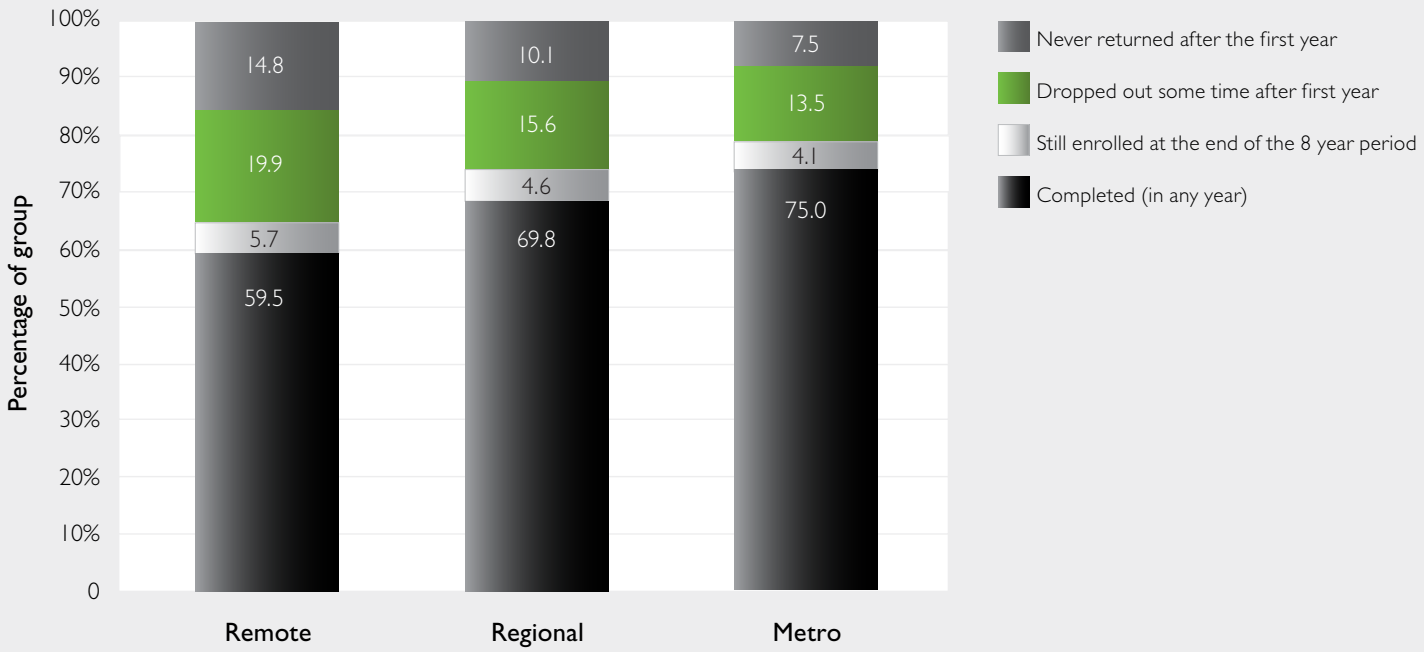
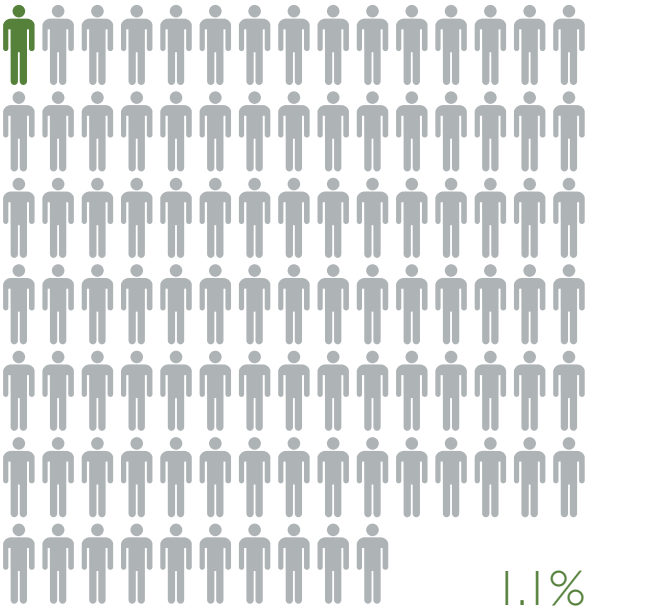


Figure 4 Enrolment outcomes for domestic bachelor students commencing in 2005 over an nine-year period to 2013, percentage of cohort by residential location

Indigeneity

Indigenous students are significantly under-represented in the higher education student population. Previous analysis for the Joining the Dots series examining Census data from 2011 has shown that Aboriginal and Torres Strait Islander peoples made up 1.1 per cent of the higher education student population despite accounting for 2.5 per cent of the whole population (Edwards & van der Brugge, 2012). Figure 5 shows that the completion rate of Indigenous students nine years after commencement in 2005 was below half (46.7 per cent). More than one in five Indigenous students in this cohort had dropped out of university before their second year and another quarter had dropped out at some other stage in the nine year period. The differences between the outcomes of Indigenous and non-Indigenous students are substantial. Analysis of the outcomes of the 2005, 2006, 2007 and 2008 cohorts six years after commencement highlights the consistency of these patterns across cohorts.



Representation of Indigenous students in the higher education population

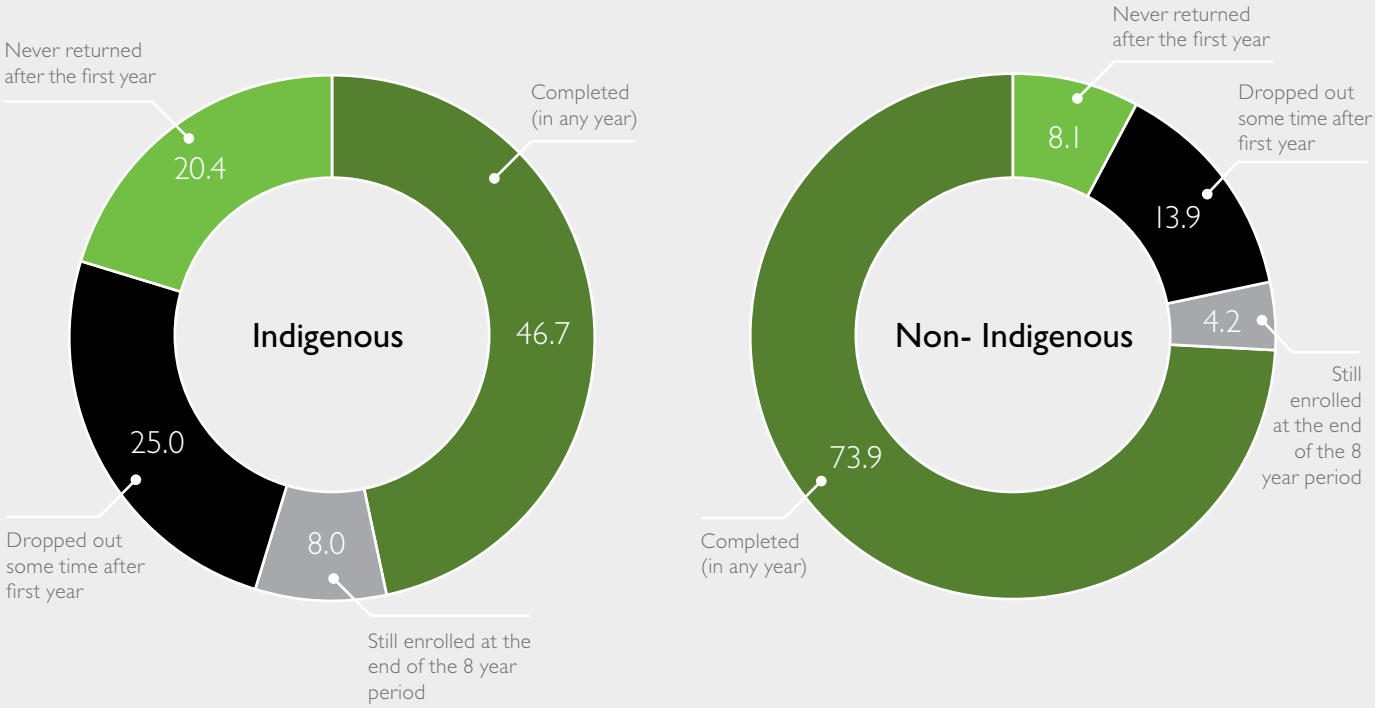


Figure 5 Enrolment outcomes for domestic bachelor students commencing in 2005 over an nine-year period to 2013, percentage of cohort by Indigenous status

Completion rates by enrolment and demographic characteristics

As suggested in the background section of this briefing, a range of factors are associated with university completion and the national figures discussed above hide nuances that reveal a different picture of completion rates. The completion rates for the 2005 cohort after nine years based on a number of enrolment and demographic variables are displayed in Figure 6 and Figure 7.

The figures show differences in completion rates nine years after commencement by key enrolment and demographic characteristics. Of particular note is the lower likelihood of completion for part-time students, external students (that is off-campus, distance, and/or online modes of study) and students with lower ATAR scores (especially below 60).[1] These findings confirm findings from previous studies (Kemp & Norton, 2014; Lomax-Smith, et al., 2011). National level data on completions by gender and age also highlight some differences in outcomes for students, with males and commencers aged 25 and over showing lower completion rates. The patterns apparent here for the 2005 commencing cohort over nine years were found to be similar for the 2005, 2006, 2007 and 2008 cohorts over a six year period of time, highlighting the relative consistency of this finding across cohorts.

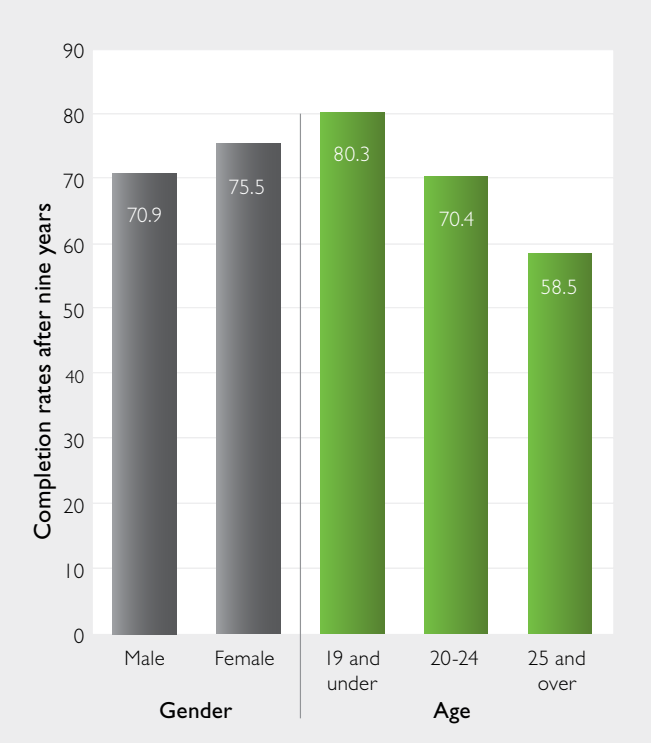
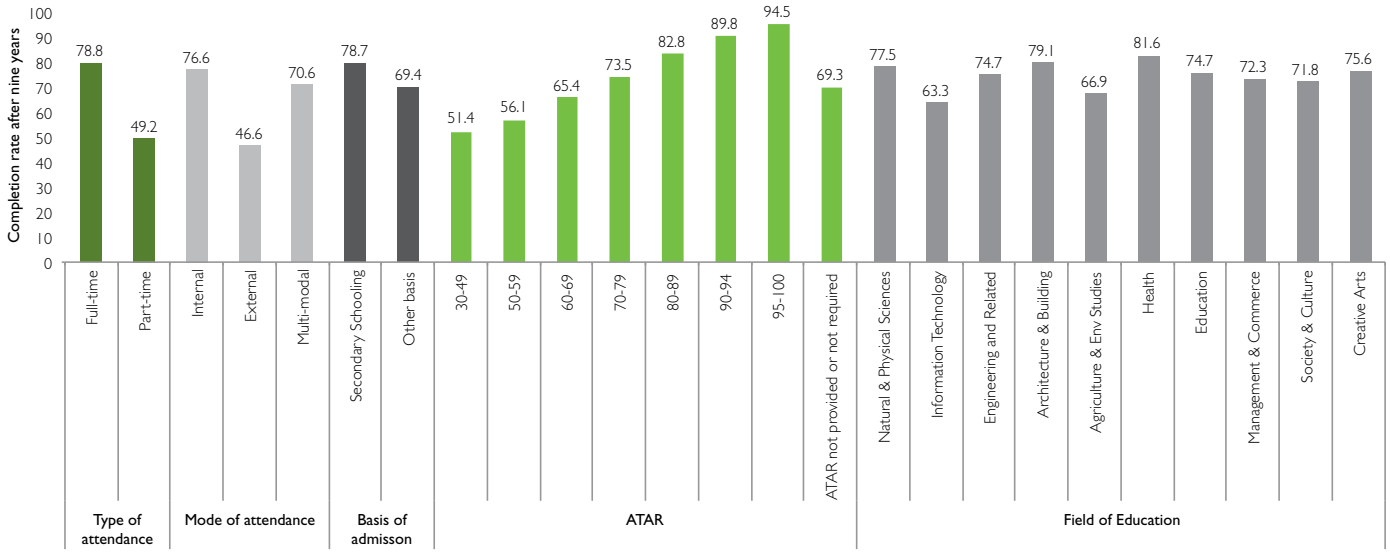


Figure 7 Completion rates, nine years after commencement, by gender and age, domestic bachelor commencers in 2005

1 Only slightly more than half of domestic bachelor commencements have an ATAR recorded. Therefore the data relating to completion by ATAR is limited to a sub-set of the full student population. In contrast, the other categories explored cover the full commencement cohort.



Note: Some of the groups and categories displayed above are based on relatively small commencement cohorts, and thus the significance on the results based only on the small group should not be overstated. Specifically, the ATAR band 30-49 relates to only 381 students and the 50-59 group to 1,808 students out of a total 165,905 commencers in 2005.

Figure 6 Completion rates, nine years after commencement, by selected enrolment characteristics, domestic bachelor commencers in 2005

Discussion

Explaining the differences in equity groups

The analysis presented in this Research Briefing offers preliminary insights into the progress of equity groups through the higher education system. However, understanding the relationships between membership of equity groups and other demographic and enrolment characteristics is important in developing a more nuanced picture of undergraduate completions in Australia. While the currently available data does not allow for the cross-tabulations required to examine these issues with accuracy, such data will be available later in the project to which this Research Briefing contributes. In the mean time, some exploration of variables influencing completion rates is still possible using the specific enrolment characteristics of students in each of the equity groups examined in the analyses above.

As shown in Figure 5 and Figure 6, lower completion rates attach to a number of specific enrolment and demographic characteristics. Overall the main variables indicating higher likelihood of non-completion were part-time enrolment, external enrolment, ATAR below 60, and age over 25. When Australian enrolment data are examined, students within the equity groups of interest here – that is, low SES, Remote, Regional and Indigenous students –are more likely than average to possess the enrolment and demographic characteristics that have been found to be associated with lower completion rates. Furthermore, students who fit into an equity group have a higher likelihood of belonging to one or more of the other equity groups in addition. The relationships between the key equity groups and the predictors of lower completion are summarised in the matrix in Table 2. A tick is included in the relevant cell where students in each equity group have a greater propensity than the national average to fit into a category with a cross-referenced characteristic. This diagram illustrates the potential influence of multiple predictors on the completion rates of disadvantaged students.

Table 2

Equity group membership and relationship with other characteristics

Variables related to lower completion	Equity groups			
	Low SES	Remote	Regional	Indigenous
Studying part-time	✓	✓	✓	✓
Studying off campus	✓	✓	✓	✓
Low ATAR (<60)	✓	✗	✓	✓
Aged Over 25	✓	✓	✓	✓
Low SES	–	✓	✓	✓
Remote	✓	–	–	✓
Regional	✓	–	–	✓
Indigenous	✓	✓	✓	–

Note: ticks indicate members of equity group are in addition more likely than national average to have the 'low completion' characteristic. (Source: DOE, HESC 2008 and 2012 enrolment files).

The extent to which the enrolment or demographic characteristics influence the completion rates of students within specific equity groups is important in the context of developing strategies to overcome the barriers to completion for higher education students.

It is highly likely that there is a range of compounding factors that limit the likelihood of completion for many students in higher education, particularly those belonging to equity groups. While this analysis has been limited in its ability to explore the impact of these relationships, the next stage of this research will undertake these more detailed analyses.

Acknowledgement

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MELBOURNE OFFICE

19 Prospect Hill Road (Private Bag 55)
Camberwell VIC 3124

Telephone +61 3 9277 5555
Facsimile +61 3 9277 5500

ACN 004 398 145 ABN 19 004 398 145