

Graduate outcomes for disadvantaged students in Australia: does the rising tide lift all boats?

COVER PAGE

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Word count: 6 249
Tables: 9
Figures: 0

Pitman, T., Roberts, L., Bennett, D., & Richardson, S. (2017). An Australian study of graduate outcomes for disadvantaged students. *Journal of Further and Higher Education*. Published Online First July, 2017. <http://dx.doi.org/10.1080/0309877X.2017.1349895>

Graduate outcomes for disadvantaged students in Australia: does the rising tide lift all boats?

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Funding

This work was supported by the National Centre for Student Equity in Higher Education under Grant NCSEHE2016CU.

Acknowledgement

The research team would like to thank the Australian Government Department of Education and Training, which provided the 2014 data file for the Australian Graduate Survey.

Abstract

The question of whether or not disadvantaged students are realizing the same benefits from higher education as their peers is of fundamental importance to equity practitioners and policymakers. Despite this, equity policy has focused on access to higher education and little attention has been paid to graduate outcomes. The Australian study reported here used national data to investigate relationships between disadvantage and graduate outcomes. The study provides critical insights into how access to higher education does, or does not, lead to improvements in post-graduation equity. The study reveals that outcomes are not equal for all students and that higher education disadvantage persists for many students after they have completed their studies. Whilst the specific findings relate to the Australian university sector the broader discussion of the paper is relevant to higher education policy more generally, especially in terms of how governments align institutional processes to measure and scrutinize achievement towards public policy objectives.

Keywords: higher education, equity, low socio-economic, women in non-traditional areas, Indigenous, non-English speaking background, disability

Disclosure statement

None of the authors have derived any financial gain from the applications of this research.

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Graduate employability for disadvantaged students in Australia: does the rising tide lift all boats?

Introduction

Historically, participation in higher education has been promoted as an end in and of itself. In contemporary public policy discourse, however, the utilitarian benefits of higher education are increasingly prioritized. Compared to 40 years ago, higher education sectors are more diversified at the systemic level and their teaching encompasses a greater range of professions. This is perceived by policymakers as enhancing the relationship between educational institutions and the external world, including greater responsiveness to labour market needs and providing high-level occupational preparation in a more applied and less theoretical way (OECD, 2008). At the individual level, and notwithstanding cyclical fluctuations in market demand, university graduates attract higher salaries; they are more likely to be employed full time and to enjoy job security than are workers in less-skilled occupations (Watson, 2005).

There is widespread and bipartisan belief that transitioning from an elite to mass system of higher education will deliver social and economic gains for both the individual and the state. As higher education systems grow, increasing access for groups of people historically under-represented in higher education becomes more politically feasible. This is possible because widening access does not occur at the expense of students from more privileged backgrounds (Sellar & Gale, 2016). Thus, concomitant with policies designed to up-skill national workforces through increased access to higher education, many developed nation states have enacted complementary policies designed to ensure that individual benefits are distributed equitably across a nation's population.

In most developed nation states the overwhelming focus of equity policy has been at the inputs side of higher education; that is increasing aspirations for, and access to, higher education. Attainment rates are also considered, but to a lesser extent. In Australia for example, policies enacted over quarter of a century (cf. Bradley, Noonan, Nugent, & Scales, 2008; Department of Employment Education and Training, 1990) have prioritized enrolment targets over graduation or employment targets. In the UK, the national strategy is for all people with the potential to benefit from higher education to have the opportunity to participate *and* succeed (Department for Business Innovation and Skills, 2014), whereas the Pitman, T., Roberts, L., Bennett, D., & Richardson, S. (2017). An Australian study of graduate outcomes for disadvantaged students. *Journal of Further and Higher Education*. Published Online First July, 2017. <http://dx.doi.org/10.1080/0309877X.2017.1349895>

primary mechanism for achieving this vision is based on access agreements. Moreover, statistical reporting by the UK Office for Fair Access concentrates on access and participation rates. The same has been true historically of higher education equity analysis and reporting in the United States (US) (cf. Cahalan & Perna, 2015). The issues here is the general assumption that increased access and participation for disadvantaged students will lead to consequential post-graduation benefits. This can also be seen in the New Zealand Government's 2014-2019 strategy for tertiary education, which has tripartite aims of access, achievement and outcomes, with the latter being underpinned by indicators of success in regards to employment outcomes for disadvantaged students (Ministry of Education and the Ministry of Business Innovation and Employment, 2014).

Despite the focus on access, there is international and widespread recognition of the need to also ensure that graduates from disadvantaged backgrounds achieve equitable post-graduation outcomes, and there is also growing acknowledgement that this may not yet be the reality (Aird, Miller, van Megan, & Buys, 2010; Hossain & Bloom, 2015; Milburn et al., 2013). In a context in which graduate employability is becoming an important yardstick against which to measure institutional effectiveness, the question of whether or not disadvantaged students are realizing the same benefits of higher education is also of fundamental importance to equity practitioners and policymakers.

In a recent UK study, Britton, Dearden, Shephard and Vignoles (2016) found that graduates from more affluent family backgrounds earn significantly more after graduation than their poorer counterparts, even after completing the same degrees from the same universities. There is also a gender dimension: in line with many other countries, female graduates in Australia earn significantly less than male graduates (Graduate Careers Australia, 2014), and in similar international studies the difference in salaries between genders cannot be explained, for example by hours worked, prior work experience, etc. (cf. Jagsi et al., 2013). However, concepts such as gender and social class are very broad classifications of 'disadvantage', and what it means to be disadvantaged requires greater contextualization and specification in order to inform social policy.

In this paper we draw upon the quantitative findings of a research project funded by the Australian National Centre for Student Equity in Higher Education. The study employed national graduate outcome data to investigate the relationships between disadvantage and graduate outcomes throughout Australia. This provided critical insights into how access to

higher education did – or did not – lead to improvements in post-graduation equity. Six proxies for disadvantage were considered:

- (1) being from a socio-economically disadvantaged background (Low-SES);
- (2) being an Indigenous Australian;
- (3) women graduating from non-traditional areas of study, i.e. science, engineering and IT-related courses (WINTA);
- (4) having a disability;
- (5) coming from a non-English speaking background (NESB); and
- (6) coming from a regional (i.e. non-metropolitan) background.

These proxies were not arbitrary choices: they conformed to the six officially recognized groups of students that inform contemporary higher education equity policy in Australia and indeed have done so for more than a quarter of a century (Martin, 1994).

Detailed statistics on the outcomes for each of these groups has been presented elsewhere (Richardson, Bennett & Roberts, 2016). Our intent here is to look more critically at the factors that influence post-graduation outcomes for disadvantaged students and how these factors work in combination to aid or hinder success. Social disadvantage has been likened to being stung multiple times by a bee (Karelis, 2008) in that its effect is composite rather than non-compounded. Similarly, advantage occurs through the interplay of various social economic and cultural factors. Whilst the specific findings of this study relate to the Australian university sector, the broader discussion of the paper is relevant to higher education policy more generally, especially in relation to how governments align institutional processes to ensure that the aims of their public policies can be effectively measured and scrutinized.

Research method

The study underpinning this paper sought to investigate the relationships between disadvantage and graduate outcomes in Australia, with disadvantage defined as a graduate belonging to one or more of the six proxies identified above. Once ethical approvals were in place, the study utilized the raw data from the 2014 Australian Graduate Survey (Department of Education and Training, 2014), which recorded the graduate outcomes of 142,647 graduates who completed their studies in 2013 and 2014. Data were collected between four and six months after graduation, at which time many graduates were simultaneously

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undertaking multiple activities such as working, studying and searching for work. The number of survey respondents in each disadvantaged group is shown at Table 1.

Table 1: Study sample

<u>Proxy for disadvantage</u>	<u>Number of respondents</u>
Graduates with a disability	4 229
Indigenous graduates (Australian first peoples)	1 106
Regional or remote graduates	25 240
Graduates with a non-English speaking background (NESB)	39 408
Low SES graduates (from the bottom socio-economic quartile)	11 151
Women graduating from non-traditional areas of study (WINTA)	8 603

Full details of the analysis and regression findings have been presented in a report to the National Centre for Student Equity in Higher Education (Richardson et al., 2016). A series of binomial and multinomial regressions was conducted for each of the disadvantaged groups predicting employment (yes/no) and a wider range of graduate outcomes (full time work, part time work, self-employed and studying, compared to neither working nor studying). The probability of each outcome was estimated using three sets of predictors:

- (1) Demographic – Age, gender, disability, Indigenous status, first language, place of birth, SES, state of residence, place of residence (metropolitan-regional)
- (2) Educational – Institution group, institution location (metropolitan-regional), level of study, broad field of education, mode of study, type of fees paid
- (3) Educational experience – Satisfaction, generic skills, graduate qualities, work during final year of study.

In this paper we first present the key findings and then we discuss some of the critical issues in achieving equitable outcomes for all higher education graduates. Broadly speaking, these relate to the outcomes themselves, and to how the outcomes are measured. We finish with limitations of the study and suggestions for further research.

Findings

Paid work in the final year of study

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Our analysis indicated that undertaking paid work in the final year of study was the single most important factor in predicting whether a graduate would be working between four and six months after graduation. This likelihood was most significant for students with a disability, who were 15 times more likely to be in full-time work, and 11.6 times more likely to be in part-time work, if they had undertaken paid work in their final year of study. The likelihood was almost as significant for Indigenous graduates, especially in relation to self-employment (Table 2). The likelihood was least marked for WINTA graduates. We include in each table the figures for all Australian graduates, for comparison.

In line with this finding was that, across all groups, students who had studied full time and/or had studied on campus tended to be less likely to find work post-graduation; these were modes less conducive to undertaking paid work at the same time as studying.

Table 2: Post-graduation outcome for graduates who held paid work in their final year of study (times more likely than those who did not hold paid work)

<u>Group</u>	<u>Working full time</u>	<u>Working part time</u>	<u>Self-employed</u>	<u>Studying</u>
Disability	15.0	11.6	9.5	3.3
Indigenous	13.4	13.9	14.9	4.2
Regional	9.0	8.7	11.4	3.2
NESB	8.1	12.2	7.0	2.9
Low-SES	12.6	14.4	11.2	3.8
WINTA	7.8	10.9	6.2	2.9
All graduates	9.5	10.0	8.3	3.5

More than 70 per cent of graduates reported undertaking paid work in their final year of study, with the proportion highest among graduates from regional areas who were Indigenous or who were from low-SES backgrounds. Of those graduates who reported paid work during their final year of study, more than 60 per cent still worked for the same employer. Of this 60%, two-thirds of graduates were not seeking alternative employment.

In terms of the importance of the qualification to their employment post-graduation, less than a quarter of graduates who were still working for the same employer were in a role for which their qualification was a formal requirement. Almost half reported that their qualification was only somewhat important or not important (Table 3). Importance of qualification was highest for Indigenous graduates (31.0%) and lowest for the WINTA group (21.4%). This last finding is perhaps surprising as it suggests that women enrolling in Pitman, T., Roberts, L., Bennett, D., & Richardson, S. (2017). An Australian study of graduate outcomes for disadvantaged students. *Journal of Further and Higher Education*. Published Online First July, 2017. <http://dx.doi.org/10.1080/0309877X.2017.1349895>

science, engineering and IT-related courses are, in general, not securing positions relevant to their expertise.

Overall, these findings show that paid work in the final year of study is associated with improved full-time working opportunities for all graduates. This relationship is strongest for Indigenous graduates, graduates with a disability and graduates from low-SES backgrounds. Rather than suggesting a causal relationship between qualification and employment, however, it may indicate the continuation of work that is not at a graduate level. To explore this further, we examined the proportion of graduates in full-time employment who stated that this was their first full-time job other than vacation work. The majority of WINTA (56.5%) and NESB (57.7%) graduates reported this to be the case, with Indigenous graduates (30.9%) least likely to agree. This further reinforces the reality that the relationship between study and work is not linear. In some cases study leads to work, in others work provides the person with the economic resources to study, and for some students the two activities may be more incidental to each other. An additional consideration is the timing of the survey. Since graduates were surveyed no more than six months post-graduation, the opportunity to exploit their qualification for employment purposes may not yet have arisen.

Table 3: Importance of qualification to employment (% response)

	<u>Formal requirement</u>	<u>Important</u>	<u>Somewhat important</u>	<u>Not important</u>	<u>Do not know</u>
Disability	24.8	25.5	16.6	31.9	1.3
Indigenous	31.0	30.7	15.6	21.3	1.4
Regional	29.5	26.9	18.1	24.8	0.6
NESB	22.8	28.2	20.2	27.4	1.5
Low SES	30.1	25.5	17.7	25.7	1.1
WINTA	21.4	20.6	16.9	40.2	0.8
All graduates	24.1	26.0	19.8	29.3	0.8

Nature of employment

More graduates found employment in industry and commerce (broadly for-profit, private business ventures) than in other sectors, and this trend held true for each of the equity group of students (Table 4). However, within this finding there were observable differences. More than half of WINTA and NESB graduates were working in industry and commerce (54.0% and 53.0% respectively), whereas less than a quarter of Indigenous graduates were working

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in this sector. Instead, Indigenous graduates had significantly higher rates of employment in the public sector.

Table 4: Employment sector in which graduates hold employment

<u>Equity group</u>	<u>Graduates (count)</u>	<u>Industry sector (%)</u>			
		<u>Government</u>	<u>Professional practice</u>	<u>Industry & commerce</u>	<u>Not-for-profit organization</u>
Disability	2 757	6.9	9.1	37.5	6.6
Indigenous	870	11.3	5.1	24.1	8.7
Regional	21 244	6.9	8.8	31.8	4.7
NESB	22 467	3.9	9.4	53.0	3.3
Low SES	16 765	6.1	8.2	36.8	4.9
WINTA	5 630	5.3	6.3	54.0	2.9
All graduates	106 467	6.5	9.3	42.3	4.4

A closer analysis of the employment categories at Table 4 reveals the following key points; these are highlighted at Table 5.

- (1) Graduates with a disability were most likely to be employed in education professions and least likely to be employed in engineering fields or as manual workers;
- (2) Indigenous graduates were most likely to be employed in education professions and least likely to be employed in engineering or IT-related fields;
- (3) Graduates from non-English speaking backgrounds were most likely to be employed as health professionals and least likely to be employed in social professions;
- (4) Graduates from low-SES backgrounds were most likely to be employed in education professions and least likely to be employed in IT-related jobs; and
- (5) Women who had graduated from science, engineering and IT-related studies were most likely to be employed as sales workers and least likely to be employed in social professions.

Again, the results for WINTA graduates stood out markedly. Despite the nature of their qualifications, only one in eight (12.1%) WINTA graduates found employment in the engineering or IT fields. That figure rose to only 14.2% when the partially related field of health professional was included.

Table 5: Employment category (%)

Equity group	Employment category (% employment)										
	Health	Education	Business, information, marketing	Community & personal service workers	Clerical & administrative worker	Sales worker	Manager & Administrator	Social	Engineering	Manual worker	Information & communication technology
Disability	12.5	15.6	10.1	9.8	11.0	8.1	6.9	4.9	2.1	2.1	2.5
Indigenous	12.8	18.6	7.5	13.6	9.0	4.5	7.1	11.4	1.3	2.0	1.3
Regional	20.8	19.8	7.1	9.3	6.9	6.0	7.5	4.0	3.2	2.3	1.2
NESB	11.5	9.3	12.6	9.6	10.8	10.4	6.2	1.7	3.3	3.8	3.9
Low SES	18.3	18.6	7.4	9.5	9.0	8.5	6.0	3.7	2.2	2.7	1.8
WINTA	3.1	10.5	4.7	11.0	8.7	15.5	4.4	0.6	7.7	2.5	4.4
All graduates	14.2	14.1	10.4	9.6	9.4	8.7	8.1	3.0	3.0	2.6	2.3

Job security and earnings

Security of tenure is another important measure of employment outcomes and here there was also variation in the type of employment contract held by graduates, when types of disadvantage were considered. Generally speaking, graduates from all groups were more likely to hold a permanent or open-ended (continuing) contract than a fixed term or casual contract. Indigenous graduates had the highest rate of permanent or open-ended contracts and were the only cohort for which this was true of the majority of graduates (55.3%).

In contrast, women graduating from non-traditional areas of study held the highest rate of temporary or casual contracts (Table 6). When these findings are considered in relation to those outlined earlier in this paper, quite different post-graduation outcomes per equity group of student become more evident. At one extreme, Indigenous students had relatively high levels of security of tenure and were more likely to be working in positions relevant to their studies. Conversely, WINTA graduates were much less likely to attain employment related to their studies and their employment was more tenuous.

Table 6: Type of employment contract held by graduates (% of sample)

<u>Student group</u>	<u>Graduates working (count)</u>	<u>Permanent or open-ended contract</u>	<u>Fixed-term contract > 12 months</u>	<u>Fixed-term contract < 12 months</u>	<u>Temporary or casual contract</u>
Disability	2 757	46.4	7.6	14.4	31.6
Indigenous	870	55.3	9.4	14.2	21.1
Regional	21 244	49.8	7.7	18.1	24.4
NESB	22 467	43.4	9.5	11.4	35.7
Low SES	16 765	49.4	7.5	16.8	26.3
WINTA	5 630	38.4	8.2	10.8	42.6
All graduates	106 467	48.4	8.0	14.5	29.1

Employment *per se* is not the only measure of successful graduate outcomes. Another indication of a positive employment outcome is graduate salary, and we next analyzed salary differentials for graduates employed full time (FT) and part time (PT) (Table 7). Here again, key patterns emerged; these are listed below.

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- (1) Indigenous graduates earned more than any other group of graduates analyzed in this study, both in full-time and part-time employment;
- (2) Regional graduates were above the median wage in both full-time and part-time employment;
- (3) Low-SES graduates out-performed other graduates in part-time employment salaries, but in full-time employment they earned below the median wage;
- (4) Graduates from non-English speaking backgrounds and women graduating from non-traditional disciplines performed the worst of all groups, earning well-below median wages in both full and part-time employment; and
- (5) WINTA graduates were the only cohort who recorded more people in part-time than full-time employment.

Table 7: Salary Outcomes for graduate students (count, salaries in Australian dollars)

<u>Student group</u>	<u>Graduates in FT work</u>	<u>Median salary for FT work</u>	<u>Graduates in PT work</u>	<u>Median salary for PT work</u>
Disability	1 447	60 000	1 310	20 000
Indigenous	576	61 000	294	26 000
Regional	13 242	60 000	8 002	25 000
NESB	12 006	53 000	10 461	18 371
Low SES	10 040	59 700	6 725	21 840
WINTA	2 615	59 930	3 015	15 000
All graduates	62 438	60 000	44 029	20 000

Breaking graduate salaries into ranges identified further patterns as shown at Table 8. More than a quarter of Indigenous graduates in work earned \$70 000 or above. Further, a higher percentage of Indigenous and regional graduates earned \$70 000 or above than did all employed graduates in Australia. In contrast, the WINTA and NESB cohorts had much higher proportions of graduates earning less than \$25 000.

In summary, it was generally true that post-graduation employment outcomes were positive for all graduates. On average, being employed in the final year of study increased a graduate's likelihood of being employed post-graduation almost tenfold. Whilst more than half of all graduates reported that their qualification either important or a formal requirement for their graduate position, 29.3% reported that it was "not

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important”. Around four out of ten graduates found employment in industry and commerce, with the largest group (14.2%) working as health professionals. Almost half of graduates (48.4%) found job security in the form of a continuing or open-ended contract. The median salary for all graduates was \$50 000, with the largest proportion earning between \$50 000 - \$69 999.

Table 8: Salary categories (% of sample)

<u>Student group</u>	<u>Below \$25 000</u>	<u>\$25 000 - \$49 999</u>	<u>\$50 000 - \$69 999</u>	<u>\$70 000 or above</u>
Disability	30.8	23.8	25.6	19.8
Indigenous	16.8	23.2	34.3	25.7
Regional	20.7	24.0	31.2	24.0
NESB	37.1	25.2	21.4	16.4
Low SES	23.3	25.3	31.1	20.3
WINTA	41.5	21.5	20.0	17.0
All graduates	26.6	23.3	26.8	23.3

Indigenous graduates in general reported the best employment outcomes of all graduates as measured by security of tenure, median salary and the proportion of graduates earning \$70 000 or above. The relationship between qualification and employment was also the highest. Also notable was that a greater proportion of Indigenous graduates were employed in the public sector than any other graduate group.

Regional students also fared quite well, in general exceeding all but Indigenous graduates in terms of security of tenure, median salary, proportion of graduates earning \$70 000 or above and relevance of qualification to employment. In all these aspects, regional students were well above the average outcomes for all graduates.

Outcomes for graduates from low-SES backgrounds were more mixed. Whilst they fared well in regards to security of tenure, relevance of qualification and salaries in part-time employment, graduate outcomes for low-SES students were below average for full-time employment and also below average in the proportion of graduates earning \$70 000 or above.

Graduates with a disability were well above average in their attainment of employment relevant to their qualifications and they also attracted full-time employment salaries well above average. However, part-time salaries were below average, as was the proportion of graduates earning \$70 000 or above. Furthermore, a lower-than-average proportion of graduates with a disability secured employment in permanent or open-ended contracts.

Graduates from non-English speaking backgrounds experienced poor graduate outcomes compared to the other equity groups, with below average results for security of tenure, median salaries for full and part-time employment, and the proportion of graduates earning \$70 000 or above. The only measurement in which this group saw an above-average result was the reported relevance of their qualification to their graduate work.

By far the poorest graduate outcomes were experienced by women graduating from science, engineering and IT-related courses. The WINTA group ranked last in security of tenure, relevance of qualification and median part-time salaries. They were also well below average in median full-time salaries and the proportion of graduates earning \$70 000 or above. The rankings for these categories are shown at Table 9.

Table 9: Post-graduation outcomes ranked for all eight graduate cohorts

<u>Student group</u>	<u>Security of tenure</u>	<u>Relevance of qualification</u>	<u>Median salary (FT)</u>	<u>Median salary (PT)</u>	<u>Earnings > \$70 000 (%)</u>	<u>Employment mode</u>
Indigenous	1	1	1	1	1	1
Regional	2	2	=2	2	2	2
Low-SES	3	3	6	3	4	3
All graduates	4	6	=2	=4	3	4
Disability	5	5	=2	=4	5	5
NESB	6	4	7	6	7	6/7*
WINTA	7	7	5	7	6	7

*NESB is bimodal since it is ranked 6th twice and 7th twice

Broadly speaking, post-graduation outcomes were above average for Indigenous, regional and low-SES graduates. They were below average for graduates with a

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disability and from a non-English speaking background, and for women graduating from science, engineering and IT-related courses.

Concluding comments

The findings of our study raise some critical issues for scholars interested in equitable outcomes for all higher education graduates. Broadly speaking, these relate to the outcomes themselves, and to how the outcomes are measured. To address these we next consider strategies that might ameliorate disadvantage for different student cohorts. We then move to the metrics and suggest amendments that would create a far more nuanced picture of the outcomes of higher education.

Ameliorating higher education disadvantage requires different strategies for different groups of students

In Australia as in many other countries, the focus of higher education equity policy remains on widening access and participation (Probert, 2016). Widening access is perhaps the central policy theme nationally and globally (Burke, 2013); however, as access to higher education increases overall, so the broader socio-political conversation shifts to consider in greater detail the outcomes of higher education, particularly those that can be measured in economic terms. Yet the conversations relating to equity in higher education do not appear to have shifted concomitantly. Whether this evidences a belief that social disadvantage is negated at the point of entry, or that this is an issue that policymakers are not yet ready to consider more fully, is unclear.

This study reveals that outcomes are not equal for all students and that higher education disadvantage persists, to varying degrees, for many groups of students after they have completed their studies. Increased access to higher education needs to result in equal rates of post-graduation success, and ensuring success will require multiple approaches. For example, the overwhelmingly positive results for Australian Indigenous graduates indicate that the successful completion of higher education studies does much to ameliorate prior educational disadvantage. For this cohort there

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remains a significant problem in breaking down initial entry barriers to higher education, however. With Bachelor degree completion rates at approximately 47 per cent for Indigenous students, there is also a need to further support these students during their studies (Edwards & McMillan, 2015). In both these regards the barriers experienced by this cohort remain very high. Thus, the current focus on improving Year 12 completion rates for Indigenous students appears to be sound.

Conversely, women enrolling in science, engineering and IT-related courses, and students from non-English speaking backgrounds, struggle at both ends of the continuum. Not only are their rates of access and participation well under their representation in the wider community, these students fail to realize the same post-graduation benefits achieved by most other graduates. It is not clear whether the educational experience itself plays a part in this. For example, might women enrolled in non-traditional courses experience similar forms of discrimination during their studies in male-dominated disciplines, as they do in the related, male-dominated workplaces? Whilst efforts to attract and scaffold these students into higher education must continue, the efforts will be largely wasted if attention is not paid to ensuring students are provided with positive learning experiences and are better supported as they transition into graduate employment. For this to occur, the higher education sector needs to better understand the barriers these students are experiencing both during and after higher education studies, whether these barriers be social, cultural, programmatic or otherwise.

It appears that for many students, working while studying fulfills the dual function of providing the economic means to make study possible as well as developing and maintaining the networks and experience required to gain further employment post-graduation. For all equity groups our study highlights the reflexive relationship between work and higher education. Whilst it has long been a bi-partisan political mantra to 'study for a job' (cf. Oakeshott, 2008), it is equally true that many students need to have a job in order to study. According to the most recent statistics, in Australia approximately fifteen percent of employed people aged 15 to 64 years were studying for a qualification in May 2015 (Australian Bureau of Statistics, 2015). Younger students (aged up to 24) are more likely to study full time and to work part time or not work at all, while older students are more likely to study part-time and to

concurrently hold full- or part-time work. Critically, the main source of income for three out of five (61%) higher education students surveyed in 2010 was a wage or salary. In line with the above, this was more the case for older students (67 per cent) than for younger students (56 per cent) (Australian Bureau of Statistics, 2013). Surveys conducted in the UK have reported similar trends, with three-quarters of students working to fund their studies, 14 per cent of them full time (Endsleigh, 2014). In Canada, the proportion of students aged 19-29 who were working while attending university ranged from 38 per cent for 19 year-olds to 60 per cent for 26 year-olds (Statistics Canada, 2016). Future research should seek to establish the rates at which disadvantaged students are working while studying and whether their fields of employment and working hours diverge from those for other students groups.

Our understandings of higher education disadvantage are undermined by how we measure it

It is axiomatic that for the effects of educational disadvantage to be measured, data must be sufficiently nuanced. However, we have also found a disconnect between the formal definitions of disadvantaged students in Australian higher education and how data are gathered within the primary data collection tool for reporting post-graduation outcomes. All students are affected in at least two ways.

First, the graduate survey is administered within six months of graduation, meaning that for many graduates the opportunity to find meaningful (i.e. degree-related) work has not yet occurred. Consequently, their answers do not necessarily reflect the influence that their studies have had on their employment prospects. It may also be the case that for particular groups of disadvantaged students the relative importance of their higher education qualifications (relative that is to other student groups) strengthens or weakens over time.

The second way in which the survey affects our ability to gauge the importance of higher education studies on post-graduation outcomes is that students are not explicitly asked about the extent to which having their degree qualification led to their current employment. This relationship is inferred when the student is asked to rate the importance of their qualification to their employer; however, it is not the same question.

Furthermore, the findings for at least two specific groups of disadvantaged students must be treated with caution due to the way in which the data are collected. Students from low-SES backgrounds and students from regional areas of Australia are geo-defined in that the postcode reported by the student or graduate determines their inclusion in this cohort. Student inclusion is based on the postcode provided at initial enrolment; however, graduate inclusion is determined on the postcode they provide at the time they complete the survey; this is many years after they commenced their studies. Given that many graduates relocate in order to secure employment, the post-graduation survey does not report regional graduates and graduates from low-SES backgrounds; rather, it reports graduates who are living, and possibly working, in regional and low-SES locales. This is likely to explain why these students, particularly 'regional students', report better post-graduation employment outcomes, when other (empirical) studies show quite the opposite (cf. Koshy, Seymour, & Dockery, 2016).

In fact, Australia is placed better than most other countries to accurately record this type of information. This is because when the current, subsidized funding mechanism was introduced in 1989¹ it required data-sharing processes to be formalized between the Federal Government's education and taxation departments. For over a quarter of a century, therefore, it has been possible for the post-graduation outcomes of students to be accurately tracked both longitudinally and with a higher degree of accuracy than currently occurs. More specifically for low-SES and regional graduates, this would allow their status to be determined by their location at time of enrolment. In all cases, it would allow analyses to occur at an appropriate time after graduation. Further opportunities would also eventuate, such as analyzing whether disadvantaged students suffered more or less than others during economic downturns.

To conclude with an international focus we note that moves to expand higher education systems have been concomitant with policies of social justice and are often expressed in terms of aspirational targets for increasing the participation of people across the social and economic spectrum. At times, it may suffice to focus on policies designed to improve access and participation and allow the 'downstream' benefits to

¹ In 1989 this was called the Higher Education Contribution Scheme (HECS). It is currently called the Higher Education Loan Program (HELP)
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occur naturally and consequentially. However, as our study has shown, this is not universally the case; a rising tide does not always lift all boats. It is therefore essential that public policy concerned with equity in higher education be designed to ensure three things. First, it must be able to define or draw distinctions between different student populations, recognizing their relative levels of social exclusion and how these have influenced educational disadvantage prior to higher education. Second, processes must ensure that these students can be appropriately tracked both through and after their studies. Finally, where these processes evidence unequal higher education outcomes for particular student groups, the focus of higher education equity policy must shift to incorporate appropriate support beyond the initial access and participation stage.

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