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An Australian study of graduate outcomes for disadvantaged students

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ABSTRACT

Whether or not disadvantaged students are realising 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 article is relevant to higher education policy more generally, especially in terms of how governments align institutional processes to measure and scrutinise achievement in relation to public policy objectives.

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Higher education; social inequality; students with disabilities, economics of gender; employability; educational policy

Introduction

Post-Second World War, the goals of further education (FE) and higher education (HE) have been described in a variety of humanistic, emancipatory and economic rationalist terms. Consequently, post-compulsory education can be viewed as education for education's sake; and/or education for social liberation; and/or education for personal and wider economic gain. However, in contemporary public policy discourse, the utilitarian benefits of HE are increasingly prioritised (Boden and Nedeva 2010; Fejes 2010). In the words of one Australian politician, 'the future for most young people in Australia today, is based on the motto "study for a job, study for a job, study for a job"' (Oakeshott 2008, 9958). This and similar imperatives have been examined in the scholarly literature through a variety of conceptual lens; ranging from empirical modelling of graduate employment and labour market outcomes (cf. Bhorat, Mayet, and Visser 2012) to critical explorations of how these discourses normalise the construction of 'learner-workers' (cf. Williams 2005).

Over the same period, FE and HE systems in the majority of advanced and developing nation states have experienced unprecedented expansion. This has resulted in the transition from relatively elite systems towards mass and even universal HE (Trow 1970, 2000). This has in turn allowed access for many persons from groups historically under-represented in FE and HE, on the basis of gender, race, social class or other reasons. The primary public policy drivers for including these students have been described mostly in terms of social justice, however the assumption, generally, is that educational

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access translates into similar post-graduation success for all students, regardless of prior educational or social disadvantage. The aphorism 'a rising tide lifts all boats' is frequently invoked, as is the idea that open-system approaches to education – in both developed and developing nations – will develop human capital for unlimited progress (Schofer and Meyer 2005).

In this article we draw upon the quantitative findings of a research project that examined relationships between disadvantage and graduate outcomes throughout Australia. This provided critical insights into how access to HE did – or did not – lead to improvements in post-graduation equity. Detailed statistics on the outcomes for each of these groups have been presented elsewhere (Richardson, Bennett, and 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 article is relevant to HE 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 scrutinised.

Study context

Compared to 40 years ago, HE 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). There is a widespread and bipartisan belief that transitioning from an elite to a mass system of HE will deliver social and economic gains for both the individual and the state. As HE systems grow, increasing access for groups of people historically under-represented in HE becomes more politically feasible. This is possible because widening access does not occur at the expense of students from more privileged backgrounds (Sellar and Gale 2016). Thus, concomitant with policies designed to up-skill national workforces through increased access to HE, 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 on the inputs side of HE; that is, increasing aspirations for, and access to, HE. Attainment rates are also considered, but to a lesser extent. In Australia, for example, policies enacted over a quarter of a century (cf. Bradley et al. 2008; Department of Employment, Education and Training 1990) have prioritised enrolment targets over graduation or employment targets. In the UK, the national strategy is for all people with the potential to benefit from HE to have the opportunity to participate and succeed (Department for Business, Innovation & Skills 2014), whereas the 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 HE equity analysis and reporting in the US (cf. Cahalan and Perna 2015).

These approaches reveal a general assumption that increased access and participation for disadvantaged students will lead, *ipso facto*, 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 regard to employment outcomes for disadvantaged students (Ministry of Education and Ministry of Business, Innovation and Employment 2014). 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 realising the same benefits of HE is also of fundamental importance to equity practitioners and policymakers.

Table 1. Study sample.

Proxy for disadvantage	Number of respondents
Graduates with a disability	4229
Indigenous graduates (Australian first peoples)	1106
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 in non-traditional areas of study (WINTA)	8603

Literature review

Dominant discourses on graduates' employability have tended to focus on the economic role of graduates and the capacity of HE to equip them for the labour market (Tomlinson 2012). National and international attention on the need for HE to contribute to a state's economic growth grew markedly from the 1980s (Harvey 2000). However, contemporary policy and research attention draws upon much earlier work around the notion of human capital theory (cf. Schultz 1961); that is, the way in which the collation of individual resources (including education) can be directed towards the (mostly economic) goals of a country, nation or state. Most studies on graduate employability have tended to take the first employment after graduation as the point of observation (Cai 2013). At the individual level, and notwithstanding cyclical fluctuations in market demand, university graduates generally attract higher salaries; are more likely to be employed full time and to enjoy job security than are workers in less-skilled occupations (Watson 2005).

More specifically with regard to unequal graduate outcomes related to social disadvantage, Bourdieusian principles of cultural capital have been drawn upon to explore the relationship between non-academic factors influencing a graduate's likelihood of gaining employment. In this vein, for example, Brown, Hesketh, and Williams (2004) argue that even if 'non-traditional' students manage to get to the final stages of recruitment they are at a disadvantage in terms of 'socially negotiating their employability' (205). Longitudinal analyses have been employed to explicate differences, such as that by Power and Whitty (2008), which indicated that students who attended an elite university in the UK were generally in higher-level occupations and on higher salaries than those who went to less-prestigious universities. Other research suggests that the status of the secondary institution is more important than that of the university or that the former is the foundation upon which the latter's own capital resides (Gemici, Lim, and Karmel 2013; Koshy, Seymour, and Dockery 2016). 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 et al. 2010; Hossain and Bloom 2015; Milburn et al. 2013).

In a recent UK study, Britton et al. (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 contextualisation and specification in order to inform social policy.

Research method and data

The study underpinning this article sought to investigate the relationships between disadvantage and graduate outcomes in Australia. The study was delineated in two primary ways. First, disadvantage was defined precisely, using six categories:

- Students from low socio-economic status backgrounds (low-SES)
- Students who are Indigenous Australians
- Students from regional and remote parts of Australia
- Students with disabilities
- Students from non-English speaking backgrounds
- Female students graduating from non-traditional areas of study (i.e. science, engineering and IT-related courses)

These six groups have been the focus of Australian HE equity policy for almost a quarter of a century (Martin 1994), and therefore relatively detailed data were available for these groups of graduates. This also allowed the researchers to examine more precise notions of 'disadvantage' and explore the ways in which graduate outcomes differed between different types of disadvantaged students, as well as broader comparisons between advantaged and disadvantaged students.

The second delineation was to focus on the issue of employability, rather than a wider range of graduate outcomes (for example, satisfaction with the course, health, interactions with social services, etc.) This is not to say that employment is the only or even primary outcome of HE. However, given the centrality of the issue in HE policy internationally, it was an obvious focal point for the study, to add policy relevance to the findings.

The study utilised the raw data from the 2014 Australian Graduate Survey, 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 undertaking multiple activities such as working, studying and searching for work. The number of survey respondents in each disadvantaged group is shown in Table 1.

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, Bennett, and Roberts 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 article we first present the key findings and then discuss some of the critical issues in achieving equitable outcomes for all HE 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

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 (Tables 2(a) and 2(b)). The likelihood was least marked for

Table 2(a). Definitions of outcomes.

Outcome	Definition
Working full time[a]	Working (or accepted offer of work) > 35 hours per week
Working part time[a]	Working (or accepted offer of work) < 35 hours per week
Self-employed[a]	Self-employed (part or full time)
Studying	Studying full time
Neither working nor studying	Not studying or working

[a]May also be studying part time.

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

Group	Working full time	Working part time	Self-employed	Studying
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

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

	Formal requirement	Important	Somewhat important	Not important	Do not know
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

women graduating in non-traditional areas of study (WINTA). 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.

More than 70% 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 undertaking paid work during their final year of study, more than 60% still worked for the same employer. Of this 60%, two-thirds of graduates were not seeking alternative employment.

In terms of the importance of their qualification to students' 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 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.

Table 4. Employment sector in which graduates hold employment.

		Industry sector (%)			
Equity group	Graduates (count)	Government	Professional practice	Industry and commerce	Not-for-profit organisation
Disability	2757	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	5630	5.3	6.3	54.0	2.9
All graduates	106,467	6.5	9.3	42.3	4.4

Table 5. Employment category (%).

	Employment category (% employment)										
Equity group	Health	Education	Business, information, marketing	Community and personal service workers	Clerical and administrative worker	Sales worker	Manager and 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

To explore this issue 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 graduates with a non-English-speaking background (NESB; 57.7%) 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.

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

A closer analysis of the employment categories in Table 4 reveals the following key points (these are highlighted at Table 5):

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

Student group	Graduates working (count)	Permanent or open-ended contract	Fixed-term contract ≥ 12 months	Fixed-term contract ≤ 12 months	Temporary or casual contract
Disability	2757	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	5630	38.4	8.2	10.8	42.6
All graduates	106,467	48.4	8.0	14.5	29.1

Table 7. Salary outcomes for graduate students (count, salaries in Australian dollars).

Student group	Graduates in FT work	Median salary for FT work	Graduates in PT work	Median salary, for PT work
Disability	1447	60,000	1310	20,000
Indigenous	576	61,000	294	26,000
Regional	13,242	60,000	8002	25,000
NESB	12,006	53,000	10,461	18,371
Low SES	10,040	59,700	6725	21,840
WINTA	2615	59,930	3015	15,000
All graduates	62,438	60,000	44,029	20,000

(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.
(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.

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 article, 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 8. Salary categories (% of sample).

Student group	Below $25,000	$25,000 - 49,000	$50,000 - 69,999	$70,000 or above
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

Table 9. Post-graduation outcomes ranked for all seven graduate cohorts.

Student group	Security of tenure	Relevance of qualification	Median salary (FT)	Median salary (PT)	Earnings ≥ $70,000 (%)	Modal ranking
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.

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 analysed salary differentials for graduates employed full time (FT) and part time (PT) (Table 7). Here, again, key patterns emerged, as listed below:

(1) Indigenous graduates earned more than any other group of graduates analysed in this study, both in full-time and part-time employment.
(2) Regional graduates earned above the median wage in both full-time and part-time employment.
(3) Low-SES graduates out-performed other graduates in terms of part-time employment salary, 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.
(5) WINTA graduates were the only cohort who recorded more people in part-time than full-time employment.

Breaking graduate salaries into ranges identified further patterns, as shown in 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 was either important or a formal requirement for their graduate position, 29.3% reported that it was 'not important'. Around four in 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.

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 regard 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 each of these categories are shown in Table 9, with the modal ranking across indicators shown in the final column.

Broadly speaking, post-graduation outcomes were above average for Indigenous, regional and low-SES graduates. They were below average for graduates with a 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 HE graduates. Broadly speaking, these relate to the outcomes themselves and also 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 HE.

Ameliorating HE disadvantage requires different strategies for different groups of students

In Australia, as in many other countries, the focus of HE 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 HE increases overall, so the broader socio-political conversation shifts to consider in greater detail the outcomes of HE, particularly those that can be measured in economic terms. Yet the conversations relating to equity in HE do not appear to have shifted concomitantly. Whether this evidences a belief that social disadvantage is negated at the point of entry or 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 HE disadvantage persists, to varying degrees, for many groups of students after they have completed their studies. Increased access to HE 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 HE studies does much to ameliorate prior educational

disadvantage. For this cohort there remains a significant problem in breaking down initial entry barriers to HE, however. With Bachelor's degree completion rates at approximately 47% for Indigenous students, there is also a need to further support these students during their studies (Edwards and 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 below their representation in the wider community but these students also fail to realise 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 HE 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 HE sector needs to better understand the barriers these students are experiencing both during and after HE studies, whether these barriers be social, cultural, programmatic or otherwise.

It appears that, for many students, working while studying fulfils the dual function of providing the economic means to make study possible and 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 HE. 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 15% of employed people aged between 15 and 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 a full- or part-time job. Critically, the main source of income for three out of five (61%) HE students surveyed in 2010 was a wage or salary. In line with the above, this was more the case for older students (67%) than for younger (56%) students (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% of them full time (Endsleigh 2014). In Canada, the proportion of students aged 19–29 who were working while attending university ranged from 38% for 19 year olds to 60% 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 student groups.

Our understandings of HE 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 HE 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 arisen. 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 HE 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 HE 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, and Dockery 2016). It may also be further evidence that surveys such as these tend to skew towards more advantaged respondents, either in terms of social status or graduate outcomes (cf. Furlong and Cartmel 2005).

In fact, Australia is better placed than most other countries to accurately record this type of information. This is because when the current, subsidised funding mechanism was introduced in 1989[1] it required data-sharing processes to be formalised 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 analysing whether disadvantaged students suffered more or less than others during economic downturns.

To conclude with an international focus, we note that moves to expand HE 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 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 HE be designed to ensure three things. First, it must be able to define or draw distinctions between different student populations, recognising their relative levels of social exclusion and how these have influenced educational disadvantage prior to HE. Second, processes must ensure that these students can be appropriately tracked both through and after their studies. Finally, where these processes evidence unequal HE outcomes for particular student groups, the focus of HE equity policy must shift to incorporate appropriate support beyond the initial access and participation stage.

Note

1. In 1989 this was called the Higher Education Contribution Scheme (HECS). It is currently called the Higher Education Loan Programme (HELP).

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References

Aird, R., E. Miller, K. van Megan, and L. Buys. 2010. *Issues for Students Navigating Alternative Pathways to Higher Education: Barriers, Access and Equity*. https://www.bridgetostudy.com.au/about/AdultLearnerLitReview_5%20July%202010_FINAL.pdf

Australian Bureau of Statistics. 2013. "Hitting the Books: Characteristics of Higher Education Students." https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Main+Features20July+2013

Australian Bureau of Statistics. 2015. 6227.0 - Education and Work, Australia, May 2015. www.abs.gov.au/ausstats/abs@.nsf/mf/6227.0

Bhorat, H., N. Mayet, and M. Visser. 2012. "Student Graduation, Labour Market Destinations and Employment Earnings." In *Student Retention and Graduate Destination: Higher Education and Labour Market Access and Success*, edited by M. Leteska, M. Cosser, M. Breier and M. Visser, 97–124. South Africa: Human Sciences Research Council.

Boden, R., and M. Nedeva. 2010. "Employing Discourse: Universities and Graduate? Employability?" *Journal of Education Policy* 25 (1): 37–54.

Bradley, D., P. Noonan, H. Nugent, and B. Scales. 2008. *Review of Australian Higher Education: Final Report*. Canberra: Department of Education, Employment and Workplace Relations.

Britton, J., J. Dearden, N. Shephard, and A. Vignoles. 2016. *How English Domiciled Graduate Earnings Vary with Gender, Institution Attended, Subject and Socioeconomic Background*. London: Institute for Fiscal Studies.

Brown, P., A. Hesketh, and S. Williams. 2004. *The Mismanagement of Talent*. Oxford: Oxford University Press.

Burke, P. J. 2013. *The Right to Higher Education: Beyond Widening Participation*. Milton Park and New York: Routledge.

Cahalan, M., and L. Perna. 2015. *Indicators of Higher Education Equity in the United States: 45 Year Trend Report 2015 Revised Edition*. http://www.pellinstitute.org/downloads/publications - Indicators_ of_Higher_Education_Equity_in_the_US_45_Year_Trend_Report.pdf

Cai, Y. 2013. "Graduate Employability: A Conceptual Framework for Understanding Employers' Perceptions." *Higher Education* 65 (4): 457–469.

Department for Business Innovation and Skills. 2014. *National Strategy for Access and Student Success*. https://www.gov.uk/government/publications/national-strategy-for-access-and-student-success

Department of Employment Education and Training. 1990. *A Fair Chance for All*. Canberra: Australian Governmen Printing Service.
Edwards, D., and J. McMillan. 2015. *Completing University in a Growing Sector: Is Equity an Issue? Report Submitted to the National Centre for Student Equity in Higher Education, Australia*. Melbourne: Australian Council for Educational Research (ACER).
Endsleigh. 2014. "77% of Students Now Work to Fund Studies [Press Release]." https://www.endsleigh.co.uk/press-releases/10-august-2015/
Fejes, A. 2010. "Discourses on Employability: Constituting the Responsible Citizen." *Studies in Continuing Education* 32 (2): 89–102.
Furlong, A., and F. Cartmel. 2005. *Graduates from Disadvantaged Families: Early Labour Market Experiences*. Bristol: Policy Press.
Gemici, S., P. Lim, and T. Karmel. 2013. *The Impact of Schools on Young People's Transition to University. Longitudinal Surveys of Australian Youth. Research Report 61*. Adelaide: National Centre for Vocational Education Research Ltd.
Graduate Careers Australia. 2014. *Graduate Salaries 2013: A Report on the Earnings of New Australian Graduates in Their First Full-Time Employment*. Melbourne: Graduate Careers Australia Ltd.
Harvey, L. 2000. "New Realities: The Relationship between Higher Education and Employment." *Tertiary Education & Management* 6 (1): 3–17.
Hossain, F., and D. Bloom 2015. *Toward a Better Future: Evidence on Improving Employment Outcomes for Disadvantaged Youth in the United States*. https://www.mdrc.org/publication/toward-better-future
Jagsi, R., M. K. A. Griffith, A. Stewart, M. D. Sambuco, M. R. DeCastro, and P. A. Ubel. 2013. "Gender Differences in Salary in a Recent Cohort of Early-Career Physician-Researchers." *Academic Medicine: Journal of the Association of American Medical Colleges* 88 (11): 2410–2417.
Karelis, C. 2008. *The Persistence of Poverty: Why the Economics of the Well-off Can't Help the Poor New Haven*. CT: Yale University Press.
Koshy, P., R. Seymour, and M. Dockery. 2016. "Are There Institutional Differences in the Earnings of Australian Higher Education Graduates?" *Economic Analaysis and Policy* 51: 1–11.
Martin, L. 1994. *Equity and General Performance Indicators in Higher Education*. Canberra: Australian Government Publishing Service.
Milburn, A., G. Shephard, T. Attwood, A. M. Carrie, P. Cleal, P. Gregg, and C. Williams. 2013. *State of the Nation 2013: Social Mobility and Child Poverty in Great Britain*. London: Social Mobility & Child Poverty (SMCP) Commission.
Ministry of Education and the Ministry of Business Innovation and Employment. 2014. *Tertiary Education Strategy* https://www.education.govt.nz/assets/Documents/Further-education/Tertiary-Education-Strategy.pdf
Oakeshott, R. 2008. *First Speech to Parliament*. Canberra: Hansard. https://parlinfo.aph.gov.au/parlInfo/search/display/display.w3p;query=Id%3A%22chamber%2Fhansardr%2F2008-10-22%2F0091%22.
OECD. 2008. *Tertiary Education for the Knowledge Society, Volume 1*. https://oecd-conference-teks.iscte.pt/documents.html
Power, S. A., and G. Whitty. 2008. *Graduating and Gradations within the Middle Class: The Legacy of an Elite Higher Education*. Cardiff: Cardiff University.
Probert, B. 2016. *The era of Universal Participation in Higher Education: Australian Policy Problems in Relation to Cost, Equity and Quality*. Hammondville: HERDSA.
Richardson, S., D. Bennett, and L. Roberts. 2016. *Investigating the Relationship between Equity and Graduate Outcomes in Australia*. Perth: National Centre for Student Equity in Higher Education.
Schofer, E., and J. W. Meyer. 2005. "The Worldwide Expansion of Higher Education in the Twentieth Century." *American Sociological Review* 70 (6): 898–920.
Schultz, T. W. 1961. "Investment in Human Capital." *The American Economic Review* 51 (1): 1–17.
Sellar, S., and T. Gale. 2016. "Framing Student Equity in Higher Education: National and Global Policy Contexts of a Fair Chance for All." In *Student Equity in Australian Higher Education: Twenty-Five Years of a Fair Chance for All*, edited by A. Harvey, C. Burnheim and M. Brett, 39–52. Singapore: Springer Singapore.
Statistics Canada. 2016. "Proportion of Students Aged 15 to 29, Who Were Also Working, by Age and Type of Institution Attended, Canada." www5.statcan.gc.ca/cansim/pick-choisir?lang=eng&p2=33&id=4770100
Tomlinson, M. 2012. "Graduate Employability: A Review of Conceptual and Empirical Themes." *Higher Education Policy* 25 (4): 407–431.
Trow, M. 1970. "Reflections on the Transition from Mass to Universal Higher Education." *Daedalus* 99 (1): 1–42.
Trow, M. 2000. "From Mass Higher Education to Universal Access: The American Advantage." *Minerva* 37 (4): 303–328.
Watson, L. 2005. *Pathways and Roadblocks. Challenges for Education Policy in a Changing Labour Market*. Paper presented at the Transitions and Risk; New Directions in Social Policy Conference, Melbourne, Australia.
Williams, C. 2005. "The Discursive Construction of the 'competent' Learner-Worker: From Key Competencies to 'employability Skills'." *Studies in Continuing Education* 27 (1): 33–49.