

The influence of Work-Integrated Learning and paid work during studies on graduate employment and underemployment

Denise Jackson¹ · David Collings²

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Abstract To enhance employability and improve the career prospects of graduating students, this study explores the influence of practical experience on graduate employment outcomes in an Australian setting. To develop our understanding of the relative benefit of different forms of practical experience, the study evaluates the influence of both Work-Integrated Learning (WIL) and paid work in the final year of study on graduate employment and underemployment. Two samples are used, $N = 628$ and $N = 237$, to evaluate institutional data on practical experience combined with national data on graduate employment outcomes. Findings indicate that participating in WIL does not produce an increase in full-time employment rates. There is some evidence to suggest that it could lead to higher quality, relevant employment in both the short and long term. Paid employment during the final year of undergraduate study produced higher full-time employment rates, but had little effect on underemployment. Findings will help to inform stakeholders of the relative benefit of curricular and extra-curricular work experience and contribute to the dearth of empirical evidence on the value of activities designed to improve graduate employment prospects. This is particularly important given growth in the supply of graduates, concerns for credentialism, soft graduate labour markets and global economic weakening.

Keywords Work-Integrated Learning · Work experience · Employment · Underemployment · Part-time work

✉ Denise Jackson
d.jackson@ecu.edu.au

David Collings
d.collings@ecu.edu.au

¹ Centre for Innovative Practice, School of Business and Law, 270 Joondalup Drive, Joondalup, WA 6027, Australia

² Strategic and Governance Services Centre, 270 Joondalup Drive, Joondalup, WA 6027, Australia

Introduction

The strategic directive to enhance employability is now widespread in higher education (HE) worldwide (Kinash et al. 2016). Impetus continues for HE providers to develop work-ready graduates so they can meet the needs of industry and produce workers that can successfully drive innovation and lead nations in fiercely competitive global markets. HE providers are also motivated by enhanced employability to assist their graduating students with meeting personal career aspirations and progression. Typically, according to recent research on millennial workers, this means securing—or creating through self-employment—a role that provides both intrinsic satisfaction and financial rewards (Deloitte 2016). To help graduates secure their desired employment outcomes, HE providers must—in collaboration with industry—develop graduates who are adequately prepared to identify suitable career opportunities and can apply their skills and knowledge successfully in the contemporary working environment.

Favourable graduate employment outcomes are becoming increasingly important to stakeholders in undergraduate education. In Australia, these outcomes are documented publicly, such as the award of a one- to five-star rating based on graduate achievement of full-time (FT) employment four to six months post-graduation (Good Education Group 2017). Positioning on the employment ratings league table now appears critical for HE providers, augmented by an increasing focus on the return on undergraduate education (Webber 2016) due to rising costs (Burke et al. 2017) and intense competition in student markets (Department of Education and Training [DET] 2016). Using employment outcomes as a measure of return on investment is likely to continue amid widening participation in HE, an oversupply of graduates and ensuing fears of credentialism (see Daly et al. 2015).

Graduate labour markets remain highly competitive worldwide, and there is evidence of continued weakening in Australia with falling rates of FT employment (Karmel and Carroll 2016; Social Research Centre [SRC] 2016a) and rising levels of graduate underemployment (Karmel and Carroll 2016), the latter also apparent in other developed countries (see, for example, Cunningham 2016a; Heyes et al. 2016). One initiative considered to enhance employability (Kinash et al. 2016) and improve employment outcomes (Silva et al. 2016a, b) is Work-Integrated Learning (WIL). Also referred to as work-based learning and experiential learning, WIL is the intersection of academic and workplace learning where students connect with industry as a formal component of their learning program. WIL comes in many forms, such as largely unpaid, short work placements common to Australia; sandwich degree programs (two years at university, one paid year in industry and one final year in university) in the UK; and alternating terms in university and industry such as the cooperative education model in North America. For students unable to commit to being physically based in the workplace, and for certain industry partners such as smaller businesses or those based in remote areas, WIL may include simulated or virtual workplace learning, consulting or industry-based projects.

In Australia, WIL is a core element to some degree programs, being mandatory for course qualification and/or accreditation. This may involve highly structured periods in the workplace, such as practicums in education and nursing or less-formalised approaches where students must provide evidence of completing a certain number of hours of relevant work experience, such as in engineering. WIL is predominantly unpaid in Australia and is becoming increasingly popular across disciplines traditionally less engaged in this space as a means of enhancing preparedness for graduate employment. Offerings, however, remain relatively

minor in comparison with North America where paid cooperative education forms a significant component of most degree programs.

There is, however, a lack of empirical evidence to support the widely held assumption that WIL improves employment prospects (Department of Employment 2016a; Wilton 2012) and evaluation of the relative advantage of different forms of practical experience. The research objectives for the study were, therefore, to (i) examine the influence of WIL on graduate employment and underemployment, (ii) examine the influence of paid employment during studies on graduate employment and underemployment and (iii) explore graduate perspectives of inhibitors and enablers to employability and employment. In this study, WIL refers to a work placement whereby students are physically based in the workplace for a given period, combined with reflective activities which integrate their learning in the professional and classroom settings. Institutional data on students within particular courses who did, and did not, complete elective WIL were merged with data, derived from a national dataset, on graduate employment outcomes and participation in paid employment during studies. The paper is structured to first provide a review of relevant literature on the influence of WIL and paid employment on graduate employment outcomes. This is followed by an overview of methodology, the results and a discussion of the findings. The conclusion outlines implications for stakeholders, perceived limitations of the study and future directions for research.

Background

Contemporary graduate labour market in Australia

The Australian graduate labour market is characterised by a long-term fall in FT employment from 85.2% in 2008 to 70.9% in 2016 (SRC 2016a). This could, however, be aggravated by underlying changes in the contemporary working environment which is increasingly characterised by part-time (PT) working, fixed-term contracts and casual employment (CEDA 2015). Amid the decline of the organisational career (Sturges 2016), graduates are required to manage their own careers and successfully navigate horizontal movements across different organisations with a typical worker now experiencing 17 jobs in their lifetime (McCrindle 2015). They are increasingly expected to be globally mobile, agile and flexible in the roles they undertake (Foundation for Young Australians [FYA] 2015).

The continued focus on measuring graduate outcomes through FT employment outcomes may be misguided given the shift in contemporary work practices. Importantly, the casualisation of work is not always perceived as a negative situation by workers who often enjoy the freedom and flexibility offered by these arrangements (Golden et al. 2013). Rising graduate underemployment, however, creates a less positive picture as it refers to a layer of graduates who are involuntarily not utilising their formal education in their current role (Glyde et al. 1977). This suggests they are unable to pursue their desired career pathway, perhaps due to labour market circumstances, and questions the value of participating in HE (Cunningham 2016b; Tomlinson 2008). Cunningham notes the difficulties in measuring underemployment, and caution is needed in interpreting figures as some workers may opt to underutilise their skills due to personal needs and considerations (UK Commission for Employment and Skills 2016). The impact of underemployment includes elevated levels of job dissatisfaction (Green and Henseke 2016), lower pay (Thompson et al. 2013) and psychological effects (Wilkins 2007).

The value of Work-Integrated Learning

To cope with the evolving labour market, and to enable graduating students to differentiate themselves from the growing pool of new recruits, HE providers continually seek viable ways of enhancing student employability. The notion of employability has broadened significantly with contemporary models extending beyond the refinement of non-technical skills to incorporate pre-professional identity (Trede et al. 2012), effective career self-management skills (Jackson 2016a) and socially connectedness with the capabilities to grow and develop their professional networks (Bridgstock 2016). The influential role of external factors on employability, such as personal circumstances and labour market trends, is also acknowledged (Guilbert et al. 2016). WIL is considered an effective platform with reported benefits of improved non-technical skills (Smith et al. 2014); greater clarity of expectations, requirements and characteristics of a student's intended profession (Jackson 2016b); improved technical expertise and its application in a professional setting (Dall'Alba 2004); career development learning (Smith et al. 2009); improved portability of skills across different contexts (Hoeckel 2014) and easier transition to the workplace (Matthew et al. 2012). As asserted by Sin et al. (2012), students who have broad and deep conceptions of their future professional work transit into the world of work with relative ease (324).

In Australia, there is increasing impetus to embed and mandate WIL in elective programs, driven by the National Strategy for WIL (Universities Australia et al. 2015). WIL is not only recognised by educators as a useful vehicle for advancing preparedness for employment, but it also meets the growing demand among international students for practical experience (International Education Association for Australia [IEAA] 2012). It is widely considered by stakeholders to enhance job prospects (Jonck 2014; Silva et al. 2016a) through the provision of relevant work experience which is highly desired among graduate employers (Graduate Careers Australia (GCA) 2016) and/or networking benefits (Wilton 2012). Silva and colleagues acknowledge, however, that studies on the impact of WIL on employment outcomes are often limited to one institution, one discipline and/or the short-term effects rather than on long-term career progression. They argue there is a relatively high focus on the benefits of WIL from employer and student perspectives rather than actual assessment of the impact on career progression.

Wilton (2012) asserts there is inconsistent evidence that WIL improves employment outcomes. This aligns with common misconceptions that employability equates to employment (Pegg et al. 2012), and therefore, introducing WIL as a pedagogical initiative to enhance employability will automatically result in improved employment prospects (see Oliver 2015). Unfortunately, bias in graduate recruitment and selection processes and interference created by personal circumstances and external factors such as labour market buoyancy mean the relationship between employability and employment is not always aligned. Just because WIL enhances employability does not necessarily mean, therefore, that it will produce better employment outcomes among participating students.

Benefits of paid employment

Using national data of students graduating from Australian universities, there is significant evidence that paid employment in the final year of study improves the FT employment outcomes of new graduates (Karmel and Carroll 2016; Jackson 2014; Oliver 2011) and their pay (Bartolj and Polanec 2016a; Coates 2015). The value of paid employment extends to non-

technical skill development (Smith 2009); enhanced confidence (Muldoon 2009) and networking, career planning, demonstration of successful job search techniques and successful transition into the workforce (Coates 2015). Some suggest, however, that paid employment can distract students during their studies (James et al. 2007) and worsen their academic performance, particularly in the early stages of their degree (Bartolj and Polanec 2016b).

Compared with WIL, Kinash et al. (2016) found that PT employment was not as highly regarded by employers as some believed it to be time-consuming, rarely aligned with their career aspirations and prevented students from engaging in other valuable activities to enhance their employability. As WIL forms part of a student's curriculum, they are essentially gaining practical experience as part of their studies so should still have additional time available for extra- and co-curricular activities which are highly beneficial to enhancing employability (Bourner and Millican 2011). Assuming the WIL program adheres to quality principles (see, for example, Billett 2011) and students are matched to their degree subject or major, their learning may also be more relevant than PT employment as it may better facilitate the practical application of discipline-based knowledge and skills (Gracia 2010). This is critical for enhancing confidence, identifying gaps in their technical expertise and encouraging students to bring innovative ideas from their classroom learning, as well as the successful transfer of skills and knowledge when they finally enter the workforce as a new graduate (Wilton 2012). Interestingly, Kinash et al. (2016) found no evidence of either WIL or PT employment enhancing graduate outcomes.

Little attention appears to have been given to whether paid employment may be more effective in improving employment outcomes than a WIL experience. Relatively little is known on if and how graduate employers prioritise WIL or paid employment in their recruitment and selection processes as employer surveys which evidence the importance of practical work experience as selection criteria (see, for example, AAGE 2016; GCA 2016) do not differentiate between WIL, service learning, volunteering and paid employment. The lack of employer engagement with WIL—evidenced by an imbalance in the supply of students and availability of work placement opportunities (Department of Industry 2014)—may suggest a preference for paid employment. This could, however, merely reflect internal barriers such as inadequate resourcing, poor management buy-in and concerns for capacity to provide suitable mentoring and poor awareness of WIL or a lack of appreciation among industry stakeholders of their responsibility to support WIL as a means of collaboratively developing graduate work readiness (Jackson et al. 2017). High levels of employer engagement in unpaid internships (Department of Employment 2016b) add further confusion to what employers actually prefer.

Method

Participants

The study compares the employment outcomes of those who completed WIL—in the form of an academic unit which mainly aimed at completing a work placement—with those who did not, with additional attention paid to the impact of work undertaken by students during their final enrolled year. Two different samples were analysed in the study; both comprised bachelor graduates from the same Western Australian (WA) University. The first involved 628 graduates who completed their courses in 2013 and had already completed the Graduate Destination Survey (GDS) at four months post-graduation. Only domestic graduates were included, with

international graduates deemed too difficult to contact by telephone, and this far out from graduation. Their characteristics are summarised in Table 1. Participating education and nursing graduates were excluded from this sample, given the highly standardised and competency-based practicums which form a core component of their degree structure in Australia. It is important to note that WIL was still a course requirement for some graduates in the sample, such as engineering. The second sample of 237 bachelor graduates—both domestic and international—completed their studies in 2015 and their characteristics are also summarised in Table 1.

Procedures

For the first sample, the institution's survey unit used a sampling frame of approximately 1200 domestic bachelor graduates from across the disciplines who had completed their qualifications during 2013. Graduates were asked key questions about work and study status as at 1st March 2015, and whether or not they had completed WIL units during their studies, and the nature of those units. All questionnaires were completed by telephone during mid-March. Calling was halted when 800 interviews were completed. Calling was conducted randomly within the sampling frame to guard against any inherent list order bias.

For the second sample, institutional data was extracted from the Graduate Outcomes Survey (GOS), a national survey administered by HE providers twice annually and which replaced the GDS in 2016. Managed by the SRC, the survey was administered online and the WA provider

Table 1 Demographic and study characteristics of bachelor graduates for samples 1 and 2

Characteristic	Sub-group	Sample 1—2013 (<i>N</i> = 628)		Sample 2—2015 (<i>N</i> = 237)	
		<i>N</i>	%	<i>N</i>	%
Gender	Male	238	37.9	151	36.3
	Female (1)	390	62.1	86	63.7
Age (time of GDS/GOS)	0–24 years	372	59.2	127	53.6
	25–29 years	89	14.2	51	21.5
	30–39 years	87	13.9	33	13.9
	40 years plus	80	12.7	26	11.0
Citizenship	Domestic	628	100	187	78.9
	International (1)	0	0	50	21.1
Employment in the final year study	Yes (1)	495	78.9		
	No	132	21.1		
Completion of WIL	Yes (1)	232	36.9	78	32.0
	No	391	62.3	159	67.1
	Unsure	5	0.8	0	0
WIL a course requirement	Yes	190	82.8	0	0
	No	42	17.2	237	100
Primary discipline	Natural and physical sciences	33	5.3	0	0
	Information technology*	34	5.4	32	13.5
	Engineering and related technologies	35	5.6	0	0
	Agriculture, environmental and related studies	14	2.2	6	2.5
	Medicine and related	135	21.5	0	0
	Management and commerce	92	14.6	155	65.4
	Society and culture	171	27.2	44	18.6
	Creative arts	114	18.2	0	0

achieved an institutional response rate of 45.4%, aligning with other HE providers in Australia (SRC 2016a). For this second sample, students who had completed specific elective WIL units were identified from institutional records and were flagged as completing WIL within the graduate survey dataset. Only those graduates who had completed identical courses, but did not complete WIL, were retained in the sample for comparative purposes. The 12 elective WIL units were selected from a range of disciplines across the university on the basis of similarity in WIL program characteristics. These include the completion of a minimum of 100 h of work experience in a workplace context relevant to their discipline during the academic semester. There was flexibility in structure with some placements completed in a block format and others over one or two days per week during the 13-week period. All incorporated key elements of quality WIL, such as integration of classroom and workplace learning through activities and assessments based on feedback and reflection. Students were required to volunteer for the elective WIL program and needed to demonstrate reasonable academic performance and sound work ethic in previous academic units.

Measures

Employment

For the first sample, respondents were asked questions on their work/study and job-seeking status as at 1st March 2015—as approximately 16-month-out graduates—in the same format as those they had previously answered when completing the GDS as four-month-out graduates. Respondents were asked if they were in FT work (35 h per week or more), PT work (or had accepted an offer for either) or were not working. They were asked if they were seeking work and, if so, whether they sought full or PT employment. These enabled the calculation of AVAILFT1—a variable which is used or can be easily derived in GDS/GOS—which categorises those graduates available for FT employment into either working FT or seeking FT employment. For the second sample, the GOS collects data on the employment and study activities of new graduates. Employment outcomes were measured, the same as the first sample, using AVAILFT1. It should be noted that GOS, unlike GDS, includes those studying on a FT basis in the calculation of AVAILFT1.

Underemployment

A range of measures were utilised to explore underemployment for samples 1 and 2. In their review of literature examining underemployment, Scurry and Blenkinsopp (2011) assert that—among other things—a graduate may be defined as underemployed if ‘they possess more formal education than their current job requires’ (646). They acknowledge that the term underemployment is used interchangeably with over-education. In sample 1, respondents were asked to rate, at both time points and on a 5-point Likert scale, the importance of their degree qualification to their current job. The proportion responding ‘required’ or ‘important’ was combined to create a binary outcome variable of 1 and used as a proxy indicator of being employed at a graduate level. Graduates assigning ratings of lesser importance were classified as 0 and considered underemployed. While the use of degree qualification importance is used in other studies (see, for example, Li et al. 2016), it is focused on vertical job mismatch yet could also inadvertently capture horizontal mismatch, that where a

graduate of one discipline is working in a different one. Interestingly, Scurry and Blenkinsop also classify horizontal mismatch as a form of underemployment if it is involuntary.

GOS introduced a more nuanced set of variables to measure underemployment which were utilised for the second sample. The Scale of Perceived Overqualification (SPOQ), developed and validated by Maynard et al. (2006), comprises eight items—rated on a 5-point Likert scale from strongly disagree to strongly agree. A composite measure was also derived (see SRC 2016b) and, in combination, these were used to determine the extent to which a respondent perceives themselves as overqualified, equating to underemployment.

Other

For the first sample, excluding nursing and education graduates, respondents were asked if they had undertaken an academic unit mainly aimed at completing a work placement and whether this was compulsory for their course. Finally, students were asked to comment on any aspects of their degree program and general experience at the institution which were most useful for improving graduate employment outcomes and any barriers to enhancing their employability. Survey points were four to six months post-graduation—herein termed as four months—and 14 to 20 months, herein termed as 16 months. The measures used in both samples are summarised in Table 2.

Analysis

Analysis was conducted using Excel and SPSS 23.0 and in two parts: examination of employment outcomes followed by underemployment.

Employment

First, an analysis of the employment outcomes of graduates available for FT employment in sample 1 (4 and 16 months post-graduation) and sample 2 (4 months post-graduation) was undertaken. Those who were unsure they had completed a work placement were removed from sample 1, reducing it to 623. Variations in those who had obtained FT employment were

Table 2 Summary of measures for samples 1 and 2

	Sample 1	Sample 2
Year graduated	2013	2015
Completed graduate survey	2014 Graduate Destination Survey (GDS)	2016 Graduate Outcomes Survey (GOS)
WIL units completed (yes/no)	Asked in telephone survey	Derived from student records
Worked in the final year of study (yes/no)	2014 GDS	Not available
Employment outcomes data	Employment at 4 to 6 months (GDS) Employment at 16 months (telephone survey)	Employment at 4 to 6 months (GOS)
Underemployment	Importance of degree qualification to current role (IMPQUAL)	Scale of Perceived Overqualification (SPOQ)
Enabling/barrier factors regarding employability	Open response in telephone survey	Not available

then explored using binary logistic regression. The importance of WIL, paid employment, gender, age, discipline and citizenship (where possible) was examined. Predictor variables for logistic regression are presented in Table 1 with reference categories for categorical variables indicated by a (1). Information technology (IT) was the base category for discipline, unpacked to create a set of binary dummy variables, and is indicated by an asterisk.

Underemployment

The incidence of underemployment was explored by analysing responses to questions about the importance of degree qualification to a graduate's current job. For the first sample, this was a single question (was your qualification 'required' for or important to you job). For the second sample, a bank of eight questionnaire items collectively known as the 'Scale of Perceived Overqualification' (SPOQ) was used. There is growing acknowledgement that some graduates may genuinely choose to work on a PT basis (UK Commission for Employment and Skills 2016) and that PT working does not always indicate underemployment. To highlight any differences relating to this, analysis was conducted for those available and in FT employment and also for those currently in either full or PT work at the four- and 16-month stages. Cross tabulations and chi-square analysis were used to explore any associations between underemployment and both the completion of a work placement and paid employment during the final year of study ($\alpha = .05$). For the second sample, a series of MANOVAs was conducted to examine variation in the SPOQ scale for gender, age, completion of WIL, discipline and citizenship.

Inhibitors and enablers of employability and employment

Thematic analysis and inductive coding at the individual response level, using the principles of qualitative research (Thomas 2006), were undertaken to identify any open responses which referred to the value of WIL—or paid employment—enhancing or hindering employability and employment prospects.

Results and discussion

Employment

It is important to frame any analysis of FT graduate employment outcomes within the broader context to gauge whether variations may be attributed to environmental issues, rather than participation in WIL or paid employment in the final year of study. Data provided by GOS, and its predecessor the GDS, indicate that while there has been a significant fall in FT graduate employment since 2008, the percentage employed (70.9%) was identical for both 2013 and 2016 (the time of the second survey) with only a slight fall and rise in between (SRC 2016a). Similarly, the employment-to-population ratio (the number of employed persons as a percentage of the civilian population aged 15 years and over) for Australia indicates very little difference between June 2013 (61.6%) and June 2017 (61.3%) (Australian Bureau of Statistics 2017). This stability may allow us to more reliably make suggestions pertaining to the role of WIL or PT employment on any variability arising in employment outcomes.

Influence of WIL

The employment outcomes of graduates in both sample 1 ($N = 623$) and sample 2 ($N = 237$) are presented in Table 3. Results for sample 1 indicate that, in the short term, there is an improved FT employment outcome for those who reported completing a placement—57.3% of those available for employment—than those who did not at 47.0%. The FT employment rate after 16 months for those who completed a placement in their course is essentially the same as for those who did not, with both groups at just below 75%. With less than one fifth of those reporting they had completed an elective placement, further comparison of compulsory versus non-compulsory placements is less reliable. Figures show, however, little difference in the proportion securing FT employment with the broader sample at both the four-month (55.5%) and 16-month (75.4%) stages. Employment outcomes for sample 2 comprise the 237 graduates available for FT employment and whose course offered an elective work placement—and was undertaken by at least one GOS respondent. Results showed greater disparity in the proportion securing FT employment between those who completed a placement (65.2%) and those who did not (75.2%) than in the first sample.

Logistic regression coefficients for FT employment outcomes for those available for employment are presented in Table 4 for sample 1's four- and 16-month stages and sample 2. Tolerance and variance inflation factor (VIF) were within the recommended threshold values for all predictor variables (Hair et al. 2010). The six graduates within 'agriculture, environmental and related studies' in sample 2 were, however, removed as their inclusion created an inflated standard error in the logistic regression analysis, indicative of multicollinearity (Hair et al. 2010). The Wald statistic and the associated p value predict group membership, and a negative B value means the variable decreases the predicted odds of obtaining FT employment with an opposite effect for a positive value. Significant regression coefficients are marked by asterisks. $\text{Exp}(B)$, the exponentiated coefficient, with a value less than one denotes a negative effect on the odds of FT employment while values greater than one indicate that variable will make FT employment more likely to occur. The effect size for age is

Table 3 Employment outcomes of graduates (samples 1 and 2) by completion of WIL and paid work during the final year of study

	FT employment outcomes					
	Available for FT employment		In FT employment		Seeking FT employment	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Sample 1 ($N = 623$), 4 months						
WIL ($N = 232$)	131	56.5	75	57.3	56	42.7
No WIL ($N = 391$)	200	51.2	94	47.0	106	53.0
Work ($N = 491$)	272	55.5	158	58.1	114	41.9
No work ($N = 132$)	59	44.7	11	18.6	48	81.4
Sample 1 ($N = 623$), 16 months						
WIL ($N = 232$)	157	67.7	117	74.5	40	25.5
No WIL ($N = 391$)	230	58.8	170	73.9	60	26.1
Work ($N = 491$)	325	66.3	255	78.5	70	21.5
No work ($N = 132$)	62	47.0	32	51.6	30	48.4
Sample 2 ($N = 237$), 4 months						
WIL ($N = 78$)	66	84.6	43	65.2	23	34.8
No WIL ($N = 159$)	125	78.6	94	75.2	31	24.8

Table 4 Logistic coefficients for full-time employment for samples 1 and 2

	Employment—sample 1						Employment—sample 2								
	4 months			16 months			4 months			16 months					
	B	SE	Wald	Sig	Exp(B)	B	SE	Wald	Sig	Exp(B)	B	SE	Wald	Sig	Exp(B)
Gender	-.263	.272	.934	.334	.769	.080	.286	.078	.779	1.083	-.450	.392	1.317	.251	.638
Age	.024	.015	2.416	.120	1.024	.030	.016	3.379	.066**	1.031	-.022	.019	1.336	.248	.978
Employment final year study	1.751	.459	14.537	.000*	5.761	1.019	.369	7.603	.006*	2.770					
Completion of WIL	.256	.734	.122	.727	1.292	-.510	.612	.693	.405	.601	-.483	.348	1.923	.166	.617
Discipline	.296	.793	.140	.709	1.345	-1.363	.721	3.575	.059**	.256					
Engineering and related technologies	.288	.659	.191	.662	1.333	.187	.629	.088	.766	1.206					
Agriculture, environmental and related studies	-.442	.900	.242	.623	.643	1.377	1.216	1.282	.257	3.965					
Medicine	.231	.560	.171	.680	1.260	.601	.594	1.025	.311	1.824					
Management and commerce	.516	.551	.876	.349	1.675	.833	.591	1.987	.159	2.301	-.562	.615	.834	.361	.570
Society and culture	.677	.553	1.497	.221	1.968	.085	.556	.024	.878	1.089	-.998	.692	2.078	.149	.369
Creative arts	-.452	.582	.602	.438	.636	.369	.557	.440	.507	1.447					
WIL*employment	.104	.771	.018	.893	1.109	.332	.663	.250	.617	1.393	-.909	.413	4.846	.028*	.403
Citizenship	.180					.142					.091				
Pseudo R ²	47.863					39.314					12.552				
χ ²															

*p < .05

**p < .10

expected to be smaller given it is a continuous variable (Hair et al. 2010). The interaction effect for employment during the final year of study and completion of a placement is presented as predictor one*predictor two.

At the four-month stage for sample 1, correct predictions were 71.6% for those employed FT and 53.7% for those seeking employment, with 62.8% of all cases being classified correctly. At 16 months post-graduation, correct predictions were 62.0% for those employed FT and 70.4% for those seeking employment, with 68.2% of all cases being classified correctly. For sample 2, 65.7% of cases were correctly predicted for those employed FT and 53.7% for those seeking employment, with 62.3% of all cases being classified correctly. The insignificant logistic regression coefficients indicate that completing a work placement does not clearly increase the likelihood of FT employment in either the short or long term, aligning with other studies which have not produced consistent, empirical evidence to support the widely held assumption of WIL producing more favourable employment outcomes (see, for example, Peters et al. 2014; Wilton 2012). Wilton, in his analysis of employment outcomes among graduates four years since graduation, conjectured that the benefits of WIL are less clearly evident over time. This first sample, despite the lack of a statistically significant short term effect, provides some support to Wilton's suggestion.

Influence of work in the final year of study

For sample 1, when measured at the four-month stage, of those who had worked during their final study year and were available for FT work ($N = 272$), the FT employment rate was 58.1%, compared with just 18.6% of those who did not work in their final year. At the 16-month stage, 78.5% of those who worked attained FT employment compared with 51.6% of those who did not report such work. There was a strong increase in predicted odds for securing FT employment for those working during the final year of studies. Graduates at the four-month stage were almost six times more likely to attain employment although this positive effect fell to a three-time greater likelihood at the 16-month stage. It is not possible to provide data on the employment outcomes of those working during their final year of study in sample 2 as this variable is not included in the GOS.

The importance of paid work resonates with earlier studies and the 'washing out' effect over time may represent those who did not work during their studies 'catching up' through establishing professional networks and adding relevant experience to their résumé portfolio. Also, the strong effect in the short term is likely to be inflated by those who worked in their final year simply remaining with their current employer at the four-month post-graduation stage. Further analysis shows that of the 158 graduates who secured FT employment and worked in their final year of study, just over half were still with the same employer at four months. Logistic regression results show no interacting effect between completing a placement and being in paid employment during the final year of study.

Other variations

Sample 1 and 2 results indicate there were no gender effects for FT employment in either the short or longer term, aligning with Jackson's (2014) exploration of the determinants of short-term graduate employment outcomes. Karmel and Carroll (2016) also found any differences between FT employment among males and females of only small magnitude. Other studies, however, have found males tend to enjoy higher salaries and better long-term job prospects

(Coates and Edwards 2011). Regarding age, there were no reported variations in either sample in the short term yet some evidence of improved outcomes among mature graduates in the longer term 16-month measures ($p = .066$). This contrasts with Wilton (2012) who detected the reverse effect. The only significant difference by discipline in both the short and long term across the two samples was in science ($p = .059$). For these graduates, the odds of achieving FT employment at the 16-month time point were significantly lower than graduates from IT.

Underemployment

Approximately one half of the graduates in FT employment at both the four- and 16-month stages in sample 1 believed their degree qualification was either required or important to their role, the remaining half considered underemployed for the purpose of this study. For sample 2, utilising the SPOQ scale, 52.2% of graduates were classified as underemployed.

Influence of WIL

Table 5 summarises the importance of degree qualification to graduates in sample 1 by the completion of a work placement and whether they undertook paid work in their final year of study. Results are presented both for those available for and in FT employment and those currently working on a PT or FT basis. There was a more notable impact of completing a placement on underemployment, in alignment with Nunley et al. (2017) US-based study. For sample 1, 77% of graduates in FT employment at the four-month stage who had completed a

Table 5 Underemployment among sample 1 graduates by completion of WIL and paid work during the final year of study

	Importance of qualification									
	Formal requirement		Important		Somewhat important		Not important		Do not know	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
4 months in FT (<i>N</i> = 169)										
WIL (<i>N</i> = 75)	40	54.8	16	21.9	8	11.0	9	12.3	1	.6
No WIL (<i>N</i> = 94)	21	23.4	20	22.2	14	15.6	34	37.8	0	0
Work (<i>N</i> = 158)	60	39.5	32	21.1	21	13.8	38	25.0	1	.6
No work (<i>N</i> = 11)	1	9.1	4	36.4	1	9.1	5	45.5	0	0
4 months in FT/PT (<i>N</i> = 475)										
WIL (<i>N</i> = 187)	66	37.3	31	17.5	11	6.2	67	37.9	2	1.1
No WIL (<i>N</i> = 288)	33	12.3	45	16.7	45	16.7	140	52.0	6	2.2
Work (<i>N</i> = 433)	88	21.7	68	16.8	52	12.8	190	46.9	7	1.7
No work (<i>N</i> = 41)	11	27.5	8	20.0	4	10.0	16	40.0	1	2.5
16 months in FT (<i>N</i> = 287)										
WIL (<i>N</i> = 117)	63	53.8	20	17.1	15	12.8	19	16.2	0	0
No WIL (<i>N</i> = 170)	49	28.8	40	23.5	39	22.9	42	24.7	0	0
Work (<i>N</i> = 255)	104	40.8	54	21.2	49	19.2	48	18.8	0	0
No work (<i>N</i> = 32)	8	25.0	6	18.8	5	15.6	13	40.6	0	0
16 months in FT/PT (<i>N</i> = 517)										
WIL (<i>N</i> = 202)	91	45.0	35	17.3	25	12.4	51	25.2	0	0
No WIL (<i>N</i> = 315)	64	30.3	63	20.0	61	19.4	127	40.3	0	0
Work (<i>N</i> = 445)	137	30.8	82	18.4	74	16.6	152	34.2	0	0
No work (<i>N</i> = 71)	18	25.4	15	21.1	12	16.9	26	36.6	0	0

placement rated their qualification as required or important to their current role, compared with 46% for those who had not. At 16 months, 71% who had completed a placement rating their qualification as relevant compared with 52% who did not.

Including PT workers, at the four-month stage, 55% who had completed a placement rated their qualification as required/important in comparison with 29% who had not. At 16 months, 62.3% who had completed a placement considered their degree relevant to their current role, in comparison with 50.3% who did not. The impact of the work placement for FT workers is clearly visible both in the short term, $\chi^2(4, N = 163) = 22.000, p = .000$, and long term, $\chi^2(3, N = 287) = 18.602, p = .000$, with those completing a placement recording significantly higher levels of graduate-level employment than those that did not. Although the disparity in ratings between those who did and did not complete a placement lessened in the long term, the placement effect appears more profound for those working FT. When PT workers are included at both time points, a higher proportion of graduates declared their degree as not important to their current role, providing some support for perception that part-time roles are of a lesser quality (see, for example, Kauhanen and Nätti 2015).

For sample 2, the mean and standard deviation for each of the eight items relating to overqualification, equating to underemployment, are presented in Table 6 for graduates who did and did not complete a placement. The means are lower for all eight items for those who completed a placement, with the exception of the fourth item which is reverse coded and thus a favourable result. The percentage that strongly agreed or agreed with the items is also lower across the board for those who completed a placement. With the exception of the fourth item, this suggests those who completed a placement consider themselves to be overqualified relatively less than those who did not. While ratings are still higher than one might wish, it is important to remember that the survey was completed only four months post-graduation and when graduates may still be settling into roles or earning supervisor with respect to work autonomously and take on additional responsibility.

Derived as a scaled score from these eight items (with averages over 3.5 defined as ‘perceived to be overqualified’), 46.2% of those working FT who did not complete a placement perceived themselves as overqualified for their current role in comparison with 34.1% who did. Including both PT and FT workers, 54.7% who did not complete a placement perceived themselves as overqualified for their current role compared with 47.4% who did. This adds support for the value of undertaking a work placement in helping graduates to secure relevant and quality employment which utilises their qualification. Findings again highlight a greater incidence of underemployment among graduates working on a PT basis. A MANOVA was conducted ($\alpha = .05$) to detect any variation in the multiple SPOQ items for completion of a placement. A significant effect, however, was not reported for those working FT nor those working on a FT or PT basis.

Findings for the influence of work placement completion are, therefore, mixed. Sample 1 provides some support for Peters et al.’s (2014) study of 3340 Ontario graduates which found that ‘employed graduates who participated in WIL were more likely to feel that they were appropriately qualified for their job, that their job was related to their long-term career goals and that their job was related to their studies’ (6). Although lower incidence of underemployment among those who completed a placement is evident in the second sample, this was not significantly so. The results for the second sample, then, cannot provide strong counter evidence to that of Wilton’s (2012) who found those who did not complete a work placement were proportionately more likely to be in higher level occupations and ones which utilised their degree qualification highlight the need for further empirical review.

Table 6 Analysis of underemployment for sample 2

	In FT employment (N=137)						In FT/PT employment (N=191)									
	WIL (N=43)			No WIL (N=94)			WIL (N=60)			No WIL (N=131)						
	M	SD	% SA/A	M	SD	% SA/A	M	SD	% SA/A	M	SD	% SA/A				
Job requires less education than respondent has	2.71	1.289	41	31.7	3.18	1.367	93	48.4	3.07	1.333	56	44.6	3.38	1.364	128	56.3
Respondent has more job skills than are required	3.27	1.304	41	41.5	3.70	1.178	93	64.5	3.56	1.254	57	54.4	3.77	1.165	128	67.2
Someone with less education than respondent could perform job well	2.88	1.327	41	49.0	3.19	1.296	93	52.7	3.14	1.274	57	47.4	3.38	1.267	128	59.4
Respondent's previous training is being fully utilised	3.20	1.100	41	41.5	3.19	1.218	93	45.2	2.98	1.157	57	35.1	3.05	1.248	128	41.4
Respondent has more knowledge than needed	3.29	1.289	41	43.9	3.70	1.202	92	64.1	3.58	1.238	57	56.1	3.82	1.151	127	69.3
Respondent's education level is above the level required	3.44	1.305	41	53.6	3.60	1.267	92	58.7	3.60	1.266	57	57.9	3.80	1.189	127	67.7
Someone with less work experience than respondent could do just as well	2.49	1.267	41	19.5	2.82	1.285	93	35.5	2.68	1.284	57	24.6	3.00	1.280	128	39.8
Respondent has more abilities than needed	3.44	1.119	41	51.2	3.72	1.164	93	65.6	3.68	1.088	57	61.4	3.84	1.104	128	71.1

Influence of paid employment

The benefit of paid employment during one's studies dissipates when considering its impact on relevant employment, rather than simply attaining a FT role. Referring to Table 5, for sample 1 at the four-month stage, 60.6% of those who did work considered their degree qualification either a formal requirement or very important to their current role, compared with the 45.5% who did not work. There were no significant differences in underemployment for those who were employed in their final year of study although the results for importance of qualification are more favourable for those did work. Further, 45.5% of those who did not work, compared with 25% who did, believed their degree was of no importance to their current job. At the 16-month stage, the effect of paid employment is slightly more apparent, $\chi^2(3, N=287) = 8.448$, $p = .038$, with 62.0% of those who worked stating their current role was either formally required or very important in comparison with 43.8% who did not work.

Variations in underemployment

A series of MANOVAs was conducted ($\alpha = .05$) to detect any variation in the multiple SPOQ items for gender, age, discipline and citizenship. First, for those in FT employment, no significant effects were recorded. For graduates working on either a FT or PT basis, a significant result was recorded only for discipline, $\lambda = .805$, $F(24, 496.553) = 1.606$, $p = .035$, partial $\eta^2 = .070$. Univariate analysis produced significant results for all SPOQ items ($p < .01$), excluding the fourth item relating to the utilisation of previous training. Post hoc analysis indicates that society and culture performed consistently weakly. Other than the fourth item, graduates in this discipline achieved significantly higher ratings and were over-educated compared with either or both IT and management and commerce. The absence of a gender effect contrasts with Karmel and Carroll (2016) who found males secured better quality jobs than females.

Inhibitors and enablers of employability and employment

Student responses to identifying enhancers and inhibitors in their courses for their employment prospects and employability were analysed to detect specific references to WIL. Of the 623 graduates, 135 specifically referred to the value of their work placement and there were six underlying themes to how graduates felt the work placement was useful. First, one quarter of respondents felt the practical experience gave them a stronger chance in job applications and improved their confidence in the labour market, particularly due to good references from their host employer. Second, also related to employment prospects, 15% stated their placement directly resulted in paid employment. Third, one fifth found the placement helped develop their professional networks which enhanced their future employment prospects. Shifting the focus more towards enhancing their employability rather than specific job outcomes, 15% stated the placement experience provided them with valuable insight into their intended profession and industry. Greater clarity on the expectations and requirements of the different roles within their field helped them understand their career goals and better identify which pathway to pursue. Fifth, 17% felt the placement enhanced their confidence and developed their non-technical skills and/or technical expertise through the opportunity to practice and apply theory in a professional setting. Finally, the remaining 8% of students stated the work placement was useful but did not embellish in what way.

A further 20 respondents spoke of the usefulness of non-placement WIL initiatives within their course—such as simulations and industry-based projects—and the benefits replicated some of the themes identified by graduates who completed placements. These included enhanced understanding of how their profession operated and skill development through the practical application of disciplinary knowledge and skills. Usefulness was therefore focused on improving individual employability rather than increased chances of job attainment due to gaining practical experience, professional networking and securing a job through an industry partner. Findings gave a sense that educators need to concentrate on improving the networking aspects of less traditional WIL offerings to better align with the benefits offered work placements.

In regard to barriers which graduates felt inhibited the development of their employability and/or employment prospects, there was an overwhelming belief among respondents that inclusion of more work placements in their course would have assisted them. Almost 30% of the 623 graduates advocated either expanding current placement offerings or introducing work placements into their course. These graduates felt undertaking a placement, or more placements, would provide them with the practical experience they needed to secure employment as this was a high priority among graduate employers. Respondents believed that experience was critical to getting a foot in the door in a highly competitive graduate labour market as it enabled them to interact with potential employers and practice applying their skills and knowledge in a professional setting.

Findings support evidence of the importance attributed to gaining relevant work experience (see, for example, Messum et al. 2017) and the imbalance in student demand for work placements and the pool of placement opportunities (Department of Industry 2014). Findings affirm and add impetus to the need to drive and implement initiatives to increase employer engagement in WIL and upscale WIL offerings to increase student engagement with employers. Interestingly, of the 446 students who did not directly identify the lack of work placement opportunity as a barrier to enhancing employability, there was an overwhelming focus among their responses on the need for courses to offer more networking opportunities and connection with local employers to enhance employability and improve employment prospects. These students noted the weak graduate labour market and economic circumstances and felt it was more about ‘who you know’ than ‘what you know’ to currently secure employment. This, again, highlights the need to ensure that non-placement WIL not only offers an authentic learning experience but also enables participating students to establish professional networks during their experience.

Conclusions and implications

Findings in the two samples are mixed, but overall they do not indicate that graduates who reported completing a placement unit experience better FT employment rates than those who did not. Employment during the final year of study, however, considerably increased the likelihood of attaining FT employment in both the short and long term, although this may, in the shorter term at least, be attributed to new graduates simply remaining with the same employer after their studies. There appeared to be no difference in the influence of placement completion on employment outcomes with respect to whether or not a graduate worked in their final year. The more favourable influence of paid work, rather than WIL, on employment outcomes is perhaps surprising. It contradicts Nunley et al. (2017) findings that graduate

employers favour relevant work experience given employment during studies may not always be relevant to a student's intended career. Perhaps student initiative and motivation to successfully secure and undertake paid employment carries more weight on graduate résumés than participation in an experience organised through the student's institution? More favourable employment outcomes among participants in sandwich degree (Brooks and Youngson 2016) and cooperative education programs (Ferguson and Wang 2014) may also suggest that implementing lengthier periods in industry could be more helpful with obtaining employment.

Findings in this study support others who question the widely held belief that undertaking WIL will result in more favourable employment outcomes (Kinash et al. 2016; Yackee 2015). They confirm that universities should not consider WIL to be their 'silver bullet' for improving an institution's position in FT employment league tables. It is important that stakeholders move beyond defining graduate success as the metric of attaining FT employment, particularly given the rise in portfolio careers, and recognise WIL's capabilities in enhancing graduate preparedness for success in the contemporary world of work, through improved non-technical skills, professional networking and exposure to the expectations and requirements of their intended career pathway. These alone substantiate the need for relevant stakeholders to collaborate, resource and drive the National Strategy for WIL (Universities Australia et al. 2015), irrespective of FT employment outcomes.

In relation to underemployment, there was a more notable difference among graduates who completed a work placement with some findings suggesting they were more likely to achieve relevant, quality employment. This may be evidence of WIL's documented impact on career self-management and professional identity development, giving students and graduates a clearer sense of purpose and direction, thus empowering them to achieve their self-defined goals of career success in a more timely and efficient manner than those who lacked exposure to established professionals in their field. Alternatively, as asserted by Nunley et al. (2017), it may signal superior productivity to future employers. The mixed evidence, however, for the impact of placement completion on underemployment could indicate mediating effects of other extra-curricular, co-curricular or curricular activities or interventions intended to enhance employability, such as volunteering, study tours, career self-management interventions and skill development programs. Individual differences in personal circumstances, mobility and academic success may also have prevented a clear and consistent finding with respect to completing work placements and underemployment. Given the lack of data on the relevance of work undertaken during the final year of study, it is not possible to separate and measure the benefits of demonstrating commitment to (any) paid employment from those gained from a career-relevant experience with exposure to seasoned professionals, an important area requiring empirical review.

There was no evidence that participating in paid employment during the final year would assist in securing relevant, graduate-level employment in the short term yet some evidence of a positive effect in the long term. This trend may represent the transition of graduates who initially remained with their employer during studies to an employer offering more desirable work and who valued their commitment and work ethic demonstrated by a history of regular, paid employment. A worker's ability to retain employment for a particular length of time may be of increasing concern given the high mobility levels and a lack of reported loyalty among younger generations. The impact, however, of periods of unemployment has been reported as bearing no influence on the decisions of graduate recruiters (see Nunley et al. 2017).

Males and females fared equally well in the labour market in relation to both employment and underemployment. More mature graduates appeared to secure better FT employment outcomes in the longer term yet performed similarly to their younger counterparts in respect to underemployment. Using IT graduates as a basis for comparison, there was little difference in FT employment outcomes across the disciplines other than for science who were disadvantaged in the longer term. Relatively weak performance by science graduates was also noted in Coates and Edwards (2011) longitudinal study of Australian graduate employment outcomes. Graduates of the society and culture discipline grouping experienced significantly higher levels of underemployment than all others. This prompts a review of interventions initiatives available for students to develop their skills in career self-management—including strategies for seeking quality employment and developing professional networking capabilities—in addition to the workplace relevance of program offerings.

To date, there has been significant focus on supply-side employability strategies with industry declaring their needs for employable graduates through the prioritisation of certain employability skills and HE providers responding through developing and embedding graduate attribute frameworks. Perhaps a similar pattern will occur with employers now insisting on relevant work experience as a key selection criterion and universities duly responding with embedding WIL throughout courses with less traditional WIL models. Will, however, graduate employers simply continue to raise the bar on what is required and put more pressure on graduates (and HE providers) on the level and nature of required experience, and other selection criteria, to secure employment?

Without adequately resourcing sustainable and scalable models of WIL, continued calls for practical experience may augment the continued growth of unpaid internships which can be both illegal and enhance inequalities among already disadvantaged groups who are often unable to participate (Department of Employment 2016b). It is therefore critical that employers collaborate with HE providers, and their students, on supporting WIL opportunities to appropriately prepare new graduates not only for their individual outcomes but for successful innovation, global competitiveness and strong economic performance. Employers must clarify precisely which outcomes they expect from practical experience during the degree program and support students through paid employment or formal WIL programs. In North America, for example, cooperative education is integral to industry operations with significant numbers of students regularly interchanging between campus-based and industry-based learning during their studies.

Defying logic in a highly competitive graduate labour market and rising underemployment, there remain reported skill gaps among graduates (Tymon 2013; UK Commission for Employment and Skills 2016) and evidence that employers would be willing to employ more graduates if they were appropriately skilled (GCA 2016). Some interpret this as the need for HE providers to review their strategies for making graduates more employable, including what is taught, teaching methodologies and how student outcomes are measured (see Kinash et al. 2016). Other strategies to improve skills mismatch may include educating graduates on the importance of labour mobility, improving the quality of graduate recruitment and selection strategies, provision of career guidance within HE which is aligned with contemporary roles and working practices and providing government incentives for employer-based training for new graduates (see World Economic Forum 2014). We must not, however, ignore the demand side of the graduate labour market with attention to strategies to better accommodate the growing number of graduates due to widening participation policies. This could involve changing perceptions of what are traditional graduate roles, such as a greater presence in retail

management, while being mindful of any negative effects on graduates of the vocational education sector.

This study develops our understanding of the influence of WIL and paid employment during ones studies on employment outcomes among recent graduates and the extent to which they are underemployed. It makes the important distinction between employment and under-employment which is often overlooked in other studies measuring the return on both WIL and other aspects of tertiary qualifications. These are becoming increasingly important amid policies to widen participation in HE, with concerns about credentialism and a possible oversupply of graduates (Tomlinson 2008).

As with all studies, there are limitations. The merging of institutional and national data was time-consuming and confined to one institution, albeit at two different time points. It is important to acknowledge that certain specificities of the geographical labour market, or the institution itself, could influence the results. For example, Western Australia had entered a post-mining boom economic slump as the graduates in this study were leaving university. Including nuanced measures for WIL and paid employment during study in national surveys of graduate employment outcomes would enable more generalisable findings and better insight into the broader effects of WIL and student employment. The use of graduate self-reported rating of ‘relevance of qualification to employment’ for sample 1 is not without problems. That a graduate may deem their degree only slightly relevant to their job may reflect on the generalist nature of the degree or under-represent the importance of generic skills acquired. Further, while identifying whether a graduate completed WIL during their course was precise, there is no account for co- or extra-curricular activities such as self-organised internships or volunteering. It is also acknowledged that barriers to participating in WIL exist, including the costs of travel and clothing, child care commitments and imposed prerequisites of certain levels of academic achievement (Brough et al. 2014). WIL may also appeal to those who are more career-minded, are academically engaged and have a strong work ethic. WIL’s positive association with better quality employment could, therefore, be attributed not to their participation in WIL but more to their characteristics and/or support available to assist them in attaining certain types of FT employment.

Future directions for research include exploring the influence of the different forms of WIL on both employment and underemployment. This includes simulations, industry-based projects, incubator and business start-up programs and other authentic learning experiences which qualify as a quality WIL experience. Studies which develop our understanding of graduate recruiters’ preference for the different types of WIL and paid employment would also be beneficial. These may indicate a need to educate employers on the nature and benefits of WIL and assist in aligning the design and content of WIL programs to better meet industry needs. Further, longitudinal studies which examine causality for underemployment among graduates who completed, or not, different forms of WIL would be particularly useful.

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