Internships and the PhD: Is this the future direction of work-integrated learning in Australia?

FAITH VALENCIA-FORRESTER[1]

Griffith University, Brisbane, Australia

In the ten years since Australia's first large-scale scoping study of Work-Integrated Learning (WIL) there has been a rapid increase in WIL research and undergraduate WIL opportunities. Though well-established in undergraduate degrees, WIL in postgraduate research degrees is relatively unexplored. Less than half of PhD graduates in Australia are employed by the higher education sector, therefore transferable skills and industry experience are increasingly important. The last few years have seen several Australian peak bodies call for further investment in the employability of PhD graduates. The Australian Government recently provided funding aimed at encouraging doctoral students to undertake internships and placements. Drawing on seven qualitative interviews with past and present PhD students at Griffith University, this exploratory paper explores how PhD students view the potential role of WIL in higher degree research programs in Australia and the challenges they see as facing the broader implementation of WIL across PhD programs. This has broader implications for how WIL may be utilized to equip doctoral graduates with the industry experience and training to improve their employability outside the higher education sector.

Keywords: Work-integrated learning, PhD, higher education, internships, Australia

The requirements of PhD graduates in Australia are rapidly changing: what was once the fast-track to an academic career is now an uncertain path to tread. Less than half of PhD graduates in Australia find themselves employed in the higher education sector (McGagh et al., 2016). Graduates emerge from doctoral degrees facing an uncertain job market that is unwilling to invest in underprepared new graduates. From the perspective of industry, small and medium business have neither the time nor the resources to train new graduates, and therefore opt for experienced employees, while big businesses, which were once bastions of graduate employment and training, are now employing fewer and fewer new graduates (Bentley, 2018). Well-trained, experienced graduates are desired across the board, and this is no exception for those emerging with Higher Degrees by Research (HDR). Transferable skills and industry experience are becoming increasingly important to students and potential employers. As such, discussions in Australia have now turned to how best to equip doctoral graduates with the skills and experience that optimize employability while still supporting research outputs.

In the ten years since Australia's first large-scale scoping study of Work-integrated Learning (WIL) (Patrick et al., 2009), there has been a rapid increase in both WIL research and undergraduate WIL opportunities. WIL is an umbrella term describing a range of initiatives that integrate formal academic learning with work-based practice in order to equip students with workplace-ready skills and prepare for their transition into the workforce (D. Jackson, 2015; Patrick et al., 2009). WIL is relatively widespread in undergraduate degrees, is highly supported by industry and governments, and well-regarded by graduates (Hall, Pascoe, & Charity, 2017; D. Jackson, 2015; J. Jackson, Jones, Steele, & Coiacetto, 2017; Reeders, 2000). While WIL is well-established as an important component of undergraduate degrees, its role in postgraduate and particularly research degrees is less explored.

The Australian Government has recently announced $28 million of funding for APR.Intern, a not-for-profit organization that facilitates postgraduate internships. While there have been calls to increase

---

these kinds of opportunities for postgraduate students, most notably in the Australian Council of Learned Academics' (ACOLA) *Review of Australia's Research Training System* (McGagh et al., 2016), the Government's tacit recognition of APR.Intern raises more questions than answers. Should universities in Australia be outsourcing their research to independent third parties via internship programs for PhD students? Or should they be working to incorporate internships within industry and the tertiary sectors themselves? This article seeks to identify key elements required for the structure and format of WIL within a doctoral program, and how WIL works within a multi-disciplinary higher degree research (HDR) landscape.

WORK-INTEGRATED LEARNING IN AUSTRALIA

Recent research suggests that doctoral graduates are less represented in academic careers than other professional careers (e.g., research, and non-research based), with less than fifty-percent of Australian research doctorate graduates being employed in the university sector (McGagh et al., 2016; Neumann & Tan, 2011). The ACOLA authors suggested that doctoral graduates would need further industry experience and training from the universities to prepare them for employment opportunities beyond university (McGagh et al., 2016). Furthermore, there are increasing expectations from Australian employers that universities prepare work-ready students with generic graduate competencies (Orrell, 2018). For instance, of the 500 Australian employers surveyed, over fifty percent reported dissatisfaction with graduates' planning and organizational skills, with employers perceiving that graduates lacked job readiness (Australian Workforce Productivity Agency, 2014). While employers acknowledged that universities provide students with strong theoretical foundations, there were concerns regarding the ability of students to apply their academic knowledge to the workplace (Australian Workforce Productivity Agency, 2014). Due to evolving economic, socio-cultural, technological and environmental factors of the work environment, graduates must adapt by utilizing their employability skills learned in various contexts and range of experiences to remain competitive within the workforce (Cleary, Flynn, Thomasson, Alexander, & McDonald, 2007). One approach that could facilitate the enhancement of students' work readiness and transferal of academic knowledge to the work environment is WIL.

Work-Integrated Learning (WIL) is an overarching term describing a range of university initiatives through which tertiary students integrate formal academic learning with work-based practice, with the core objective of better preparing students' transition into the workforce (D. Jackson, 2015; Patrick et al., 2009). Research has demonstrated the positive benefits of WIL on undergraduate students and industries, both in terms of creating work-ready graduates and advancing the industries (D. Jackson, 2013; PhillipsKPA, 2014). Students who participate in WIL are more psychologically prepared to enter the workforce (Purdie, Ward, McAdie, King, & Drysdale, 2013) and develop a stronger sense of professional identity (D. Jackson, 2013; Trede, 2012). Employers benefit from WIL programs by gaining future access to work-ready graduates, in addition to effective short-term employees at minimum cost (Abeysekera, 2006; PhillipsKPA, 2014). WIL represents a widespread and widely accepted approach to practice-based learning in undergraduate tertiary programs in Australia, though how WIL might be applied to postgraduate courses is less understood.

WORK-INTEGRATED LEARNING AND HIGHER DEGREES IN THE UNITED KINGDOM

Based on its success in Australia at an undergraduate level, WIL presents a significant opportunity for doctoral students to develop transferable, workplace-ready skills. Given the state of PhD graduate employment, developing these skills is essential if students are to emerge from research degrees, not

only with an academically significant piece of research and qualification, but with the professional knowledge to allow them to adapt to employment outside of the higher education sector. There are a number of examples from around the world where WIL has been successfully employed within research degrees. In the US, Smaglik (2015) discusses the results of the Broadening Experience in Scientific Training (BEST) program: a five-year pilot project aimed at preparing biomedical graduate and postgraduate students for a non-tenure-track career. The program offered career development courses and internships to 14,000 students across 17 universities. Similarly, Baryshnikov, DeVille, and Laugesen (2017) discuss the paucity of academic positions in the field of mathematics in the US, particularly in light of their findings that PhD graduates feel unprepared to pursue career pathways beyond mathematical academia. Despite these examples of research into PhDs and WIL, the US lags behind other countries in this respect (Clevenger, Ozbek, Fanning, & Vonfeldt, 2015). One case that is particularly relevant to the situation in Australia is that of the PIPS program in the United Kingdom.

Doctoral education in the UK has undergone significant changes over the past 15 years. Many of these changes stem from the UK Research Councils' *Set for Success* review and subsequent report on postgraduate education (Roberts, 2002). The report suggested that postgraduate education did not lead students to develop the transferable skills and knowledge required by employers (Baxter & Burden, 2008). The graduate job market for PhD graduates in the UK is similar to that in Australia, with only a small percentage going on to work in academia (Jones & Warnock, 2015), therefore the development of transferable skills was a key concern. According to the report (Roberts, 2002, p. 11): ". . . institutions are not adapting quickly enough to the needs of industry or the expectations of potential students. The review therefore believes that the training elements of a PhD, particularly training in transferable skills, need to be improved considerably". The report also noted widespread concern over the levels of collaboration on research and training between universities and businesses (Roberts, 2002). The findings of the Set for Success report had far-reaching consequences and resulted in significant funding boosts to the higher education sector, particularly in relation to postgraduate training.

The Set for Success report represented a major cultural change in terms of career support for doctoral researchers, but its tangible impacts on employability and workplace readiness were less significant. Ten years later, a review of industry-university collaboration found that, while there had been significant steps made towards improving the employability of doctoral graduates, "the level of preparation for PhD students outside academe remains disappointing" (Wilson, 2012, p. 64). The report recommended that all PhD students have the opportunity to undertake at least one 8 to 12-week internship over the course of the program (Wilson, 2012). As this later report was being finalized, the UK Biotechnology and Biological Sciences Research Council (BBSRC) made it compulsory for students funded through their doctoral training centers to undertake a three-month internship unrelated to their subject of doctoral research (Jones & Warnock, 2015; Pope, 2016). This represented a radical new approach to doctoral internships; the pilot PIPS (Professional Internships for PhD Students) were highly successful with interns finding the experiences beneficial and all host organizations offering internships to the subsequent cohorts of students (Jones & Warnock, 2015). The PIPS program has continued to expand since the pilot project with Pope (2016) finding significant quantitative and qualitative evidence of the benefits for both doctoral students and internship providers in a recent iteration conducted across four universities in Scotland. Bringing in the perspective of another key stakeholder in this equation, (Garza & Jones, 2017) investigated how academic supervisors perceived WIL in PhD programs. Despite initial concerns that internships could undermine academic performance, the authors found that academic supervisors whose students had completed their internships perceived that their students had greater maturity, improved research skills and were more effective in their work than before.

PHDS AND WORK-INTEGRATED LEARNING IN AUSTRALIA

There is clearly a significant global body of work that explores the role of WIL in PhD programs. There is, however, a significant gap in the literature in this area in Australia. Despite this gap in both research and practice, Australian PhD graduates face similar challenges to their counterparts in the US and the UK, particularly in relation to workplace readiness outside of academia. This prompts serious questions about the purpose of doctoral study, if not for employability. As Mowbray and Halse (2010) argue: "current debates that question the real-world value of the PhD testify to the epistemological ambiguities surrounding the contemporary purpose of the PhD" (p. 653). Such a discussion lies beyond the scope of this research but represents a valuable area for future research. Despite this lack of epistemological clarity, the number of PhD completions in Australia has more than doubled over the last two decades; there are, quite simply, more PhD graduates than there are academic jobs (McCarthy & Wienk, 2019). McCarthy and Wienk (2019) suggest that there is a knowledge gap: public and private sector employers lack understanding on the value of engaging a PhD graduate, and PhD graduates are unaware of employment opportunities outside of academia. Based on its success in Australia at an undergraduate level, WIL presents a significant opportunity for bridging this gap by introducing employers to the value of a PhD skillset while allowing doctoral students to develop transferable, workplace-ready skills. Given the state of PhD graduate employment, developing these skills is essential if students are to emerge from research degrees, not only with an academically significant piece of research, but with the professional knowledge to allow them to adapt to employment outside of the higher education sector. Australia currently does not have dedicated funding available for the delivery of transferable skills to its HDR candidates and has less emphasis on the development of transferable skills within its research education system (McGagh et al., 2016). In addition, Australia has been slow to support industry placement initiatives, potentially reflecting its poor performance in research engagement between tertiary institutions and industry (Radloff, Matthews, Bibby, & Edwards, 2017). For instance, Australia was positioned last, and second last out of 30 Organization for Economic Cooperation and Development (OECD) nations in terms of small and medium enterprises collaborating with higher education and public research institutions on innovation, and large businesses respectively (McGagh et al., 2016).

It is estimated that less than 120 of approximately 20,000 Australian HDR candidates participated in internship schemes for research students in 2015. In contrast, Canadian HDR candidates are 16 times more likely to commence a placement compared to Australian candidates (Orrell, 2018). Furthermore, a 2015 postgraduate research experience report indicated that while the majority of research graduates reported overall satisfaction with their completed degree (Graduate Careers Australia, 2016), approximately 30 percent of research graduates indicated that their education and skills were not fully utilized in their current employment position (Macquarie University, 2018). Moreover, there are increasing expectations for graduates to be equipped with broader knowledge, experience and industry skill sets (e.g., business, commercialization, entrepreneurship), in addition to engaging with industry throughout their HDR education (Radloff et al., 2017). Given the widely accepted benefits of WIL and the rapidly evolving employability environment that PhD graduates find themselves within, WIL represents a logical extension of postgraduate research degrees. Though there are myriad questions around how best to implement WIL within HDR programs, this research focusses on PhD student perceptions of WIL. This represents a first step towards understanding the broader role of WIL in PhD programs. Though there are other key stakeholder groups that warrant further research, namely employers and PhD supervisors, this initial work represents an exploratory assessment of PhD student attitudes towards WIL.

METHODOLOGY AND METHODS

This research represents part of a broader investigation into approaches to WIL in Australia. Given the array of approaches to WIL in postgraduate research degrees, this research aimed to go directly to the source so as to explore how PhD students conceptualize potential WIL experiences within their research degrees. The aim of this research was not to produce a representative sample for generalization but instead to conduct exploratory, qualitative research in order to understand attitudes towards WIL in PhDs. Ethical approval was granted by the Griffith University Human Research Council (HREC 2018/906). With these research aims in mind, grounded theory was selected as the most appropriate methodology. While grounded theory in its traditional forms aligns with a more positivist and post-positivist perspective (Clarke, 2007; Spencer, Pryce, & Walsh, 2014), it has been adapted to suit constructivist inquiries. In her extensive work on constructivist grounded theory, Kathy Charmaz (2014, p. 10) observes that: "We construct our grounded theories through our past and present involvements and interactions with people, perspectives, and research practices… Participants' implicit meanings, experiential views - and researchers' finished grounded theories - are constructions of reality". In contrast to Glaser and Strauss's (2017) "discovery" of grounded theory, constructivist grounded theory recognizes the constructed nature of emerging research findings and that the resulting portrayals are interpretive, rather than exact. Grounded theory is an appropriate methodology for explorations of WIL as it "does not attempt to adapt, simplify nor obscure the real-world as a research context" (Bytheway, 2018, p. 253). In alignment with constructivist grounded theory, this research employed several "sensitizing concepts" that were used to guide inquiry and acted as tentative tools for developing ideas and themes (Charmaz, 2014, p. 17). The sensitizing concepts employed related to predominant practices of WIL in Australia. Though the use of such concepts stands in stark contrast to Glaser and Strauss's (2017) grounded theory with its theoretical blank slate as a starting point, the use of sensitizing concepts and background knowledge can assist in refining research questions and allows the research to benefit from theoretical sensitivity (Pigeon, Henwood, Hardy, & Bryman, 2004).

Having developed the sensitizing concepts associated with the constructivist grounded theory methodology, the primary method of data collection was through in-depth interviews. A purposive sample of students at various stages of their PhD program was selected. A key criterion for participant recruitment was that the students be 'familiar' with WIL, either through having participated in a WIL experience throughout their prior studies or by being exposed to WIL in their professional life. Seven Griffith University students from a range of disciplines and at varying stages in their PhD programs were interviewed. Interviews were semi-structured and in-depth with open-ended questions aimed at collecting descriptive qualitative data. Given the exploratory nature of the research, the interview questions were aimed at establishing general perceptions of and attitudes toward WIL in PhD programs. Participants were asked about the value of doing an internship as part of a doctoral program, where they would prefer to do an internship in their degree structure, and who would be responsible for organizing and supervising the internship. Data collected from the interviews was coded thematically, with the developing themes then explored in light of existing WIL literature.

Despite the use of a constructivist approach to grounded theory, a more traditional approach was taken in the early stages of data analysis. Interviews were transcribed and uploaded into NVivo qualitative analysis software and were first coded line-by-line in order to extract any trends or common themes. These themes were then used to conduct axial coding in order to identify relationships between these codes and synthesize the data in new ways (Charmaz, 2014). Finally, the data was re-coded based on thematic topics arising from the previous analysis of the initial coding phases and brought into conversation with the aforementioned sensitizing concepts.

FINDINGS AND DISCUSSION

Based on the data collection and subsequent analysis, a number of themes emerged relating to how students view the potential of WIL as part of PhD programs.

Motivation

The first key theme that was elicited from the research data was around motivation. All interviewees discussed motivation in some way. The majority of participants discussed the potential of WIL having a motivating effect on PhD students. There were a number of different interpretations of why WIL might act as motivation. The opportunity to apply their research to a real-world setting was appealing to one interviewee, while two others discussed the changes in perspective that might be prompted by WIL placements. Immersion in the community under investigation was seen as invaluable by an interviewee in the health discipline, while one interviewee from an arts discipline discussed the value in seeing the impact of their research in practice. For one interviewee, WIL was viewed as a potential source of clarity during challenging times during the PhD program. (L1) noted:

> I think it might've it might have been quite re-invigorating. I think it might have, in terms of motivation, particularly when you sort of get bogged down in your data and you hit those points where you're unsure about the direction in which your research is taking. I think it would've been really useful as sort of a point of re-focusing and maybe even in the initial stages when you're sort of scoping out the research, I think that might've been a really useful point because it would've helped ground the research a bit more, I think.

The one interviewee who did not discuss motivation as an outcome of WIL, instead raised motivation as it relates to designing WIL for PhD programs. She explained that, while some students were highly self-motivated, others struggled to maintain momentum and productivity, therefore adding a WIL experience would represent a significant challenge when students were already struggling with intrinsic motivation.

Industry Engagement

The second major theme within the data was the value of industry engagement. WIL was viewed as a way of increasing engagement between students and industry by all interviewees. When questioned about industry engagement and their specific research, the results were less clear. Several interviewees expressed a lack of clarity as to which industry they might engage with, given the academic nature of their research. Those interviewees engaged in what they saw as more "grounded" or "applied" research though, were quick to point out the value of working closely with industry. Several interviewees saw industry engagement as particularly important to those students engaged in highly theoretical or literature-driven work, and those without experience in their relevant industry. (K3) was able to draw connections back to their own research:

> So, this actually came up in my research. For professionals who have just worked the academic world, they can't relate their research to a real-world outcome or impact because they don't understand end uses and needs. If they had more industry experience, whether it's in a corporate or non-for-profit or government kind of sector, they would understand the end uses experiences or needs and why that product, or that bit of research, or that knowledge, is of importance. When I look at my PhD, it's important for me to understand the experience of my participants, because

then I can understand then how the knowledge I'm creating will actually enhance their experience.

WIL programs were also seen to contribute to graduate outcomes and employability by providing opportunities to develop professional networks while also raising awareness of the employment opportunities in industry, as opposed to the traditional academic career path. One interviewee saw the increasingly competitive marketplace as an opportunity for PhD students: "In my experience, different industries are starting to understand or appreciate the need for research. … Getting that competitive edge through research, I think, is growing in importance" (M5).

Authentic Experience

In their research on internships and postgraduate degrees in the UK, Jones and Warnock (2015) observed that such programs put pressure on universities to be more outward facing. "Networking between universities and employers, and the creation of collaborative and mutually beneficial projects, will need to become more commonplace" (Jones & Warnock, 2015, p. 222). The value of collaboration between universities and industry was highlighted by interviewees in a number of ways. Firstly, as discussed earlier, interviewees viewed industry engagement as valuable in terms of building networks and applying or grounding research into its real-world context. Secondly, industry engagement and collaboration were seen as key indicators of authentic WIL experiences by interviewees. In general, interviewees saw university-led WIL as more relevant to those pursuing an academic career upon graduation, while external placements were more appealing to those hoping to work in industry. This represents a potential image problem associated with university-led WIL, as it is seen as more academic and less authentic than external WIL placements. Authentic experience was valued by most interviewees, with one discussing the limitations of simulations:

> I think an authentic experience would be a bit more valuable. I mean, simulations can really only take you so far in terms of learning the basic skills, but really getting out into the work force and being able to sort of apply, not only your research skills, but also your . . . I guess your ability to problem solve and respond to different situations on the fly and being able to adapt to the real-world situation, I think is important. I'm not sure that you would necessarily get that from a simulation as opposed to an authentic WIL experience (D3).

One interviewee suggested that potential employers' perceptions of authenticity were perhaps more important than the authenticity of the experience itself.

> Actually, I think it's important that they have a reputation for providing an authentic experience. Whether that necessarily is an authentic experience isn't necessarily apply. I mean, from an employer's point of view they just need to know that I've done it. I don't necessarily need to have done an authentic one. Long as they believe I've done an authentic one (N2).

Such perspectives provide valuable insight into PhD students' perception of university-led WIL. This presents an area for future research, specifically delving deeper into such student perspectives to determine why such an opinion of university-led WIL exists. Comparing PhD student perspectives on university-led WIL with the opinions of industry stakeholders and potential employers may also help to either ground university-led WIL more deeply in industry or encourage university-led WIL for PhD students to focus more intently on those students who hope to pursue academic careers.

Program Design

The final theme that was observed throughout the data was concerns over what WIL within a PhD program might look like. There was little consensus among the interviewees and a number of concerns raised. Most interviewees prefaced their answers to research design questions by stating that the shape of any WIL program would be highly dependent on the nature of the PhD project in terms of discipline, research focus, and so on. One interviewee could see the benefits of participating in WIL at various stages of the PhD program:

> I think the beginning. I think it depends, but I think at the beginning because then you get to know what the needs are, but then the option of coming in again at the end to actually apply the knowledge could be good or help work with the community to see where they that knowledge could be utilized (L1).

Another interviewee was very unclear on how WIL could be applied in a meaningful way to their specific discipline.

> I think it's a good idea, but I'm not sure how it would work. Only because PhDs can be so specific in what it is you're doing. So I'm not entirely sure how you could find an internship that really hit the nail on the head in terms of your topic and what it is you're actually doing for your PhD. I'm doing a doctorate in philosophy which of course is just an open slather in terms of what you can choose to do . . . So, I think an internship for PhD programs would be beneficial. I'm just not sure how it would work in terms of ensuring that the time during the internship and the placement is pinpoint relevant to your PhD topic (E7).

Despite the disagreement and lack of clarity over what WIL within PhD programs should look like, the majority of interviewees were concerned about the boundaries between placements and research. Interviewees discussing industry placements were concerned about the impact on workload, specifically about incidental tasks distracting from research. The consensus was that placements would need to be extremely targeted and relevant to the specific work of the PhD student, and compartmentalized so as not to interfere with any research or course-related milestones or workloads. One interviewee saw this as a key challenge to implementing WIL in PhDs:

> I think an internship for PhD program would be beneficial. I'm just not sure how it would work in terms of ensuring that the time during the internship and the placement is pinpoint relevant to your PhD topic . . .. To be honest with you I wouldn't want to be wasting my time with an internship that I don't see is relevant or is just time-consuming and taking me away from what it is I want to do (N6).

There is clearly much work to be done in terms of clarifying the design of WIL programs and how they fit within and complement PhD studies. The insight of the PhD students themselves is invaluable in shaping these programs and, as such, forms the basis of the pilot program currently in development at Griffith University.

IMPLICATIONS

Resourcing

WIL is generally considered to be "resource-intensive" from the perspective of the universities (Harris, Jones, & Coutts, 2010). Adequate staffing is essential at all stages of a WIL program, from the design

to the delivery and evaluation. In addition to providing ongoing and, occasionally, intensive support to students throughout the placements, staff must also guide organizational supervisors in order to ensure an acceptable level of learning is met (Bates, 2011). Resourcing and recognition for academic and administrative staff represents a key challenge for WIL (Bates, 2011; Patrick et al., 2009). The challenge is further complicated by offering WIL to PhD students across disciplines. While students should be encouraged to source their own placements, universities may need to consider employing diverse staff with experience in finding WIL opportunities across a range of organizations (Jones & Warnock, 2015). Interviewees broadly agreed that organizing and structuring WIL in PhD programs would need to be a collaborative process between students and the university. One student bluntly stated that if they had to organize a placement themselves, they wouldn't do it. In contrast, the one interviewee who did actually complete a WIL placement as part of their PhD program explained that, in their case, it was more appropriate for them to initiate the partnership and take the lead in organizing the placement, as opposed to following a university-led model. When considering the intensive resource requirements associated with offering WIL to doctoral students, it is easy to see the appeal of third-party providers. While outsourcing to third parties may alleviate some of the resourcing pressures faced by universities, the responsibility to work with these organizations and support students through their interactions with them remains. Additional challenges exist around sourcing appropriate placements that fit with doctoral study. How an internship or WIL placement might contribute to the outcomes for a doctoral level student requires further investigation.

Third-Party Providers

While the use of third-party providers is widespread in the UK and Canada, the role of such organizations in Australia is still yet to be established. The Australian Government's significant funding boost to third-party internship provider, APR.Intern, may suggest the future direction of postgraduate WIL policy. For a not-for-profit, APR.Intern presents a high-end image with their current marketing collateral, and they are positioning themselves as a prestige service organization for universities. With the support of the Australian Government, APR.Intern aims to deliver 14,000 PhD student internships over four years through their "supporting more women in STEM careers: Australian Mathematical Sciences Institute (AMSI) – National Research Internships Program" (APR.Intern, 2018). Third-party WIL providers offer a critical area for future research. At the time of writing, there were only five internships available in Queensland advertised on their website. Students (and universities) are encouraged to source and bring potential internship partners to the organization to facilitate the internship. However, third-party organizations offer a potential solution to the challenges associated with resourcing WIL programs as well as the lack of clarity on what PhD WIL placements should look like by offering a specific model of WIL available to a range of students. Significantly the under resourced not-for-profit sector might be limited from participating in the current third-party government funded model despite benefiting greatly. Options for securing a PhD intern require organizations to contribute between $5-13K with government subsidies available for some internships. Anecdotally, resource strapped not-for-profit service providers have indicated they would find it difficult to utilize the current model. These not-for-profits suggest they would have difficulty finding spare funds to contribute funding for a PhD Intern.

Despite the potential benefits, the data revealed that the PhD students interviewed had little to no awareness about third-party WIL providers, and primarily saw organizing WIL placements as the role of the student, the university, or a collaboration between the two. Based on this, there is a clear disconnect between priorities and perceptions at a policy level, and those of students at the grassroots level. If third-party providers are to offer a widespread and accepted service to universities and PhD

students, there needs to be further research into the impacts and efficacies of such placements from the perspectives of both students and university staff, with particular focus on disciplines other than STEM. Further research has the potential to raise awareness among PhD students of the opportunities available through third parties, which may also serve to alleviate some of the pressures that WIL can place on university staff workloads.

CONCLUSION

The environment in which PhD students and graduates find themselves in is rapidly changing. Not only do PhD graduates need to contribute to new knowledge through a significant and impactful piece of research to their field, they also need to develop the practical, transferable skills that make them attractive employees outside of academia. Work-integrated learning is an umbrella term encompassing a range of university initiatives that integrate formal learning with practice workplace experiences in order to ease the transition to the workforce. In Australia, WIL is widely used across undergraduate programs and represents a respected pedagogical approach that combines practical workplace experience with academic and theoretical knowledge. Despite several universities offering WIL APR opportunities for postgraduate students, there is little sector-wide direction in regard to developing transferable, work-ready skills in PhD students. The Australian Government's recent boost in funding to third-party internship provider, APR.Intern, perhaps implies future policy directions, but there is work to be done at the grassroots in terms of managing the expectations and workloads of PhD students in terms of WIL and available opportunities. While PhD students could see the value of WIL in a number of areas, namely in contributing to motivation, facilitating industry engagement, and improving graduate outcomes, there were a number of concerns raised about placement design, workloads, and the role of authentic experiences in WIL. While the UK and Canada, as well as several domestic universities, offer potential guides, there is a need for broader, sector-wide research incorporating the perspectives of students, universities, and industry before any national programs are rolled out.

REFERENCES

Abeysekera, I. (2006). Issues relating to designing a Work-Integrated Learning (WIL) program in an undergraduate accounting degree program and its implications for the curriculum. *Asia-Pacific Journal of Cooperative Education, 7*(1), 7-15.

APR.Intern. (2018). *About APR.intern*. Retrieved from https://aprintern.org.au/about-apr-intern/

Australian Workforce Productivity Agency. (2014). *Work integrated learning: AWPA scoping paper.* from AWPA, Canberra: http://hdl.voced.edu.au/10707/309570

Baryshnikov, Y., DeVille, L., & Laugesen, R. (2017). Math PhD careers: New opportunities emerging amidst crisis. *Notices of the AMS, 64*(3), 260-264.

Bates, M. (2011). Work-integrated learning workloads: The realities and responsibilities. *Asia-Pacific Journal of Cooperative Education, 12*(2), 111-124.

Baxter, J., & Burden, P. (2008). Redefining doctoral programmes as work-integrated learning experiences. In *Work Integrated Learning (WIL): Transforming futures… practice…pedagogy… partnerships* (pp. 28-34). Sydney, Australia: Australian Collaborative Education Network (ACEN).

Bentley, D. (2018, February 27). How universities can make graduates employable with connections to industry. *The Conversation*. Retrieved from https://theconversation.com/how-universities-can-make-graduates-employable-with-connections-to-industry-91838

Bytheway, J. (2018). Using grounded theory to explore learners' perspectives of workplace learning. *International Journal of Work-Integrated Learning, 19*(3), 249-259.

Charmaz, K. (2014). *Constructing grounded theory*. New York, NY: Sage.

Clarke, A. E. (2007). Grounded theory: Critiques, debates, and situational analysis. In N. Denzin and Y. Lincoln (Eds.), *The SAGE handbook of social science methodology*, (pp. 423-442). New York, NY: Sage.

Cleary, M., Flynn, R., Thomasson, S., Alexander, R., & McDonald, B. (2007). *Graduate employability skills: Prepared for the business, industry and higher education collaboration council*. Canberra, Australia: Australian Government. Retrieved from http://www.dest.gov.au/highered/bihecc

Clevenger, C. M., Ozbek, M. E., Fanning, B., & Vonfeldt, S. (2015). Case study of work-based learning involving BIM for infrastructure in support of graduate construction research. *International Journal of Construction Education and Research, 11*(3), 163-178.

Garza, T. G., & Jones, H. M. (2017). *The impact of the internship experience on returning doctoral students*. Retrieved from http://www.asetonline.org/wp-content/uploads/2017/07/Sheffield-Report.pdf

Glaser, B. G., & Strauss, A. L. (2017). *Discovery of grounded theory: Strategies for qualitative research*. London, UK: Routledge.

Graduate Careers Australia. (2016). *Postgraduate research experience 2015. A report on the perceptions of recent higher degree research graduates*. Retrieved from http://www.graduatecareers.com.au/wp-content/uploads/2016/11/Postgraduate-Research-Experience-2015.pdf

Hall, M., Pascoe, D., & Charity, M. (2017). the impact of work-integrated learning experiences on attaining graduate attributes for exercise and sports science students. *Asia-Pacific Journal of Cooperative Education, 18*(2), 101-113.

Harris, L., Jones, M., & Coutts, S. (2010). Partnerships and learning communities in work-integrated learning: Designing a community services student placement program. *Higher Education Research & Development, 29*(5), 547-559.

Jackson, D. (2013). The contribution of work-integrated learning to undergraduate employability skill outcomes. *Asia-Pacific Journal of Cooperative Education, 14*(2), 99-115.

Jackson, D. (2015). Employability skill development in work-integrated learning: Barriers and best practice. *Studies in Higher Education, 40*(2), 350-367.

Jackson, J., Jones, M., Steele, W., & Coiacetto, E. (2017). How best to assess students taking work placements? An empirical investigation from Australian urban and regional planning. *Higher Education Pedagogies, 2*(1), 131-150.

Jones, H. M., & Warnock, L. J. (2015). When a PhD is not enough: A case study of a UK internship programme to enhance the employability of doctoral researchers. *Higher Education, Skills and Work-Based Learning, 5*(3), 212-227.

Macquarie University. (2018). PACE Strategy. Retrieved from https://www.mq.edu.au/about/about-the-university/strategy-and-initiatives/strategic-initiatives/pace-strategy

McCarthy, P. X., & Wienk, M. (2019). *Who are the top PhD employers?* Retrieved from https://amsi.org.au/wp-content/uploads/2019/04/advancing_australias_knowledge_economy.pdf

McGagh, J., Marsh, H., Western, M. C., Thomas, P., Hastings, A., Mihailova, M., & Wenham, M. (2016). *Review of Australia's research training system* (0994373821). Retrieved from Australian Council of Learned Academies (ACOLA) website https://acola.org.au/wp/PDF/SAF13/SAF13%20RTS%20report.pdf

Mowbray, S., & Halse, C. (2010). The purpose of the PhD: Theorising the skills acquired by students. *Higher Education Research & Development, 29*(6), 653-664.

Neumann, R., & Tan, K. K. (2011). From PhD to initial employment: The doctorate in a knowledge economy. *Studies in Higher Education, 36*(5), 601-614.

Orrell, J. (2018, April 30). Work Integrated Learning: why is it increasing and who benefits? *The Conversation.* Retrieved from https://theconversation.com/work-integrated-learning-why-is-it-increasing-and-who-benefits-93642

Patrick, C.-J., Peach, D., Pocknee, C., Webb, F., Fletcher, M., & Pretto, G. (2009). *The WIL (Work Integrated Learning) report: A national scoping study*. Brisbane, Australia: Queensland University of Technology.

PhillipsKPA. (2014). *Engaging employers in work integrated learning: current state and future priorities*. Retrieved from Department of Education, Richmond, Victoria website: https://docs.education.gov.au/system/files/doc/other/phillipskpa-wil-research-report.pdf

Pigeon, N., Henwood, K., Hardy, M., & Bryman, A. (2004). Grounded theory. In M. Hardy and A. Bryman (Eds.), *Handbook of data analysis* (pp. 625-648). London, UK: Sage.

Pope, C. (2016, September). *Professional internships for PhD researchers: An integral part of doctoral training (*Occasional paper C2*).* Paper presented at the Vitae Researcher Development International Conference, Manchester, UK. Retrieved from https://www.vitae.ac.uk/vitae-publications/reports/C2%20%20Professional%20internships %20for%20PhD %20researchers/view

Purdie, F., Ward, L. J., McAdie, T. M., King, N., & Drysdale, M. (2013). Are work-integrated learning (WIL) students better equipped psychologically for work post-graduation than their non-work-integrated learning peers? Some initial findings from a UK university. *Asia Pacific Journal of Co-operative Education, 14*(2), 117-125.

Radloff, A., Matthews, D., Bibby, Y., & Edwards, D. (2017). *Final report: Review of the postgraduate research experience questionnaire (PREQ)*. Retrieved from Australian Council for Educational Research website: https://www.qilt.edu.au/docs/default-source/default-document-library/preq-review-final-reportfd7d8791b1e86477b58fff00006709da.pdf?sfvrsn=ab95e33c_2

Reeders, E. (2000). Scholarly practice in work-based learning: Fitting the glass slipper. *Higher Education Research & Development, 19*(2), 205-220.

Roberts, G. G. (2002). *SET for success: The supply of people with science, technology, engineering and mathematics skills: The report of Sir Gareth Roberts' review*. Retrieved from Institute of Employment Studies website: https://www.employment-studies.co.uk/resource/set-success-report-sir-gareth-roberts-review

Smaglik, P. (2015). Internships: Mind wide open. *Nature, 525*(7567), 147-148.

Spencer, R., Pryce, J. M., & Walsh, J. (2014). Philosophical approaches to qualitative research. In P. Leavy (Ed.), *The Oxford handbook of qualitative research* (pp. 81-98). Oxford, UK: Oxford University Press.

Trede, F. (2012). Role of work-integrated learning in developing professionalism and professional identity. *Asia-Pacific Journal of Cooperative Education, 13*(3), 159-167.

Wilson, T. (2012). *A review of business–university collaboration*. Retrieved from Government of UK website: https://www.gov.uk/government/publications/business-university-collaboration-the-wilson-review