

The emerging future: Innovative models of work-integrated learning

JUDIE KAY¹

RMIT University, Melbourne, Australia

SONIA FERNS

Curtin University, Perth, Australia

LEONI RUSSELL

RMIT University, Melbourne, Australia

JUDITH SMITH

Queensland University of Technology, Brisbane, Australia

THERESA WINCHESTER-SEETO

Winchester-Seeto Consultancy, Sydney, Australia

Work-integrated learning (WIL) is a national priority and a strategic direction for Australian universities. To increase industry engagement, there is a need to identify emerging WIL models that enable flexibility while optimizing outcomes for stakeholders. This Australian Technology Network (ATN) project explored approaches that overcome constraints to engagement, particularly for small to medium enterprises (SMEs). The preliminary qualitative phase comprised a literature review, workshops and interviews. Examples of emerging WIL models, both curricula and co-curricular, were clustered into five models: micro-placements, online projects or placements, hackathons, competitions and events, incubators/ start-ups and consulting. This paper outlines these models and summarizes defining features, enablers, challenges and opportunities. Contemporary trends informing innovative WIL design and implementation emerged. Features fell into three broad areas, stakeholder engagement, design elements and co-design with partners. Enablers, challenges and opportunities in the implementation of these WIL models that respond to the changing nature of work were documented.

Keywords: Small to medium enterprises, innovation, hackathons, incubators, micro-placements, consulting, co-design

Enhancing student employability and improving graduate outcomes has become a key priority for Australian Universities with the Australian Government, as well as Australian peak industry groups, monitoring graduate outcomes and questioning the capabilities and skills of university graduates and their ability to be successful in the rapidly changing labor market (Hagel, Brown, Mathew, Wooll, & Tsu, 2014; Australian Higher Education Industrial Association [AHEIA] & PriceWaterhouseCoopers [PWC], 2016). Embedding work integrated learning (WIL) into curriculum, whereby students engage and network with industry resulting in enhanced student work readiness, has gained greater traction with university leadership as a mechanism to meet this challenge. Further evidence of a national focus on WIL is the development of a National WIL Strategy (Universities Australia [UA], Australian Chamber of Commerce and Industry [ACCI], The Business Council of Australia [BCA], & Australian Collaborative Education Network [ACEN], 2015) through a collaboration between peak Australian industry associations: BCA, ACCI, Australian Industry Group (AiG), UA, and ACEN, the peak body for WIL in Australia. This strategy seeks to enhance and grow WIL opportunities and programs across Australia through a range of approaches focused on enhancing partnerships between industry and universities, building capacity in both sectors, and providing support, investment and appropriate regulatory settings (Business Higher Education Forum [BHEF], 2013; ACEN, 2015). Increasing collaboration between universities and industry is seen as a key driver of innovation,

¹ Corresponding author: Judie Kay, judie.kay@rmit.edu.au

pivotal to enhancing the national economy, and providing benefits to the organizations involved (AiG, 2018; UA, 2018).

This expansion of WIL in Australian universities has resulted in increasing competition for WIL opportunities and the emergence of some innovative WIL approaches aimed at broadening engagement with industry, accommodating growing student numbers, and preparing students for a dynamic and constantly evolving workplace in the Australian economy which is characterized by an increased focus on entrepreneurship and innovation (Australian Government, 2016; Withers, Gupta, Curtis, & Larkins, 2016).

This project, funded by the Australian Technology Network (ATN), aimed to investigate innovative approaches to WIL and identify emerging models that are effective in advancing graduate employability through industry engagement and exposure to workplace contexts. While research on WIL has featured prominently in recent years, no previous research has explored innovative models of WIL and substantiated the characteristics implicit in these models. This inaugural study identified innovative WIL models such as micro placements, online projects or placements, and WIL in Incubators and Start-ups, along with other contemporary approaches. The project partners were all part of the ATN group of universities, RMIT University, Curtin University and Queensland University of Technology (QUT). Key partners in the project included two peak Australian industry bodies: ACCI and the AiG. The project focused on models of WIL that overcome constraints to engagement, particularly for small to medium enterprises (SMEs) with fewer than 200 employees. SMEs comprise a large proportion of the business sector in the Australian economy and remain largely untapped in supporting WIL partnerships with universities (PhillipsKPA, 2014). With minimal resources, small numbers of staff, and restricted funding, it is difficult for SMEs to engage in WIL activities (PhillipsKPA, 2014). Project deliverables have identified trends, enablers and challenges to realizing these emerging models.

BACKGROUND

WIL is acknowledged as an important strategy in Higher Education with recognition that, when embedded in the student experience, WIL enhances graduate employability (Rowe & Zegwaard, 2017). However, traditional WIL approaches such as 3 – 12-month work placements sometimes called cooperative education, sandwich years or practicums, are resource intensive, placing additional demands on industry partners (Patrick, et al., 2009, Atkinson, Misko, & Stanwick, 2015). The limitations and challenges for SMEs in hosting and supporting students during traditional WIL activities is one of many deterrents to their engagement (Jackson, Ferns, Rowbottom, & McLaren, 2017). The growth in student numbers at university has placed additional demands on industry partners as the number of students seeking placements and the duration of WIL placements has shown substantial increase in recent years (PhillipsKPA, 2014;). Competition for placements is further exacerbated by non-traditional areas such as business and management, pursuing WIL placements for their students. Increased competition for WIL placements places students from diverse cohorts such as international students and those with disabilities at a disadvantage. These students typically require more support from mentors in an industry setting, thereby adding pressure to an already overloaded system (Gribble, 2014; Peach et al., 2016).

The adequacy of current WIL practices for preparing students to face an uncertain and volatile workforce is also raising questions. In particular, it is predicted that a greater percentage of graduates will move into portfolio careers upon completion of their studies (Helyer & Lee, 2014). In contrast to

traditional professional career pathways, success in a portfolio career requires graduates with a diverse range of skills that equip them for the uncertainty and rigors of entrepreneurial endeavors (AiG, 2016; Bridgstock, 2012). Inter-professional education and working across different disciplines has been identified as an area of need in health professions as it is rarely addressed by current models of WIL (South Eastern Sydney Local Health District, 2013).

In response to these challenges, tertiary institutions are experimenting with new models of WIL. Developments in technology have enabled more rapid connections, both nationally and internationally, which has broadened opportunities for students to liaise with fellow students, supervisors and employers globally (Beeson, 2016). As governments provide funding to stimulate start-up businesses and business incubators (e.g., Boosting Business Innovation Program, 2016) universities are capitalizing on this investment by looking for associated placements or project opportunities. Universities are also reaching out to more diverse partners e.g., community groups and small and medium enterprises (Gribble, 2016). Additionally, in response to industry feedback, universities are becoming more flexible with the duration and timing of placements to accommodate the needs of an already stretched industry sector.

A recurrent theme in the literature is the challenge for universities to successfully engage with small to medium enterprises (SMEs) (Atkinson et al., 2015). "If WIL experiences are to become mainstream in university degrees, then placements and mechanisms for these will need to be tailored to suit the needs of Australian SMEs" (PhillipsKPA, 2014, p. 98). Although SMEs constitute 90% of employing businesses in Australia, they are far less likely than large corporate organizations or government offices to provide WIL opportunities for students (PhillipsKPA, 2014). A mismatch between the needs of universities and those of SMEs is a key reason for the lack of engagement from SMEs. Inflexible university scheduling, prescriptive timing and duration of WIL placements, the type of student activities, and available staff time for student supervision and support, are factors that impact on the capacity of SMEs to engage in WIL (Atkinson et al., 2015). Recognition of and willingness to work around these disparities are necessary for successful engagement between universities and SMEs.

The project aimed to build capacity in universities by showcasing innovative WIL models and encourage greater awareness by industry, particularly SMEs, of strategies for effectively engaging with universities to support WIL activities and overcome existing barriers. This paper outlines the emerging WIL models, their features, enablers and challenges which were identified through collaboration with national and international networks.

RESEARCH APPROACH

This paper reports on the initial finding of the first phase of the project. This first qualitative phase comprised three iterative stages which together provided a strong foundation to inform initial findings (Creswell, 2012) regarding emerging models of WIL. A range of data collection methods were employed over three stages, including a search of contemporary literature, interactive workshops, and webinars with WIL practitioners, and interviews with WIL practitioners, students and industry partners. These multiple sources of data enabled and supported a rich perspective, which in turn, enabled robust thematic analysis (Guest, MacQueen, & Namey, 2012). The project was undertaken under ethical approval for the methodology involving human subjects through RMIT (CHEAN A 20693-02/17)

Stage one involved a search of contemporary literature, spanning the period 2012 to 2017, to identify emerging WIL models, strategies and their key features. Searches included peer-reviewed academic

literature, grey literature such as government and industry reports (e.g., PhillipsKPA, 2014; AiG, 2016; Edwards, Perkins, Pearce, & Hong, 2015) and conference proceedings (e.g., ACEN, WACE) that have the advantage of shorter publication times. Online blogs and event information from the internet also provided leads on emerging models. A matrix was created to map these WIL models, strategies and their key features. The common features of these WIL strategies were then reviewed and categorized to create an initial set of emerging WIL models. Tentative descriptions of the models were developed to inform collaborative inquiry activities undertaken in the second stage of the research.

Stage two involved the exploration of these emerging models with university WIL practitioners through ten international, national and local workshops, webinars and WIL communities of practice meetings. These events attracted in excess of 450 participants. Attendees at these forums were asked to review short descriptions of WIL models and strategies identified in stage one and share new strategies from their own practice and contexts to consider key features, success factors and challenges. Participants were also asked to consider how these strategies aligned or did not align with the initial set of emerging models. Data from these workshop activities was collated and analyzed to inform the review and refinement of the emerging models, their features, enablers and challenges.

Stage three involved further in-depth consideration and analysis of the emerging models through 55 semi-structured interviews with WIL practitioners, industry partners and students who were involved directly with emerging WIL strategies. Interview participants were identified during research stages one and two and through national and international WIL communities of practice. Three sets of predetermined, open-ended questions were developed around the challenges, enablers and success factors to guide the interviews with WIL practitioners, students and industry partners. These questions and other questions emerging from the dialogue between interviewer and interviewee helped illicit key features of the emerging strategies, approaches to their design as well as the consideration of challenges and success factors from the participants' perspectives. Participants were encouraged to be open, thorough and detailed in their descriptions and reflections (Kvale, 2007). Interview data was then analyzed and mapped through the framework of the key features, challenges, enablers and success factors. A thematic analysis of the mapped interview data was used to further refine the emerging models and associated descriptions of their features, enablers and challenges.

FINDINGS

Contemporary trends informing WIL design and implementation were identified from this research. These trends involved students in experiences that provided exposure to start-ups, incubators, and SMEs in multi-disciplinary contexts that promote the development of entrepreneurial skills required for the 21st century world of work. Enhanced strategic focus on global mobility, both nationally and internationally, has given rise to an expansion in global WIL opportunities. Furthermore, industry are seeking greater engagement in WIL as the benefits to their organizations are realized. This trend has led to deeper and more collaborative partnerships where industry partners have input into the design of WIL activities and events. The focus on increasing skills in specific industry sectors (e.g., science technology engineering and mathematics (STEM)) has led to the emergence a number of trends. These include the emergence of brokers for specific industry sectors and also in some instances funding targeting the development of programs to address shortfalls in specific industry areas. The expansion of global universities and an increased demand for global opportunities for students has led to an increase in partnerships both regionally and globally. In addition, alumni are increasingly being utilized as an avenue for linking with global networks. The use of technological platforms has

also become a priority as the demand for students to work beyond the confines of their local context is more pressing.

The trend whereby universities are competing for WIL opportunities has led to enhanced engagement with community organizations; greater flexibility in the structure of WIL experiences; an increase in on-campus opportunities; a focus on the use of technology to provide equitable WIL experiences in a virtual world; and a rise in third party providers who broker opportunities for students. Finally, a trend of significant importance for economic impact is the focus on addressing the expectations of international students. This has led to specifically designed initiatives that cater to the needs of international students in providing exposure to workplace practices. Both state and federal Government in Australia have introduced initiatives and additional funding that support workplace learning for international students.

Table 1 summarizes these trends and the innovative WIL practices that have emerged as a result of the trends. The iterative process of workshops and interviews culminated in validating the data arising from the literature review. The project identified numerous examples which were subsequently clustered into five emerging models of WIL that are becoming increasingly prevalent in the tertiary sector. The models are outlined below along with the defining features, enablers, challenges and opportunities for implementation for each model.

Micro-Placements

Micro-placements typically involve short periods in the workplace ranging from two to ten days where students work individually or in teams on highly focused projects. Micro-placements occur in a diverse range of sectors, usually in small to medium companies and start-ups.

Online Projects or Placements

Online projects or placements involve students and industry working online and potentially geographically-dispersed. Students communicate via a variety of digital platforms and technologies which may not include any face-to-face interaction.

Hackathons / Competitions and Events

Events typically involve students working in teams on one-off intensive activities for and/or with industry partners or with university-based activities. Universities commonly partner with external events, hackathons, festivals or competitions to provide students with industry or community engaged experiences. In some cases, this engagement can involve multidisciplinary teams of students. Hackathons are specific events in which a range of stakeholders' team up to create projects, solve problems, and develop pitches or software over a short period of time. In most cases hackathons are focused on a theme, application type or challenge, are sponsored and co-designed with industry, and often hosted by Universities. Hackathons are frequently competitive, with teams presenting their results to judges.

TABLE 1: Contemporary trends in work-integrated learning.

Contemporary Trends	Emerging / innovative WIL practices
Focus on preparing students for the 21st Century world of work	<ul style="list-style-type: none"> ● WIL in start-ups, incubators and small to medium enterprises ● Expansion of Global WIL opportunities ● Increase in multi-disciplinary teams
Industry seeking greater engagement in work-integrated learning for identification of talent and enhancement of graduate employability	<ul style="list-style-type: none"> ● Co designed with industry e.g., Hackathons ● Deeper long-term partnerships with universities ● Event based partnerships ● Active engagement by industry associations ● Company employees work with teams of students to solve problems in multi-disciplinary teams
Focus on increasing skills in specific industry sectors or demand for skills e.g., STEM	<ul style="list-style-type: none"> ● Emergence of brokers for specific industry sectors ● Funding available for programs that target specific disciplines
Greater focus on development of entrepreneurial / intrapreneurial skills and capabilities in students	<ul style="list-style-type: none"> ● WIL in incubators ● Targeting engagement with start-ups by Universities ● Students starting businesses for WIL ● Brokers targeting start-ups ● Engagement with small to medium enterprises ● Programs in universities focused on entrepreneurial skills including multidisciplinary projects
Expansion of global Universities and increasing demand for global experiences for students	<ul style="list-style-type: none"> ● Partnerships and collaboration between universities for WIL projects regionally and globally ● Increased use of technology ● Increased use of global networks of alumni
Increased focus on WIL resulting in increased competition between universities for WIL opportunities	<ul style="list-style-type: none"> ● Expansion of partners for WIL including engagement with community organizations ● Greater flexibility in duration e.g., brief placements or micro placements ● Greater use of on-campus opportunities ● Increased interest in use of technology and virtual opportunities ● Broadening focus of WIL to non-traditional areas for students WIL experiences ● Increased use of alumni ● Rise of brokers, brokering systems and portals for profit and not-for-profit including industry associations and government
Focus on meeting International students' expectations including industry experience due to strategic economic importance	<ul style="list-style-type: none"> ● Specific initiatives for international students by Universities ● Initiatives and funding from state governments and funding from federal Government ● For profit brokers offering fee for service WIL experiences to international students

Incubators / Start-ups

An incubator is a workspace that provides support for startups including mentoring, information, networks, office space and resources for the early-stage development of new business ventures. WIL students can be placed in incubators to support ventures. A start-up is an entrepreneurial venture which is typically a young, small and recently emerged business that aims to create a new product, process or service to meet a need that is not currently being offered elsewhere in the market. The first stages of a start-up are commonly financed and can attract further support once it has proved its potential. Increasingly WIL students are undertaking placements or projects in or for start-up businesses.

Consulting

Consulting involves students (individually or in teams) providing consultancy services and information to others, including other students, industry partners and community organizations. Consulting activities are facilitated through the university.

FEATURES OF EMERGING WIL MODELS

Fifteen common features were identified across the various emerging models. As identified in the methodology section, the process of gathering and mapping examples of emerging models of WIL through a review of literature and consultation with various stakeholders was then analyzed by themes. The features that describe the common characteristics of these models are outlined in Table 2. The features are clustered across three key areas: stakeholder engagement, design elements impacting on the WIL activity and the emergence of student and industry or community as partners in co-designing WIL activities.

TABLE 2: Key features of emerging models of work-integrated learning

Areas	Features
Stakeholder Engagement	Involving multi-educational sectors Community engaged Engaging alumni Increased use of brokers/third parties Broad/deep partnerships with host organizations Spanning multiple universities or institutions
Design Elements	Engaging multiple disciplines Intra/Entrepreneurial elements Scalable and sustainable Flexibility in duration, location and space Coach/mentor elements Geographically dispersed Investment elements
Co Design with Partners	Co-designed with industry or community Co-designed with students

Table 3 aligns each of the five emerging models with the features outlined in Table 2. This shows the features that are characteristic of each model.

The features around heightened stakeholder engagement embrace a broadening of partners to include multiple educational sectors, community organizations and enhanced focused engagement with alumni. An increase in the use of brokers and third party providers, greater intensity in university and industry partnerships, and collaboration spanning multiple universities are trends becoming more evident. Features associated with the design elements of WIL experiences related to engaging multiple disciplines and incorporating intrapreneurial and entrepreneurial elements in the student experience. Scalability and sustainability of practices also emerged as a prominent feature with growing student numbers and constrained resources. Typically, innovative WIL models were flexible in duration, location and space, and with some encompassing additional coaching and mentoring for students. The focus on global WIL means that frequently partners will be working in geographically dispersed locations. Co-designing innovative WIL models with industry or community as well as students, emerged in response to their needs and expectations and is particularly important to ensure engagement from all stakeholders

Table 3 shows that stakeholder engagement is fundamental to all emerging WIL models with models incorporating alumni and community engagement. The features associated with design elements varied across each of the models, but all comprised flexibility as well as coaching or mentoring elements in many instances. Furthermore, all emerging WIL models featured co-designing the WIL activity with partners including industry or community and students. A collaborative design approach is paramount to a shared vision, cooperative arrangements, and optimal outcomes for all stakeholders.

ENABLERS

Workshops and interviews with students, host organizations and university staff identified a range of enablers associated with the successful implementation of these emerging models. Table 4 provides an overview of the enablers.

Table 3 highlights the importance of establishing mutually beneficial and collaborative partnerships for realizing emerging models of WIL. Successful implementation of these WIL models is reliant on input, advice and perspectives from all stakeholders. In addition, student agency whereby students are thoroughly prepared, actively engaged and take responsibility for their learning is integral to attaining optimal outcomes from these experiences. Other key enablers included clearly defined parameters of the task or activity and the support and encouragement of institutional leadership. Leaders need to establish a culture that promotes and resources innovation and ensures flexibility in the policy framework to enable creative approaches to curriculum design.

TABLE 3: Alignment of emerging models of work Integrated learning and the key associated features clustered across three areas.

Areas	Features	Models				
		Micro placements	Online projects or placements	Hackathons competitions and events	Incubators and start-ups	Consulting
Stakeholder Engagement	Involving multi-educational sectors	-	✓	✓	✓	-
	Engaging alumni	✓	✓	✓	✓	✓
	Community engaged	✓	✓	✓	✓	✓
	Increased use of brokers/ third parties	✓	✓	-	✓	-
	Broad/deep partnerships with host organizations	✓	✓	✓	-	✓
	Spanning multiple universities	-	✓	✓	-	-
Design Elements	Engaging multiple disciplines	-	✓	✓	✓	✓
	Intra/Entrepreneurial elements	✓	✓	✓	✓	-
	Scalable and sustainable	✓	✓	✓	-	✓
	Flexibility in duration, location and space	✓	✓	✓	✓	✓
	Coach/mentor elements	✓	✓	✓	✓	✓
	Geographically dispersed	✓	✓	✓	-	✓
	Investment elements	-	-	✓	✓	✓
Co design Partners	Co-designed with industry or community	✓	✓	✓	✓	✓
	Co-designed with students	✓	✓	✓	✓	✓

TABLE 4: Key enablers identified with implementing an emerging WIL model.

Key Enablers
Entrepreneurial approach of industry/community partners: establishing trust and willing partners to engage in designing flexible WIL approaches.
Preparation of stakeholders: managing expectations and ensuring roles, responsibilities and expectations explicit and clear for all stakeholders to maximize participation and outcomes in unfamiliar activities or scenarios e.g., online projects or hackathons taking place in a short time frame.
Proactive engaged students: encouraging student to take initiative, try something new, learn new skills, network and proactively engage with industry in different, unpredictable and time constrained contexts.
Scope clarity: clarity around the scope of the task or activity, the processes involved and maintaining good communication between stakeholders.
Leadership support: support from within the university to be able to achieve the flexibility around curriculum and the allocation of resources required.
Broader range of industry and community partnerships: creative leveraging of established and willing host organizations to partner in innovative and deeper ways including a greater engagement with SMEs and the community sector.

CHALLENGES

Initial analysis of the data identified some specific enablers and associated challenges with the emergence of these WIL models. These enablers are highlighted in Table 4.

These project findings will inform the development of range of guidelines and resources to support all stakeholders and enhance engagement with these emerging models of WIL which were developed in the following phase of the project.

DISCUSSION

This project focused on identifying emerging WIL models, associated features, enablers and challenges to better understand the models and provide evidence to inform both the design and implementation of different industry engaged WIL activities. The project has successfully identified the many creative and innovative WIL partnership models that are currently being implemented across Australia and world-wide. There are models that involve very short placements or projects with partners, sometimes completely online, often with a wider range of organizations. There are also models that include deeper partnerships with host organizations or leverage involvement in innovative ways including the significant increase in the use of hackathons and leveraging engagement with events or competitions to provide WIL experiences. Other models involve students acting as consultants providing discipline related information to host organizations arranged through their universities.

The emerging models identified along with the associated features, significantly expand the capacity of universities to provide students with authentic industry engaged learning experiences. These models also overcome many long-standing barriers and challenges to engaging a broader range of industry and community groups including small to medium enterprises (SMEs). There is some

evidence of increased engagement with SMEs, but there is capacity for more growth. WIL activities linked to start-ups and incubators and focused on entrepreneurship are occurring, but not in great numbers and appear to be more aspirational at this stage.

Many enablers identified for the emerging models, such as communication and preparation of stakeholders (Patrick, et al., 2009; O'Shea, 2014), are similar for more traditional forms of WIL. However, with emerging WIL models, there appears to be a much stronger need to establish clarity with stakeholders around scope, roles, and expectations, including clarification of ownership of intellectual property. Another key enabler for the newer models is the critical involvement and endorsement from university leadership, especially in the establishment phase, to support implementation of newer models. This support can involve dedicating resources, allocating seed funds, or supporting the streamlining of processes to achieve the flexibility required, particularly in curriculum design and administrative processes. The increased use of one-off events and competitions has been achieved by enhanced collaboration with partners utilizing combined expertise and industry knowledge to co-design and enact the WIL models.

Challenges of implementing traditional models of WIL are numerous and well documented (Patrick et al., 2009). Many of the challenges such as resourcing, workload and recognition are also associated with newer models related to logistical operations within the University. However, these emerging WIL models highlight the need for staff capabilities additional to those required by traditional models. Staff require capacity building in using technologies for online WIL models and familiarity with current industry practices to enact emerging models of WIL effectively. In some instances, staff lack underpinning skills and capabilities such as project management or technical skills and are either unfamiliar with or lack the flexibility for the newer ways of working with industry partners. Co-designing WIL activities requires a mindset that goes beyond the focus on mutual benefits in traditional models, to a more involved and complex interaction, where clearly articulating and negotiating the scope and purpose of the activity is critical. Interacting with small, often under-resourced community groups requires skill and sensitivity. Establishing new WIL models involves different rules of engagement with an increasingly broader range of industry partners including growing numbers of community and not for profit organizations. Some emerging WIL models involve deep, long term partnerships with high profile organizations which require focus, skilled communication and negotiation to be successful and sustainable.

For students to proactively and successfully engage with these new models, intense briefing and preparation is required where roles, rights and expectations are clearly articulated. Diverse cohorts of students (e.g., international students) may have different needs for adequate preparation to participate. Industry / community partners also need to fully understand their role in these models, as they may be unfamiliar with the tasks required of them. Therefore, to be successful, these emerging models of WIL need to be supported with resources for preparing all stakeholders to engage in these different approaches.

Ensuring that these WIL models remain sustainable by having the potential to be scaled beyond initial implementation, presents a range of challenges within the increasingly resource constrained environment of universities. Additionally, ensuring that engagement by industry and community partners isn't too onerous, and identifying the benefits of engagement through exercising robust evaluation is critical. The rise in engagement with one-off events, competitions and hackathons, as well as increased use of student teams working on projects for industry and community partners, is a notable

response by the sector to the increased demand for WIL, the limited number of placements available, and the necessity to find avenues to both significantly scale and sustain WIL opportunities.

CONCLUSION

Innovative, sustainable, and scalable models of WIL are essential to enable universities to service a more diverse and larger student cohort. The newer models identified through this project, enable universities to respond to the changing nature of work and workplaces resulting from increased globalization and automation, by equipping students with the skills required. This project has identified five emerging WIL models with a range of associated features that are evident in the many highly creative examples of WIL being implemented across Australia and abroad. This demonstrates that the Australian tertiary education sector is adapting and innovating to respond to both the changing nature of workplaces and the increased demand from government, industry and students.

A key project finding is that universities are partnering with a much broader range of organizations, including smaller companies and community groups, and leveraging that engagement for creative WIL models. This engagement includes greater innovation from industry in WIL and involvement by industry, and increasingly students, in the co-design of WIL activities. The project findings showcase the increased willingness of diverse industry and community organizations to proactively partner with universities, particularly for shorter, less resource intensive WIL activities. These WIL activities overcome many of the long-standing constraints to engagement. This trend, however, is putting pressure on universities to adopt more flexible processes and enable a more agile curriculum, as well as identifying distinct skill sets and preparation required by all stakeholders to effectively develop, proactively engage with, and sustain these emerging collaborative models. Data from this project will inform the development of resources which will go part way to supporting universities, students and industry in meeting the challenges these emerging models pose. It also provides valuable insights into successful models and mechanisms to engage small to medium enterprises in Australia with WIL which presents an avenue to broaden WIL opportunities. The role of leadership in universities to enable the changes required to address these challenges and to build staff capability will be pivotal to success. Additionally, further incentives, support, and information to enable industry and community to better engage with the tertiary sector is also required.

REFERENCES

- Atkinson, G., Misko, J., & Stanwick, J. (2015) *Work integrated learning in STEM disciplines: Employer perspectives*. Retrieved from http://www.chiefscientist.gov.au/wp-content/uploads/NCVER_WIL-employer-perspectives.pdf
- Australian Collaborative Education Network [ACEN]. (2015). *National Strategy on Work Integrated Learning in University Education*. Retrieved from <http://acen.edu.au/wp-content/uploads/2015/11/National-WIL-Strategy-in-university-education-032015.pdf>
- Australian Government. (2016). *National innovation and science agenda report*. Retrieved from <https://www.innovation.gov.au/page/national-innovation-and-science-agenda-report>
- Australian Higher Education Industrial Association [AHEIA] & Price, Waterhouse Coopers [PWC]. (2016). *Australian higher education workforce of the future*. Retrieved from http://www.aheia.edu.au/cms_uploads/docs/aheia-higher-education-workforce-of-the-future-report.pdf
- Australian Industry Group [AiG] Workforce Development. (2016). *Uni students – good news for your business*. Retrieved from http://cdn.aigroup.com.au/Workforce_Development/FactSheets/Employer_guide_UniStudents.pdf
- Australian Industry Group [AiG] Influence and Policy. (2018). *Developing the workforce for a digital future Addressing critical issues and planning for action*. Retrieved from https://cdn.aigroup.com.au/Reports/2018/Developing_the_workforce_for_a_digital_future.pdf
- Beeson, M. (2016). On the difficulty of being a world citizen. *The Conversation*. Retrieved from <http://theconversation.com/on-the-difficulty-of-being-a-world-citizen-67660>

- Bridgstock, R. (2012). Not a dirty word: Arts entrepreneurship and higher education. *Arts & Humanities in Higher Education*, 12(2–3), 122–137. <https://journals.sagepub.com/doi/abs/10.1177/1474022212465725>
- Business-Higher Education Forum [BHEF]. (2013). *The national higher education and workforce initiative: Forging strategic partnerships for undergraduate innovation and workforce development*. Retrieved from http://www.bhef.com/sites/default/files/BHEF_2013_playbook.PDF
- Creswell, J. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston, MA: Pearson Education.
- Edwards, D., Perkins, K., Pearce, J., & Hong, J. (2015). *Work integrated learning in STEM in Australian universities: Final report*. Retrieved from http://www.chiefscientist.gov.au/wp-content/uploads/ACER_WIL-in-STEM-in-Australian-Universities_June-2015.pdf
- Gribble, C. (2014). *Employment, work placements and work integrated learning of international students in Australia*. Retrieved from <https://www.ieaa.org.au/documents/item/257>
- Gribble, C. (2016). *Enhancing the employability of international graduates: A Guide for Australian education providers*. Retrieved from <https://www.ieaa.org.au/documents/item/547>
- Guest, G., MacQueen, K., & Namey, E. (2012). *Applied thematic analysis*. Thousand Oaks, CA: Sage.
- Hagel, J., Brown, J.S., Mathew, R., Wooll, M., & Tsu, W. (2014). *The lifetime learner: A journey through the future of postsecondary education*. Retrieved from <https://www2.deloitte.com/insights/us/en/industry/public-sector/future-of-online-learning.html?ind=74>
- Helyer, R., & Lee, D. (2014). The role of work experience in the future employability of higher education graduates. *Higher Education Quarterly*, 68(3), 348-372. <https://onlinelibrary.wiley.com/doi/abs/10.1111/hequ.12055>
- Kvale, S. (2007). *Doing interviews*. London, UK: Sage.
- Jackson, D., Ferns, S., Rowbottom, D., & McLaren, D. (2017). Improving the work-integrated learning experience through a third-party advisory service. *International Journal of Training Research*, 15(2), 160-178. <http://dx.doi.org/10.1080/14480220.2016.1259005>
- O'Shea, A. (2014). Models of WIL. In S. Ferns (Ed.), *HERDSA guide: Work integrated learning in the curriculum* (pp. 7-14). Milperra, NSW: Higher Education and Development Society of Australasia.
- Patrick, C. J., Peach, D., Pocknee, C., Webb, F., Fletcher, M., & Pretto, G. (2009). *The WIL report- A national scoping study*. Office for Learning and Teaching. Retrieved from <http://www.olt.gov.au/resource-wil-work-integrated-learning-griffith-2009>
- Peach, D., Moore, K., Campbell, M., Winchester-Seeto, T., Ferns, S., Mackaway., & Groundwater, L. (2016). *Building institutional capacity to enhance access participation and progression in work integrated learning (WIL). Final Report*. Office for Learning and Teaching. Retrieved from <http://www.olt.gov.au/project-building-institutional-capacity-enhance-access-participation-and-progression-work-integrated>
- Phillips KPA, (2014). *Engaging employers in work integrated learning: Current state and future priorities*. Retrieved from <https://docs.education.gov.au/system/files/doc/other/phillipskpa-wil-research-report.pdf>
- Rowe, A., & Zegwaard, K. (2017). Developing graduate employability skills and attributes: Curriculum enhancement through work-integrated learning. *Asia-Pacific Journal of Cooperative Education, Special Issue*, 2017, 18(2), 87-99. Retrieved from South Eastern Sydney Local Health District (2013) *The Sutherland Chronic Care Student Led Clinic: Increasing clinical placements by scoping student led services for people with chronic disease* (Final Report). Author.
- Universities Australia [UA]. (2018). *Clever collaborations: The strong business case for partnering with universities*. Retrieved from [www.clevercollaborationswebversion.universities Australia 2018.pdf](http://www.clevercollaborationswebversion.universitiesaustralia.com.au/2018.pdf)
- Withers, G., Gupta, N., Curtis, L., & Larkins, N. (2016). *Australia's comparative advantage*. Retrieved from <https://acola.org.au/wp/PDF/SAF01/SAF01%20full%20lo%20res.pdf>

This IJWIL Special Issue was sponsored by



**AUSTRALIAN COLLABORATIVE
EDUCATION NETWORK LIMITED**

**Articles in this special issue derive from
presentations¹ delivered at the
Australian Collaborative Education Network
2018 Biannual Conference, Brisbane,
Australia**

¹ Articles included in this IJWIL Special Issue derive from selected proceedings and presentations from the 2018 ACEN conference. All articles deriving from proceedings papers were significantly modified, expanded, and advanced before being double-blind reviewed by the IJWIL editorial board. The articles were subsequently amended in response to the review before being accepted by the editors to be published in IJWIL.



About the Journal

The International Journal of Work-Integrated Learning (IJWIL) publishes double-blind peer-reviewed original research and topical issues dealing with Work-Integrated Learning (WIL). IJWIL first published in 2000 under the name of Asia-Pacific Journal of Cooperative Education (APJCE). Since then the readership and authorship has become more international and terminology usage in the literature has favored the broader term of WIL, in 2018 the journal name was changed to the International Journal of Work-Integrated Learning.

In this Journal, WIL is defined as "*an educational approach that uses relevant work-based experiences to allow students to integrate theory with the meaningful practice of work as an intentional component of the curriculum*". Defining elements of this educational approach requires that students engage in authentic and meaningful work-related task, and must involve three stakeholders; the student, the university, and the workplace. Examples of practice include off-campus, workplace immersion activities such as work placements, internships, practicum, service learning, and cooperative education (Co-op), and on-campus activities such as work-related projects/competitions, entrepreneurship, student-led enterprise, etc. WIL is related to, but not the same as, the fields of experiential learning, work-based learning, and vocational education and training.

The Journal's main aim is to enable specialists working in WIL to disseminate research findings and share knowledge to the benefit of institutions, students, co-op/WIL practitioners, and researchers. The Journal desires to encourage quality research and explorative critical discussion that leads to the advancement of effective practices, development of further understanding of WIL, and promote further research.

The Journal is financially supported by the New Zealand Association of Cooperative Education (NZACE), www.nzace.ac.nz.

Types of Manuscripts Sought by the Journal

Types of manuscripts sought by IJWIL is primarily of two forms; 1) *research publications* describing research into aspects of work-integrated learning and, 2) *topical discussion* articles that review relevant literature and provide critical explorative discussion around a topical issue. The journal will, on occasions, consider best practice submissions.

Research publications should contain; an introduction that describes relevant literature and sets the context of the inquiry. A detailed description and justification for the methodology employed. A description of the research findings - tabulated as appropriate, a discussion of the importance of the findings including their significance to current established literature, implications for practitioners and researchers, whilst remaining mindful of the limitations of the data. And a conclusion preferably including suggestions for further research.

Topical discussion articles should contain a clear statement of the topic or issue under discussion, reference to relevant literature, critical and scholarly discussion on the importance of the issues, critical insights to how to advance the issue further, and implications for other researchers and practitioners.

Best practice and program description papers. On occasions, the Journal also seeks manuscripts describing a practice of WIL as an example of best practice, however, only if it presents a particularly unique or innovative practice or was situated in an unusual context. There must be a clear contribution of new knowledge to the established literature. Manuscripts describing what is essentially 'typical', 'common' or 'known' practices will be encouraged to rewrite the focus of the manuscript to a significant educational issue or will be encouraged to publish their work via another avenue that seeks such content.

By negotiation with the Editor-in-Chief, the Journal also accepts a small number of *Book Reviews* of relevant and recently published books.



EDITORIAL BOARD

Editor-in-Chief

Dr. Karsten Zegwaard

University of Waikato, New Zealand

Associate Editors

Dr. Judene Pretti

University of Waterloo, Canada

Dr. Anna Rowe

University of New South Wales, Australia

Senior Editorial Board Members

Prof. Richard K. Coll

University of the South Pacific, Fiji

Prof. Janice Orrell

Flinders University, Australia

Emeritus Prof. Neil I. Ward

University of Surrey, United Kingdom

Dr. Phil Gardner

Michigan State University, United States

Assoc. Prof. Denise Jackson

Edith Cowan University, Australia

Copy Editor

Yvonne Milbank

International Journal of Work-Integrated Learning

Editorial Board Members

Assoc. Prof. Erik Alanson

University of Cincinnati, United States

Mr. Matthew Campbell

Queensland University of Technology, Australia

Dr. Craig Cameron

Griffith University, Australia

Prof. Cheryl Cates

University of Cincinnati, USA

Dr. Sarojni Choy

Griffith University, Australia

Dr. Bonnie Dean

University of Wollongong, Australia

Prof. Leigh Deves

Charles Darwin University, Australia

Prof. Maureen Drysdale

University of Waterloo, Canada

Assoc. Prof. Chris Eames

University of Waikato, New Zealand

Dr. Sonia Ferns

Curtin University, Australia

Dr. Jenny Fleming

Auckland University of Technology, New Zealand

Dr. Thomas Groenewald

University of South Africa, South Africa

Assoc. Prof. Kathryn Hay

Massey University, New Zealand

Prof. Joy Higgs

Charles Sturt University, Australia

Ms. Katharine Hoskyn

Auckland University of Technology, New Zealand

Dr. Sharleen Howison

Otago Polytechnic, New Zealand

Dr. Nancy Johnston

Simon Fraser University, Canada

Dr. Mark Lay

University of Waikato, New Zealand

Dr. Patricia Lucas

Auckland University of Technology, New Zealand

Prof. Andy Martin

Massey University, New Zealand

Dr. Norah McRae

University of Victoria, Canada

Prof. Beverly Oliver

Deakin University, Australia

Dr. Laura Rook

University of Wollongong, Australia

Assoc. Prof. Philip Rose

Hannam University, South Korea

Dr. David Skelton

Eastern Institute of Technology, New Zealand

Prof. Heather Smigiel

Flinders University, Australia

Assoc. Prof. Calvin Smith

University of Queensland, Australia

Dr. Raymond Smith

Griffith University, Australia

Assoc. Prof. Judith Smith

Queensland University of Technology, Australia

Prof. Yasushi Tanaka

Kyoto Sangyo University, Japan

Prof. Neil Taylor

University of New England, Australia

Assoc. Prof. Franziska Trede

Charles Sturt University, Australia

Ms. Genevieve Watson

Elysium Associates Pty, Australia

Dr. Nick Wempe

Primary Industry Training Organization, New Zealand

Dr. Marius L. Wessels

Tshwane University of Technology, South Africa

Dr. Theresa Winchester-Seeto

University of New South Wales, Australia