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Pandemic exacerbating Work Integrated Learning experience for International Students in Australia

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ABSTRACT

CONTEXT

The key purpose of Work Integrated Learning (WIL) is to offer domestic and international students the opportunity to explore and participate in real-life projects offered by industry or community integrating theory with practice. There are a variety of structured activities, for example, internships, field trips, industry guest speakers, and the industry or community projects. These activities are aligned with students' needs in gaining professional experience and enhancing their employability skills, as well as with engineering curriculum requirements. The literature presents numerous papers discussing students' WIL practices and students' expectations; however, it becomes more complex when international students need to be prepared for and made capable of understanding and navigating the cultural nuances and workplace differences. Previous studies (Jackson, 2017; Jackson, Rowbottom, Ferns, & McLaren, 2017; Kaider, Friederika; Suri, Harsh; Read, Wayne; Russell, Leoni; & Marlow, 2020) discussed the relevance of WIL program and the difficulties faced by the international students in Australia.

PURPOSE OR GOAL

In addition to providing equal opportunity to domestic and international students to gain hands-on skills and job readiness via WIL activities, the industrial experience component is compulsory for accreditation purposes in most engineering courses. This study aims to evaluate international students' experience and challenges faced by them in seeking local industry placements. Naturally, some strategies published previously do not address the COVID-19 situation and its effects on WIL. The pandemic has introduced significant challenges in effectively implementing WIL and industry placements. This paper observes and evaluates the current challenges faced by international students in gaining meaningful experiences. It also seeks to better understand students' perspectives and assess the effectiveness of the mitigation strategies put in place during the pandemic

APPROACH OR METHODOLOGY/METHODS

Exploratory research is the most suitable method to support the main objectives of this study. Desktop research covers recent journal and conference publications in the field, government statistics, and reports from Engineering Educational institutes. The questionnaire-based on the Likert scale will provide insights of student motivation level with industry placement, job readiness, and knowledge gain of local professional practice. The semi-structured interviews include questions focused on new technical and personal skills gained to enhance students' competitiveness to find a job in the engineering industry under the global pandemic scenario

ACTUAL OR ANTICIPATED OUTCOMES

It is ongoing research that will be completed in the coming months. Currently, international students require more support to overcome the challenging time due to COVID-19. The anticipated outcomes include the new challenges associated with work integrated learning programs posed by COVID-19 and the effectiveness of various measures in conquering the difficulty.

KEYWORDS

Industry placement, international students, work-integrated-learning.

Introduction

Australia is one of the most popular destinations for international students. Recent data (2019–20) from the Australian Bureau of Statistics (ABS) show that international education contributed $37.4 billion to the Australian economy. Furthermore, Higher Education accounted for 68.1 % of international education export income in 2019–20, and 47.4 % of all overseas student enrolments in 2020 (APH,2021).

To ensure the stability of the Australian Education sector in attracting and retaining overseas students during the pandemic period, it is imperative to observe that international students desire a combination of qualifications from reputable institutions and local work experience to enhance their chances to succeed in their professional career.

Work Integrated Learning (WIL) is a superset that covers a variety of experiences aimed to expose students to work-related tasks and integrates academic learning with its practical implementation in the workplace. Engineers Australia is the national competent authority responsible for the accreditation of engineering education programs in Australia. In their guidelines for accreditation, exposure to engineering practice through various activities including work placement is strongly advocated by Engineers Australia (Engineers Australia, 2008). The demand for embedding WIL in Australian universities and institutes of higher education is driven by three distinct stakeholders: government, industry, and students. WIL is being considered as a means to address the national skill shortage and can also provide a head start to the fresh graduates in the relevant workplace (Edwards et al., 2015). It is reported that the graduating engineers have significant gaps between their capabilities and those mandated by their relevant engineering field of practice (Male, 2010). This is exacerbated by engineering science rather than practices and applications being the main focus of engineering education (Sheppard et al., 2009). Students tend to develop misperceptions about engineering practice and inconsistent professional identity as a result of a lack of in-built focus on hands-on practices (Fletcher, 2001). Furthermore, the expectation of learning theory without substantial exposure to the practices promotes confusion among the students as they cannot understand the context or relevance. The skill gap and skill shortage of Australian engineering graduates were identified and addressed in a 2008 report. The importance of exposure to engineering practice in undergraduate curricula was emphasized as an important strategy to address skill gap and skill shortage. Engagement with industry was one of the 6 recommendations made in the report to maintain Australia's engineering enterprise into the future (King, 2008). After identifying the on-going need to tackle skill-gap and skill-shortage in the engineering sector, another rigorous exercise of reviewing relevant literature, consulting Engineers Australia, consolidating survey results from 17 universities and interviews and focus groups with academics, industry members, and students was carried out and very detailed and informative guidelines for effective industry engagement in Australian engineering degrees were proposed as a part of a national project (Male and King, 2013).

Many Australian universities and institutes of higher education have opted to make the engineering students responsible for acquiring 12 weeks of industry placement in order to address mandated requirements of WIL by EA (Male and King, 2019).

Despite being instrumental in equipping new engineering graduates with the much-needed employability skills and bridging the skill gap, WIL comes with its own set of challenges. Several factors including privatisation of previously state-owned engineering infrastructure, engineering-based manufacturing moving offshore, and rise in contract-based engineering services require arduous efforts in availing traditional work experience placement (Male and King, 2019). This not only delays graduation but also fails to satisfy an ever-increasing demand of employable engineering graduates and ends up accentuating the skill shortage.

The following sections summarize such challenges from the universities and institutes of higher education point of view and also from the student point of view.

Challenges experienced by the universities:

The key challenges in mainstreaming WIL at Australian universities and institutes of higher education include securing enough placements, fitting in with industry needs, skill and expertise of academic staff, embedding WIL in pedagogy, and resource intensiveness (Mclennan and Keating, 2008). Although WIL is considered as an important aspect for attracting international students, providing WIL opportunities to international students become more challenging for the universities and institutions of higher education as some employers see this as a limited return of the investment when international students are unlikely to stay in Australia after graduation (Gribble et al., 2015). The need for strong pedagogic practices, incorporating reflective practice as a part of WIL, the importance of measurable learning outcomes, and requirements for effective mentoring especially focusing on time management and autonomy were also identified as additional challenges (Jackson, 2014). The need for having a mix of evidence and involvement of workplace supervisor and academic supervisor in order to assess professional competence was also emphasized (McNamara, 2013).

Challenges experienced by the students:

Quite a few challenges experienced by international students discussed in various literature were summarized in a more recent article (Jackson, 2017). These included challenges like students not ready to start low, employers preferring domestic graduates who can easily integrate in the workplace, international students being forced to take up WIL in their own country and missing out on capturing valuable insight into Australian work practices. Lack of support from family while juggling work, study, and social commitment also hinders the performance during WIL. This is further aggravated by cultural differences and high expectations about communication skills. In a latest survey of 151 students, confidence along with workplace environment and relationships were identified to promote the sense of belonging among the students undertaking WIL (Rowe et al., 2021).

Methodology

In order to obtain and analyse information to accurately identify the impact of COVID-19 in the WIL activities and the main barriers encountered by international students, this study adopted the mixed method. This approach includes a combination of desktop research, interviews (online) and survey questionnaire (online).

Desktop research covers recent journal and conference publications in the field, government statistics, and reports from Engineering Educational institutes. The student interview is a vital technique and plays a critical role in the scholarship activities including work integrated learning experiences. The interviews were conducted with students to know how valuable these WIL activities were for them. The interview aimed to give students 8 (eight) open questions to evaluate their understand and motivation to gain industrial experience in Australia and how COVID-19 is impacting their journey to be placed in local companies.

Additionally, a semi-structured survey was distributed to the same group of students enrolled in their final year - industrial experience unit. The survey questionnaire used a variety of questions to gauge the perception, motivation, and preferences of the students who took part in this survey to participate in different activities of WIL program. The questions were designed to capture important aspects such as student diversity including their geographical locations and prior relevant industrial experiences in their fields of study.

The survey presented open questions and used the Likert scale from very unlikely to very likely. There were 7(seven) open questions in part I of the survey while part II contained 3 (three) close questions, 7(seven) questions with a Likert scale, and one reflection-based question. The open questions were aimed to obtain students' perceptions of the relevance of industrial experience and the COVID-19 impacting their engagement WIL activities during their Engineering courses. For example, " How has COVID-19 impacted your internship? If it is the case, please share your experience with blended work-integrated learning". The open

questions were grouped to identify the similarities in the students' mindsets. The Likert scale questions were focused on the analyses of “Motivation to gain industrial experience via Work Integrated Learning (WIL) activities” and pandemic scenario influencing students’ determination to gain hands-on experience in Australia.

Findings and Discussion

The interview and questionnaire were disseminated among 207 students; however, 30 students submitted their responses, showing a response rate of 15%. According to (Saleh and Bista, 2017) “a low response rate of online surveys has been a concern for many researchers in the last few years; the response rate for web surveys is estimated to be 11% lower than other survey modes (Yan & Fan, 2010)”. This study results demonstrate that the initial strategy disseminating the interview questions and the survey online need to be reviewed. Also, the low response rate probably reflects the lack of students’ interest due the fact that the industrial experience units are zero credit unit, even though it is compulsory for students’ graduation following the Engineers Australia requirements.

Figure and Figure 2 were plotted based on student responses to close questions (Q. 10 and Q.11) which were designed to gain to better understand of the survey participants. At EIT considering both online and on-campus modes, the predominance of international students is significant, the majority coming from African and Asian countries. This information enhances the need to provide these students with institutional support offering WIL programs ensuring their participation in hands-on activities and connecting them to the Australian industry.

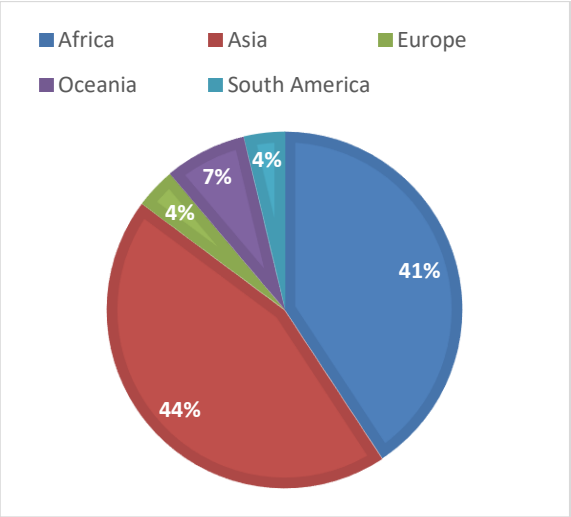

Figure 1 – Students’ country

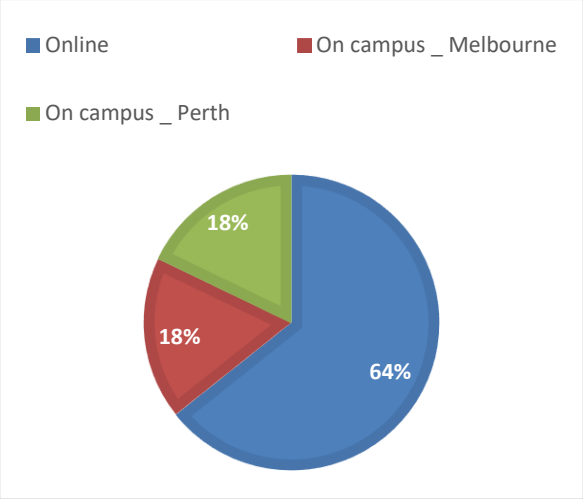

Figure 2 – Students per study mode

With the outbreak of the COVID-19 pandemic, students suddenly needed to consider the alternatives to gain industrial experience to meet the requirements for the completion of Engineering courses. International students require more attention and support from their education providers to secure an internship position due to the lack of networking skills, familiarity with industry demand, and cultural barriers among other challenges of studying overseas. The open question responses were gathered in two main groups:

Group 1 – Students' general perception of WIL program in Australia influencing their professional success as Engineering graduates.

Students' responses were consistent in pointing the importance of critical aspects to connect theory and real-world application:

"*Acquire real-world experience and build a professional network by putting what you've learned at university into practice in a professional setting (S22)"*

"Work integrated learning is essential because it will help to gain the real understanding for how to implement academic knowledge into real work scenario (S20)"

"It helps me to properly integrate my classroom knowledge with what is obtainable in the industry. It also gives me the opportunity to get the Australian industrial experience, thereby getting to know more about the Australian standards and code of practice (S14)

Additionally, some students reflected on the main differences and cultural barriers comparing the Australian versus overseas workplaces. Students' responses mainly addressed the issues like cultural diversity, code of ethics and conduct, equal opportunities etc.:

"*Workplace in Australia is very good especially for women in engineering when compared to other countries I worked. Work culture is good and pay scale is high in Australia" (S5).*

"Getting adapted to the Australian work culture is a very challenging aspect. (S26)

Group 2 – Critical reflection on WIL and COVID impact

Students described several challenges faced since the pandemic outbreak. Usually, online students are more familiar with blended systems and with the need to work remotely. This observation is confirmed via some responses, for example:

"No… i have been working online" (S14); or "I am on the on-line programme. There have been no disturbances in my academic area (S17).

On the other hand, on-campus students reported different aspects of COVID-19 impact, such as a number of internships opportunities, delay in the start of some activities among others:

"As we all know, Covid-19 has impacted everyone in different ways. As for students they have adopted new experience with both on campus and online learning system. However, in case of internship the opportunities were decreased" (S19)

"Internships were impacted even more than full-time jobs by the COVID-19 pandemic. Many more have had their internships cancelled entirely. It enhanced my soft skills and advance my theoretical knowledge. Working to learn is learning to work. Work integrated learning allows me to gain a good grasp of basic work capabilities and a plethora of both soft and technical skills that I wouldn't necessarily develop without working in a professional setting(S8)"

Students were asked to share their perception and motivation to overcame the current challenges to gain practical experience when *in situ* placements decreased and virtual/remote activities appeared as promising alternatives. Figure 3 shows that international students are open to obtain the required WIL hours via online, hybrid, non-paid placement even through no-profit organisations. Also, the majority understands that mentoring plays an important role in preparing them to better fit the local enterprises. Additionally, it can be seen through the student responses that trying to find such WIL placements by themselves is very difficult. This agrees with well-documented previous studies (Jackson, 2017). It reflects the increase of students demanding institutional support to enable partnerships with industry and other organisations to connect students with local professionals enhancing their change to gain industrial experience and be better prepared to find a job after graduation.

1.Regarding the COVID-19 pandemic more online WIL placements have been offered from a variety of Institutions. Please state your likelihood of taking an **online WIL**

2, Considering the current pandemic scenario, please state your likelihood of taking a **hybrid (onsite/online) WIL placement:**

3. International students often do not pursue WIL opportunities because of the difficulty to manage the time including part-work, study, and family/friends' commitments. Please state your likelihood of **prioritising WIL placement**:

4. Please state your likelihood of taking a **non-paid WIL** placement;

5. Please state your likelihood of gaining work experience from small and medium enterprises and not-for-profit organisations;

6.Please state your likelihood of participation in **mentoring sessions** before joining an Australian organisation;

7.Please state your likelihood of finding your own work placement in Australia without EIT's support:

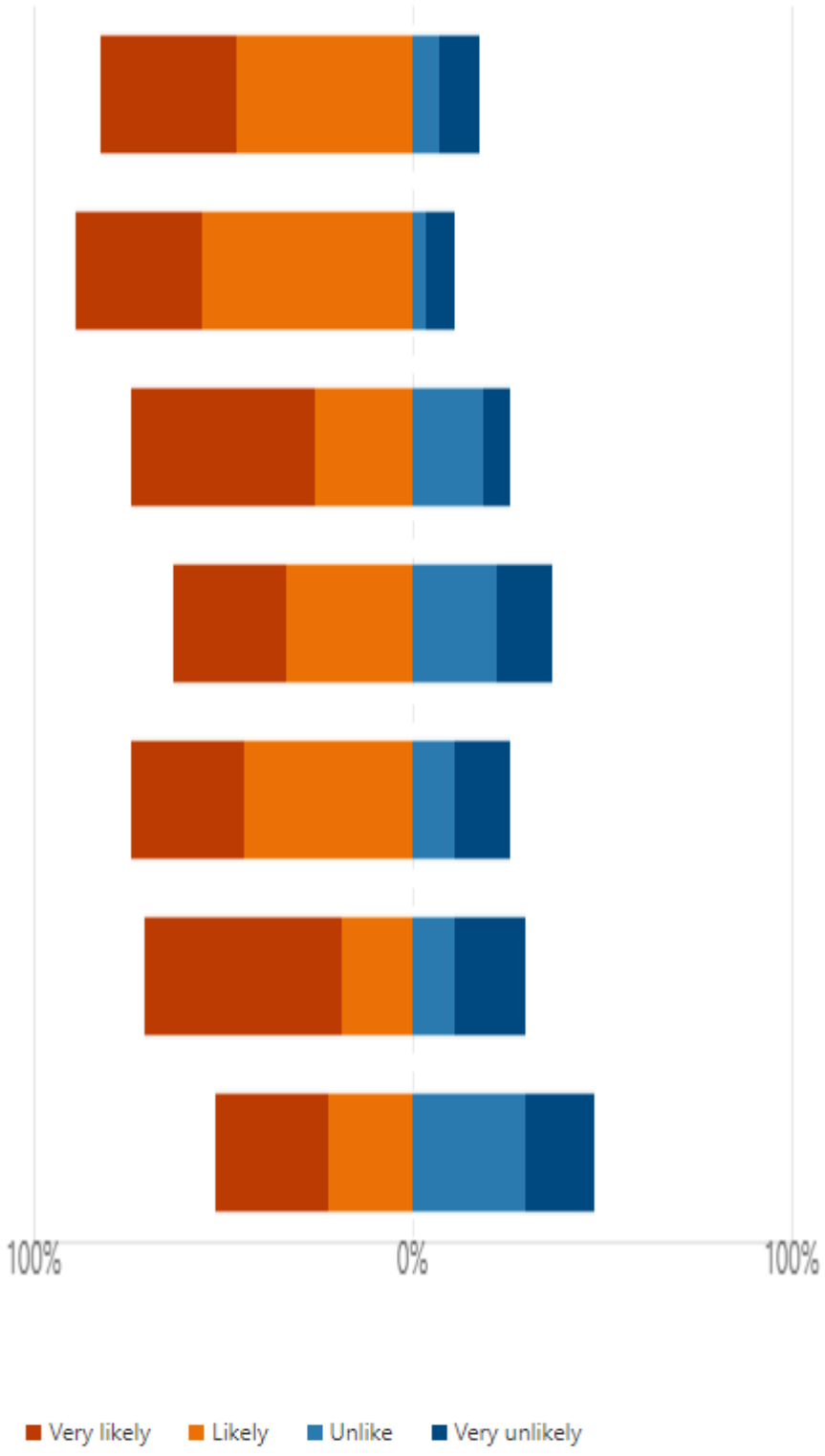

Figure 3 – Students motivation to embrace different WIL activities to gain local (Australia) experience during the pandemic scenario

Conclusion

Since COVID-19 outbreak, universities around the globe have been searching for feasible alternatives to continue offering the high-quality qualification. In order to achieve this main goal,

there is no doubt that WIL programs are essential in enabling students to gain the skills and knowledge needed to succeed and to gain employment. Over the last years, organisations and universities focused on different forms of WIL including face-to-face, remote or simulation practices. These alternatives are aligned with e-Learning systems offering courses in several disciplines. However, even with students' familiarity with synchronous and asynchronous activities, the challenge to enhance university-industry collaboration to give international students the possibility to engage with local (Australian) enterprises had significant decrease.

Undoubtedly, the pandemic scenario disrupted WIL programs. This study aimed to better understand the students' motivation and attitude to overcame lockdown restrictions and personal concerns. International students are willing to take opportunities related to the virtual or hybrid internship, non-paid placement, and prioritise WIL experience managing time dedicated to family and friends. Although the ownership of completing WIL activities falls on the students, it is evident the special attention and additional support is critical. For example, narrowing the partnership with industry targeting not only tier 1 companies but SME business, promoting more network events, virtual/face to face competitions, and site visits. These opportunities need to be more often offered by their education provider in order to support international students coming to Australia to get the benefits interacting with local employees and become exposed to the Australian organizational policy and culture.

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