Exposure to Professional Practice (EPP): A Case Study of Australian Universities

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CONTEXT
Engineers Australia (EA) set a mandatory requirement of Exposure to Professional Practice (EPP) as one of the key components for universities satisfying Stage 1 Competencies when seeking Accreditation. This requirement must be a set of meaningful industry-based experiences that expose students to the professional skills and working styles of Professional Engineers. EA recommend the EPP requirement is nominally the equivalent of 12 weeks for the Professional Engineer level, where this time can be a combination of tasks such as internships, site visits or guest lectures. This study reviews the 34 Australian universities that EA accredit at the Professional Engineer level and compares how this EPP requirement is met. A comparison is also made on the methods used by universities to tie this requirement to their curriculum credit and/or study plans. A comparison of these methods is made to The Good Universities Guide data on graduate outcomes including student satisfaction and employment rates.

PURPOSE OR GOAL
This work seeks to capture and compare the numerous methods Australian Universities use to provide engineering students with required EPP. How different are these approaches to providing students with industry experience? Are there dedicated subjects in the curriculum and are they for credit? Is there a difference in EPP requirements for undergraduate versus postgraduate awards with the same level of accreditation? Are there any measurable differences regarding student satisfaction with their degree or employment levels?

APPROACH OR METHODOLOGY/METHODS
This study has collected online data from the Good Universities Guide website for both undergraduate and postgraduate engineering students. Information is also collected from each host university website describing the study requirements to meet EPP and the associated credit and/or subjects.

ACTUAL OR ANTICIPATED OUTCOMES
The information collected is presented as a case study of the different approaches to meeting EPP requirements for the Australian Engineering Education Community. All information and outcomes presented are anonymous. The intention is to share and discuss the different approaches to providing EPP and identify the impact this has on student satisfaction and employment rates.

CONCLUSIONS/RECOMMENDATIONS/SUMMARY
This research will summarise the different approaches to meeting EPP requirements by grouping similar approaches and making comparisons between these groups. Differences in levels of student satisfaction with their degree or employment levels will also be concluded. The approach of these groups will also be compared to relevant literature on Work Integrated Learning.

KEYWORDS
Exposure to Professional Practice (EPP), Work Integrated Learning (WIL).

Background

Engineers Australia (EA) is the peak professional body for tertiary level engineering education in Australia and manages accreditation for the 35 universities offering engineering degrees in Australia. EA's accreditation process involves assessment from an independent panel of discipline experts that assess each engineering program on approximately a 3-5 year cycle. Using a set framework, a panel of discipline experts inspect each university's ability to meet the requirements in areas referred to as Academic Programs (APs). Academic Program 4 (AP4) specifically relates to engagement with professional practice (EPP), where the panel evaluates how a given program provides students with sound professional judgement on their journey from student engineer to competent practitioner.

AP4 does not set a rigid checklist of tasks, rather it intentionally allows universities the flexibility to design their own curriculum to meet EPP requirements with a few key guidelines for context. For example, EA sets the following context for EPP environment:

> *"Professional practice experiences need to be delivered in environments (which may be simulated, virtual, industry, or a mix of these) that provide experiential learning. These environments are materially different from the usual education environment." (Accreditation Criteria User Guide – Higher Education, 2024, pg. 17)*.

EA also provides context for what experiences constitute EPP, where the Accreditation Framework states the following:

> *"EPP must culminate in a set of meaningful experiences that result in the habituation of professional working styles through placement in activities engaged in actual or simulated commerce, internships, volunteering or similar activities. (Accreditation Criteria User Guide – Higher Education, 2024, pg. 17)*.

Furthermore, context is also provided for how long these professional practice experiences should last with the framework stating:

> *"The recommended EPP is nominally the equivalent of 60 days (12 weeks) at the Professional Engineer level." (Accreditation Criteria User Guide – Higher Education, 2024, pg. 17-18)*.

It can be seen in the above quotes that the framework is quite flexible, which leads to a wide range of approaches used by Australian universities to meet the requirements of AP4. This research summarises the different approaches used in the curriculum and assesses key EPP parameters and their impact on student satisfaction and graduate employment.

Introduction

The Good Universities Guide states there are 35 Australian universities offering engineering degrees as either undergraduate (UG) or postgraduate (PG) awards (Good Universities Guide, 2025). A majority of these universities offer both undergraduate (typically four years) and postgraduate coursework (typically two years) awards, with a few offering only undergraduate awards and one only offering a 5-year postgraduate award. This configuration is summarised in Table 1, where four separate groups are defined dependent on the presence of EA accreditation for the level of Professional Engineer being listed as either Full or Provisional as of June 2025 (Engineers Australia, 2025).

Table 1: Summary of tertiary education providers with EA accredited engineering degrees in Australia

	Accredited UG degree	Accredited PG degree	Number of Universities
Group 1	Yes	Yes	29
Group 2	Yes	No	4
Group 3	No	Yes	1
Group 4	No	No	1
		Total Sum	35

This study examines data collected from the 34 universities listed in Table 1 within Groups 1, 2 and 3. It's worth clarifying that a single university listed in Group 3 requires students to complete a total of five years, beginning from high school graduation, which is programmatically different from the majority of post graduate awards, which begin after completion of an undergraduate engineering or technology award. As such, this postgraduate award was viewed to be substantially different to the typical 2-year postgraduate awards, and data from this postgraduate award was counted as an undergraduate award. This results in a total of 35 universities being considered for this study where the data presented and assessed here is based on 34 UG and 29 PG awards.

Professional practise or WIL can be difficult to define, but can be broadly classified into three types: work-based WIL (e.g., internship, placement or practicum), non-workplace WIL (e.g., classroom or virtual projects), and global WIL (e.g., industry study tour/ international internship) (Jackson & Dean, 2023). External industry work-based experiences are considered the preferred format of WIL as it is strongly linked with two positive outcomes – employment and perception of employability. Research has shown that work-based WIL has enhanced graduate job attainment worldwide and can lead to quality, graduate-level employment (Hurley *et al.,* 2021). Different from employment, perceived employability indicates one's sense of their ability to attain work appropriate to one's qualifications, knowledge and skills, and is shaped by personal and contextual factors. Work-based WIL has proven to enhance perceived employability with students who participate in work-based WIL reporting high levels of satisfaction and confidence in their readiness for the workplace (Kapareliotis *et al.*, 2019). Work-based WIL enhances feelings of preparedness for employment among new graduates (Martin & Rees 2019) positively influencing graduates' perceptions of their own work-readiness and employability, leading to improved job search behaviours, transition to work and career success. Although some studies have examined work-based WIL within a specific region of Australia (Rampersad, 2014; Hobbs and Vincent, 2023) no study to date has widely examined how all Australian universities offering an engineering degree meet their EPP requirements and the correlation with graduate attributes such as student satisfaction and employment rates.

EPP related data from these Australian universities was collected using two main methods. Firstly, information on how EPP requirements were met was collected from public facing websites, which included websites used for marketing purposes as well as detailed degree structure websites such as the commonly used Handbook. It is worth noting the limitations of using public facing websites, which may or may not accurately represent the current curriculum being delivered. However, these public facing websites were deemed an accurate source of information as they are closely reviewed and cross-checked against internal data during each EA Accreditation review. When viewing these websites information was collected regarding core curriculum design, including prerequisite subjects and degree credit, and other requirements like the threshold level of time spent immersed in industry to meet the AP4 EEP requirement. In many instances website data was vague, such as simply stating the engineering degree meets EPP requirements, or contains the equivalent of 12-weeks of industry exposure, without a detailed explanation of how these requirements are met. In instances where website data was vague, contradicting, or unclear, it was recorded as being unclear. It is also worth clarifying that these recorded threshold requirements are not indicative of what the average or majority of students experience, rather it is the lowest threshold for what is deemed acceptable by the institution. The second method of data collection was accessing the Good Universities Guide website, which summarises nationally available QILT data for undergraduate and postgraduate awards (Good Universities Guide, 2025). This national QILT data was used to summarise student satisfaction and graduate employment rates for each award.

Curriculum Design

The majority of universities teaching engineering degrees in Australia offer 4 technical subjects simultaneously, in either a semester or trimester format. It's common for these technical subjects to be equally weighted with a set amount of units for credit. EPP is typically structured differently than technical subjects, so curriculum may or may not have credit bearing EPP subjects. Figure 1 provides a summary of this configuration for both undergraduate and postgraduate awards, separately. As can be seen in this figure, the majority of both undergraduate and postgraduate engineering degrees do not associate credit with a subject dedicated to an external industry work-based experience.

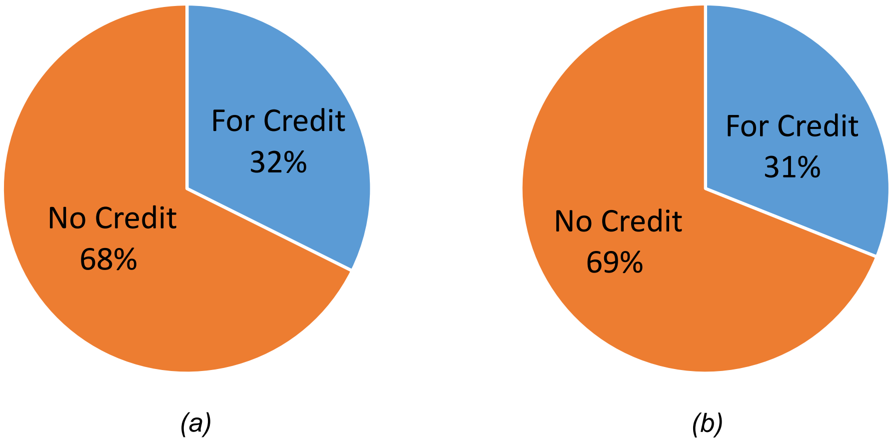

Figure 1: Comparison of WIL subject credit for: a) Undergraduate and b) Postgraduate degrees.

The flexibility of AP4 allows curriculum to be designed so that EPP requirements can be met through a range of subjects. These requirements are typically met either outside the technical curriculum or in one of two subjects. The first is a subject that includes in-class or non-workplace WIL such as a professionalism, major project or capstone subject, where industry experiences are simulated. The second is a subject dedicated to external industry work-based WIL experiences. A comparison of curriculum design is presented in Figure 2. This figure reveals that for both undergraduate and postgraduate engineering degrees, approximately one third of Australian universities have engineering curriculum with an in-class or non-workplace WIL subject, another third with a WIL subject dedicated to external industry experiences, and the final third having curriculum with no core WIL subject.

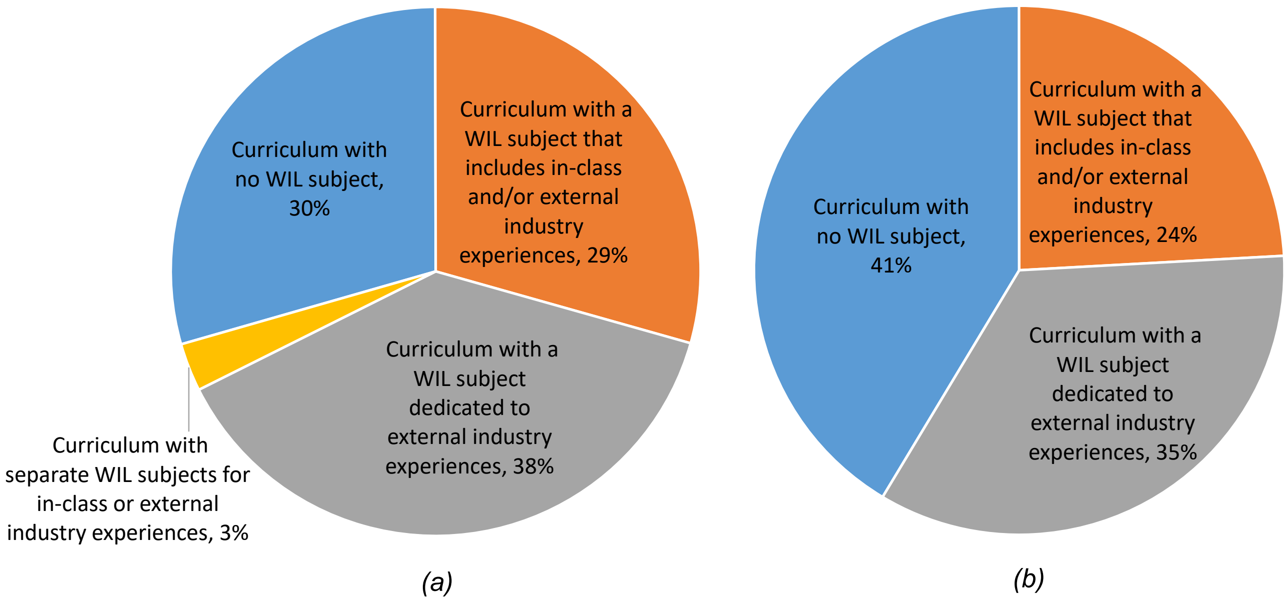

Figure 2: WIL related subjects in: a) Undergraduate Engineering and b) Postgraduate Engineering.

It has been shown that achieving the outcome of high employability requires well-structured and informed educational processes, supported by appropriate curriculum and pedagogic principles to provide students with effective experiences and their integration into the overall curriculum (Billett, 2011). This support is typically in the form of curriculum that includes a core prerequisite preparation subject that prepares students for external industry experiences. Figure 3 provides a summary that compares curriculum designs that do or do not include a dedicated preparation subject for undergraduate and postgraduate students. As can be seen in this figure, the majority of Australian universities do not have a core preparation subject in their undergraduate or postgraduate engineering degrees.

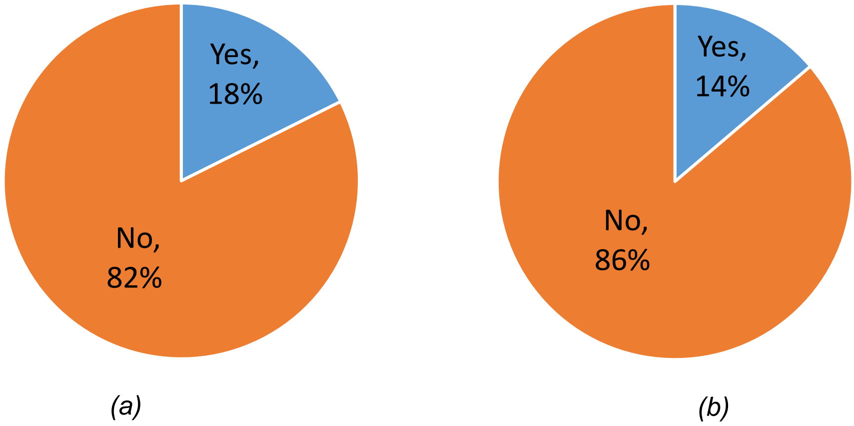

Figure 3: Curriculum with a dedicated preparation subject for: a) Undergraduate Engineering and b) Postgraduate Engineering.

A common method for meeting EPP requirements is for students to perform an external industry work-based experience over the holiday break(s). Many industry-based companies host these students as a method of talent scouting for graduate employment. However, a comparison of the 34 universities found that only a few universities mandate these external industry work-based experiences as a core requirement of the degree. Additionally, it was found that the amount of threshold time located in industry varied noticeably. Figure 4 provides a summary of this threshold time for core external industry work-based experiences. It should be noted that while the majority of universities allow external industry work-based experiences, Figure 4 highlights that only the minority mandate it as a core requirement.

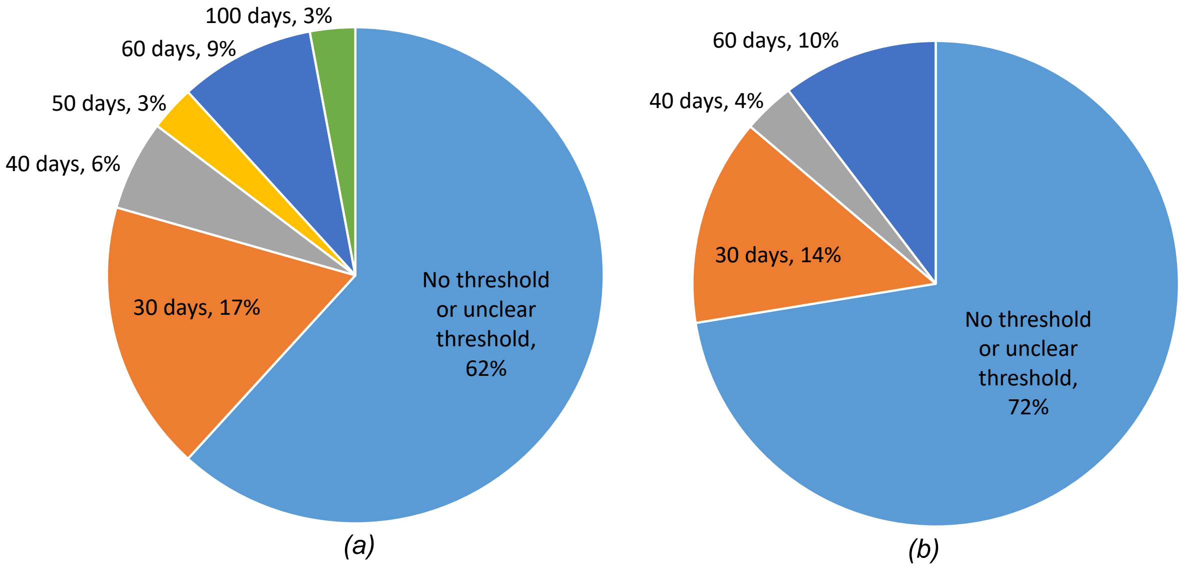

Figure 4: Minimum threshold of immersive industry experience for: a) Undergraduate Engineering and b) Postgraduate Engineering.

Undergraduate vs Postgraduate WIL Curriculum Design

As explained previously, a typical undergraduate degree is four years with the prerequisite of completing a high school certificate, whereas a typical postgraduate award is two years with the prerequisite requirement of completing the equivalent undergraduate four-year award. Although these two degrees have two noticeably different educational pathways and Australian Qualifications Framework (AQF) levels, the level of accreditation is the same. All universities considered here have undergraduate and postgraduate awards with Professional Engineer level accreditation, internationally recognised by the Washington Accord. All 29 universities listed in Table 1, as Group 1, were assessed to compare the differences in curriculum design between their UG and PG awards, where Figure 5 summarises these differences. As can be seen in this figure, approximately half have the same curriculum design when meeting EPP requirements and the remaining half have varied curriculum. Of these 29 universities, 11% have differences in credit where postgraduate curriculum either had credit removed (4%) or added (7%). A further 10% had differences in subjects where the dedicated WIL subject was removed for postgraduate students. Additionally, a small number of universities (7%) had differences in the minimum threshold time required in industry. The remaining 17% had a combination of differences with either subjects, credit and/or minimum threshold time in industry, as shown in Figure 5.

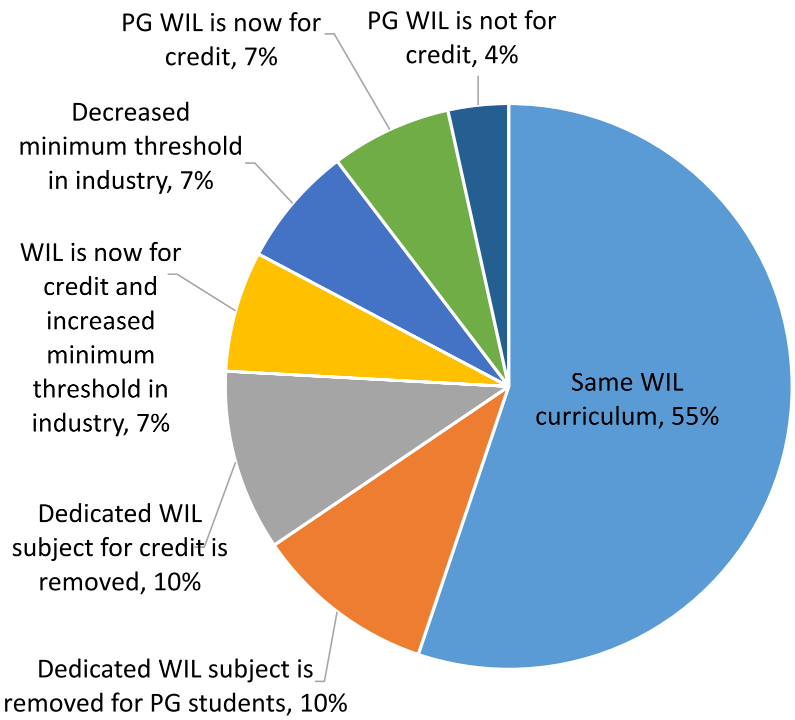

Figure 5: Postgraduate WIL curriculum compared to the Undergraduate level.

Correlation between WIL Curriculum Design and Employment

It is well established that EPP in the form of Work Integrated Learning (WIL) is an important component in STEM education and contributes significantly to the employability of graduating students (Daly *et al.*, 2014). This study examined the correlation of WIL curriculum design and graduate employment outcomes by grouping universities together based on key parameters. The first key parameter is the level of threshold time required in external industry. As can be seen in Figure 6, universities were grouped as either: no threshold, 30-60 day threshold, or 60 day or more threshold. A comparison of the level of full-time employment indicates an improvement in graduate employment for both undergraduate and postgraduate students when the threshold time in industry is increased to 60 days or more.

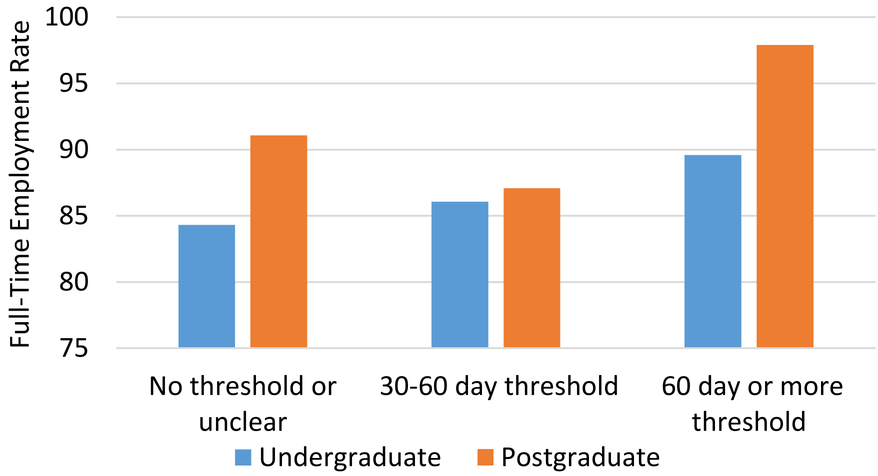

Figure 6: Influence of threshold time in industry on full-time employment rate.

A further analysis into key parameters influencing graduate full-time employment rates was performed. The three key parameters identified were WIL subject credit, core WIL preparation subject, and threshold time in industry. A comparison of full-time employment rates is presented in Figure 7 for degrees that did or did not include these three key parameters. As can be seen in this figure, full-time employment rates generally improve for graduates completing engineering degrees that have WIL for credit, a core preparation subject, and some threshold time located in industry.

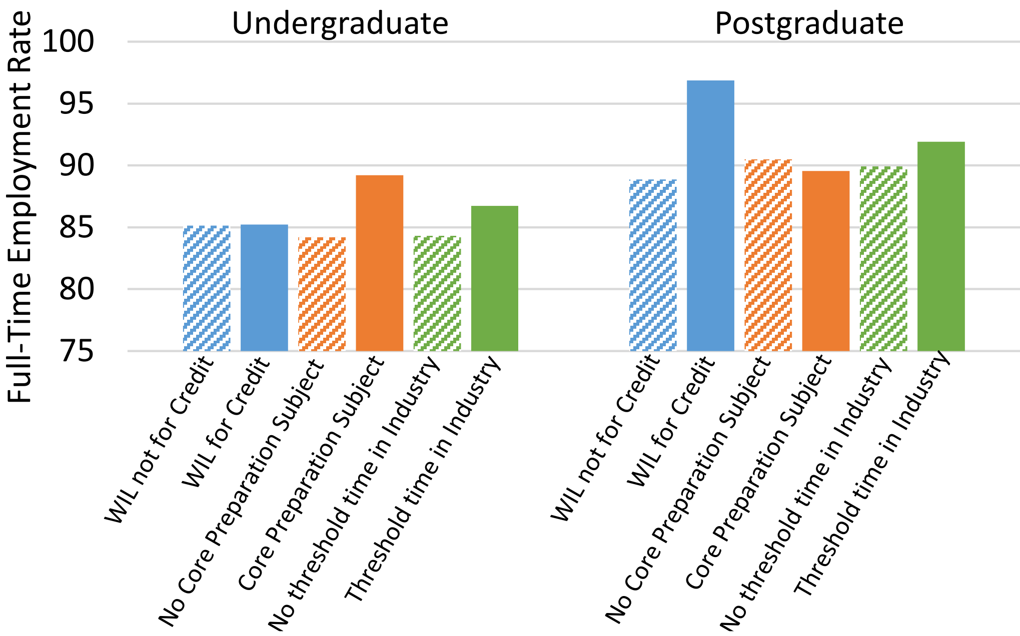

Figure 7: Influence of credit, preparation subject and threshold time in industry on full-time employment rate.

Correlation between WIL Curriculum Design and Student Satisfaction

As mentioned previously, student satisfaction rates can be influenced heavily by WIL curriculum design. High levels of student satisfaction on their overall education experience can be attributed to performing work-based WIL (Kapareliotis *et al.*, 2019). As can be seen in Figure 8, the overall experience of students is presented for the same previously compared groups based on threshold time in industry. Figure 8 indicates a graduate student's satisfaction with their overall educational experience increases when the threshold time in industry is 60 days or more.

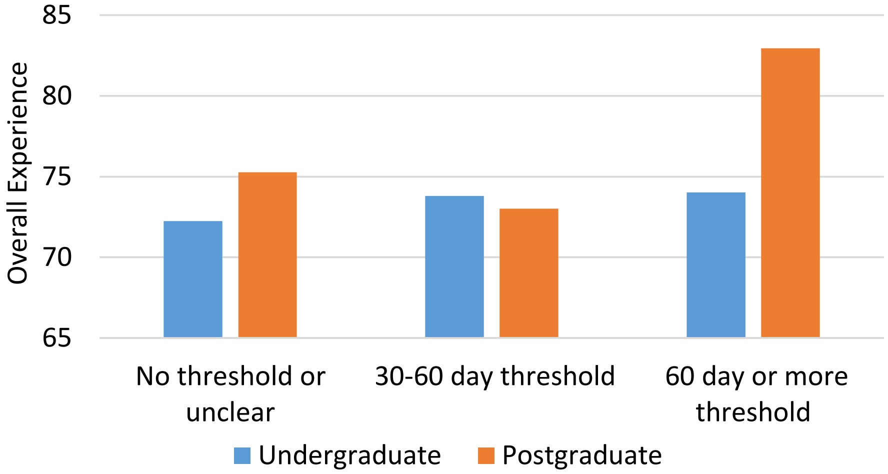

Figure 8: Influence of threshold time in industry on overall experience.

Student satisfaction with their overall educational experience was assessed further by comparing the 3 previously identified key parameters, namely WIL credit, core preparation subject, and threshold time in industry. Figure 9 presents a comparison of overall experience for degrees that did or did not include these three key parameters. As can be seen in this figure, overall satisfaction is noticeably improved for both UG and PG students completing engineering degrees that have WIL for credit, with a core preparation subject, and some threshold time located in industry.

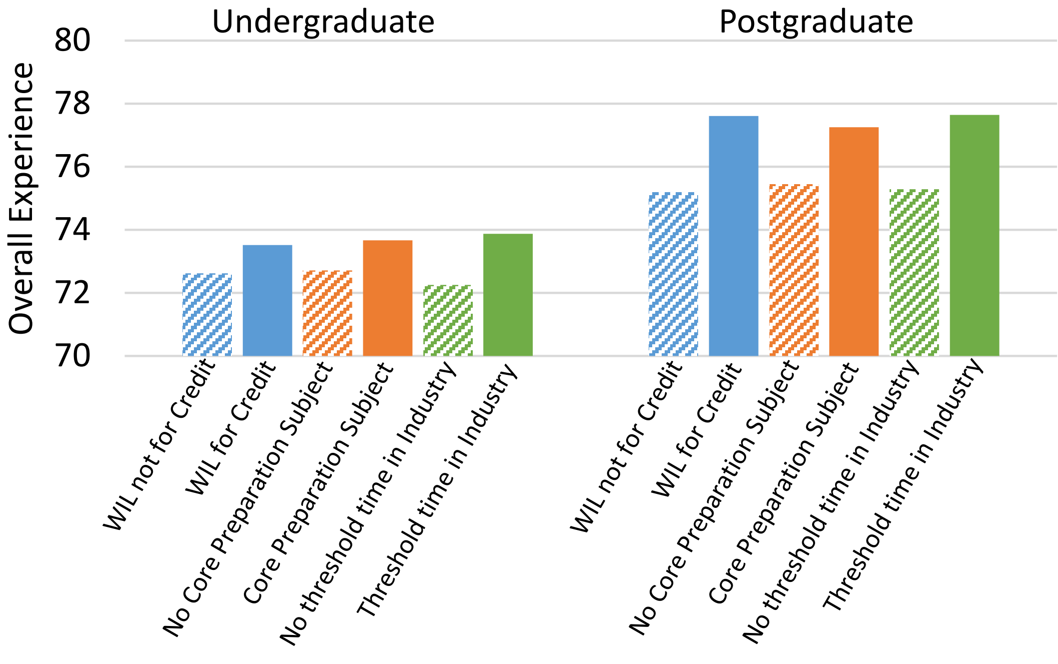

Figure 9: Influence of credit, preparation subject and threshold time in industry on overall experience.

Conclusion

This study has presented an assessment of how EPP requirements are satisfied by the 34 Australian universities that maintain Professional Level accreditation status from Engineers Australia. Data was collected from pubic facing websites and the Good Universities Guide website to assess how key WIL-related parameters influence student satisfaction and graduate employment. The following conclusions can be formed:

- A majority of both UG and PG engineering degrees do not associate credit with a subject dedicated to an external industry work-based experience. Additionally, a majority also do not have a core subject to prepare students for these external industry experiences.
- Approximately two thirds of engineering degrees have no core requirement of their students spending time immersed in industry work-based WIL.
- Full-time employment rates generally improve for both UGs and PGs completing engineering degrees that have WIL for credit, with a core preparation subject, and some threshold time located in industry. Full-time employment rates also improve for both groups when the threshold time in industry is increased to 60 days or more.
- Overall satisfaction is noticeably improved for both UG and PG students completing engineering degrees with WIL for credit, with a core preparation subject, and some threshold time located in industry. UGs and PGs report higher levels of satisfaction with their overall educational experience when the threshold time in industry is 60 days or more.
- It is recommended dedicated preparation subjects are embedded, mandating or standardising minimum thresholds for work-based WIL immersed in industry, and ensuring equitable access to these work-based WIL experiences for all students.

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