Foundational-WIL for employability awareness: A faculty-wide approach

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This paper discusses the outcomes of an action-research project designed to consider whether a compulsory foundational work-integrated learning (WIL) subject within a faculty at an Australian university could make an impact on three key outcomes: 1) student awareness of employability; 2) student perceptions of WIL approaches to enhance employability skills; 3) student understanding of the value of career platform tools to practise and demonstrate employability skills. Results gathered from a pre- and post-study survey and subject evaluation survey indicate an improvement in student perceptions relating to the three intersecting aspects of employability learning after completing the subject. At the conclusion of the study, over 3,000 students had completed the subject and it had evolved to become core in 80% of undergraduate courses in the Faculty. The results provide evidence of a sustainable course-wide curriculum approach for commencing the horizontal and vertical scaffolding of constructively aligned discipline-specific employability assessments.

Keywords: Employability, scaffolded curriculum, career education, fully online learning, foundational WIL

EMPLOYABILITY LEARNING: A PROCESS NOT A DESTINATION

Work-integrated learning (WIL) approaches in higher education are increasingly normalized as a curriculum-led vehicle for enhancing graduate employability (Jackson, 2015; Oliver, 2015; Yorke, 2006). Program approaches that enable horizontal and vertical curriculum scaffolding for improved employability outcomes are needed (Jackson, 2015; Smith et al., 2014). An integral domain of WIL is "for everyone involved in realizing its true potential within the nexus of employability and career development learning and work-integrated learning" (Smith et al., 2018, p. 22). Career education needs to be an iterative and ongoing process throughout a course to develop students' career resilience (Waddell et al., 2015) so that they are better able to "find, create and sustain meaningful work across the career lifespan" (Bennett, 2018, p. 6).

As with all sound curriculum design, the value of constructive alignment and scaffolding (Biggs & Tang, 2011) applies to employability learning. Strategies should provide opportunities for students to raise their awareness of how to navigate the world of work (Australian Government Department of Education Skills and Employment, n.d.) within their course/discipline context. The principle being that employability learning must be integrated to core disciplinary knowledge and skillset domains and applied via experiential learning approaches (Kolb & Kolb, 2005).

The learning frame, for discipline-expert academics (who may be less familiar with employability learning pedagogies and assessment frameworks) need support and guidance in how to utilize a "range of approaches and strategies that integrate theory with the practice of work within a purposefully designed curriculum" (Patrick et al., 2008, p. iv). The value of career education must be socialized within course teams before evidence of uptake is noted (Young et al., 2017). Scaffolding of career and employability learning from a whole-of-course approach is vital for developing employability (Young

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et al., 2019). Further to this, if included as core, students may be more likely to recognize the value attributed to, and placed upon, their employability learning from the onset of their degree (Young et al., 2017).

Career education scaffolding relates to the intentional nesting of employability learning design and assessment across year levels, scaffolded vertically and horizontally. Foundational-WIL in the context of this study refers specifically to compulsory on-line self-paced learning about employability and that which must precede a WIL placement. However, the term is intended to encapsulate a pedagogical approach for building career awareness and beginning the process of employability learning.

This paper reports on the renewal of a STEM-centric employability subject taught into a faculty at an Australian university offering courses in the discipline areas of life and environmental sciences, engineering, information technology, and architecture and the built environment. Here a subject refers to the teaching that typically spans one academic trimester, sometimes referred to at other institutions as individual 'units' or 'courses'. Further to this, a course in this paper refers to the series of subjects in the undergraduate program of study that lead to a higher education award of a bachelor degree. The specific goal was to re-design an online WIL subject with a strategic vision in mind – to provide a foundation for enabling a Faculty-wide improvement in the scaffolding of WIL to every undergraduate student. This paper summarizes the subject renewal process of an existing career education subject that led to whole-of-Faculty WIL curricula change; and the outcomes of the renewal of foundational approaches to career education curricula evidenced through student perceptions of their employability learning.

BACKGROUND

In 2016, the Faculty began a five-year plan to enhance student employability via the embedding of intentional and scaffolded WIL approaches to curricula. The *Foundation-WIL* project was one of many action-research approaches undertaken in the Faculty aimed at investigating how to best enhance the employability outcomes of its varied graduate cohorts. This arose from Deakin's long standing strategic mission to embed employability in all programs "to help our students to realise their goals in a rapidly changing and increasingly digital world that requires a combination of specialist and transferable skills, entrepreneurialism and a recognition of the importance of lifelong learning" (Deakin University, 2020, p. 10).

Building the professional capacity of course teams to improve the thinking, planning, and implementation of adapted or adopted WIL approaches to curricula was the first frontier for enabling sustainable and scalable WIL. Young et al. (2017) discuss the why, what and how curriculum change was approached within the Faculty. Findings indicated that changes in curricula that intentionally include good practice WIL-lens approaches are best introduced by WIL experts, enabled by WIL champions who are members of course teams, and supported in a top-down approach by executive. A significant barrier specific to the implementation of embedded and introductory WIL approaches, which became evident in the *WIL on Campus* (WoC) project (Young et al., 2019), was the perceived bias towards assessments that were high proximity/authentic WIL (Kaider et al., 2017). A significant component of this first frontier of cultural transformation occurred at a targeted and micro-level through the *Work-Integrated Learning (WIL)-Foundation* project.

The *WIL-Foundation* project involved a narrow scope - the review and renewal of identical foundational-WIL undergraduate and postgraduate zero credit-point online subjects: *Introduction to Work Placements*.

A previous paper arising from the *WIL-Foundation* project (Willems et al., 2016) detailed the curriculum changes of both offerings based on a flipped-learning approach, and the impact that a novel CPR (Content, Practice, Reflection) model had on the final delivery of the re-designed subject. In reviewing and renewing the subjects, the WIL principles of authentic, relevant, student-centered, and active learning (Gulikers et al, 2004) grounded the curriculum review frame. The trial of new curriculum initiatives to encourage student engagement in their personal employability learning journey, was grounded by active learning concepts enabled through technology-based learning. Curriculum renewal of this type has proven successful for similar wholly online career education modules whereby improvements have been reported for student perceptions of self-confidence regarding career adaptability and awareness of job opportunities (Teychenne et al., 2019). Employability content was explored and practised via gamification, and the learning was supported by timely (instant) and personalized (perceived) feedforward and feedback. This approach harnesses the value of stimulating student self-worth through feedback, as well as a reduction of chalk and talk knowledge-acquisition and testing. Rather it uses learning environments to promote active, student-centered applications of learning (Willems et al., 2016). Just as important as teacher feedback and inter-active (peer) feedback in these active learning environments is the use of self-reflexivity as another layer of feedback for learning. It was found that curricula using reflective practice to systematically pause and analyze experiences for deep understandings relating to learning, performance and outputs, is a crucial pedagogical design principle of WIL (Hains-Wesson & Young, 2017).

Employability learning in the subject was used to guide student awareness of the difference between employability and employment, first achieved by explaining employability to students as "a set of achievements – skills, understandings and personal attributes – that makes graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy" (Yorke, 2006, p. 8). Following this, the subject shifted to active learning modes to develop students' ability to demonstrate (evidence) their employability skills via three popular career tool platforms used in job recruitment. The purpose of aligning employability concepts with employability skills, through authentic assessment activities, was to encourage students to grasp the concept of showcasing their whole-of-student capabilities. In summary, the subjects encourage students to begin thinking about how they will navigate the world of work within the context of their course. This is achieved through the sequential delivery of a series of modules whereby students consider their past, present and future. Students look back on their past experience to develop their resume. Students then consider where they are at present, to produce a Me In a Minute (MIM) script or LinkedIn summary (gaining confidence in articulating professional capacity and value by curating the best examples of their experiences, passions, and capabilities to prospective employers/placement providers). Students then plan for where they want to get to and how to achieve this by developing a three-year Capacity-Building Plan (CBP). This assists students to develop self-awareness in relation to placement opportunities and transition to employment processes and outcomes. Compulsory surveys, taken prior to and immediately after completion of the subject content (and then the final quiz which denotes subject completion), respectively measure students' perceived employability.

The project addresses the overarching research question: what Faculty-wide initiatives relating to the enhancement of employability might raise the awareness of the importance of developing employability skills for students? The frame of inquiry for this study included:

1. In-subject surveys to determine if student perceptions of their employability awareness has been enhanced,

2. Subject feedback to determine if students engaged positively with the curricula and the assessment activities and
3. A mapping of course rule data pertaining to the core subject and subsequent link to other subjects in courses via pre-requisite rules. This will determine if there are increasing WIL approaches to curricula within the undergraduate programs in the Faculty as a result of the foundational WIL subject.

Related to this refined frame of inquiry, are the following two sub-research questions for this study:

- (R1) Are students indicating that they are more aware of employability learning by the time they complete the foundational WIL subject?
- (R2) Does the trend data provide evidence that the foundational WIL subject has made an impact on whole program scaffolding of career education and WIL curricula in undergraduate courses across the Faculty?

RESEARCH METHOD

Participants

Since the implementation of the project, the subject has run six times, with the inception of the revised subject occurring in 2016. Data collection occurred between mid-2016 to the start of 2018. Enrolment numbers range between 259 to 1,078 students per trimester, with a total of 3,092 successful student completions contributing to this dataset (Table 1).

Procedures

Students were required to respond to compulsory questions in both a pre- and post-subject survey in order to complete the subject. These in-subject surveys were designed to investigate changes in students' awareness of their employability (R1) by encouraging them to reflect on their understanding of WIL, their demonstration of employability skills, and practice in using career platform tools used when seeking employment. The survey and scale were developed to help understand the student cohort and help refine a more specific set of questions that directly assess student understanding of their general employability. Validation of the survey and scale was outside the scope of this research. The use of pre-post surveys have been reported elsewhere for analyzing effectiveness of career education modules (Teychenne et al., 2019) and practicum WIL (Sambell et al., 2020) in developing student perceptions of employability.

At the end of each trimester, students were invited to provide their experience of the subject by completing the voluntary *eVALUate* survey administered by the University: students did not need to complete the *eVALUate* survey to compete the subject.

The second research question (R2) focused on evidence of whole-of-program approaches to career education and WIL, as well as demonstrated examples of curriculum updates within undergraduate programs in the Faculty. It is pertinent to note that, at the onset of the project, instances of scaffolded career assessments were sparse and unintentionally designed. The purpose of this research question was to ascertain if whole-of-program approaches to career education were evident.

Ethics

This study received ethics approval (STEC-04-2016-WILLEMS-MOD 01). Ethical clearance was obtained for the compulsory surveys because they were designed as a formative student-centered self-assessment career awareness tool as well as an analytic for curriculum improvement. Students were provided the following text before starting the pre-student survey:

> This survey will help you reflect on your understanding of WIL. Your answers to this survey are not marked and are for your self-development. You will get to do this survey again at the end of the unit [subject] so that you can analyze your own progression. The surveys will also be used to inform and develop future iterations of this unit [subject].

TABLE 1: Subject enrolment numbers and completion rates for the foundational-WIL subject.

Grade	**T2 2016**	**T3 2016**	**T1 2017**	**T2 2017**	**T3 2017**	**T1 2018**	**Total**
Ungraded pass	469* (85%)†	209 (81%)	582 (76%)	895 (83%)	240 (82%)	697 (77%)	3092 (80%)
Fail	0	0	2	0	0	1	3
Did not submit	80 (15%)	50 (19%)	185 (24%)	183 (17%)	51 (18%)	209 (23%)	758 (20%)
Total^	549	259	769	1078	291	907	3853

*The number of students.

†The percentage of students that achieved this grade relative to the cohort total.

^The number of students who received a final grade. This number does not always match with *eVALUate* survey total enrolments which includes late withdrawals.

Data Analysis

The pre-post surveys included 18 quantitative items that asked students to report their level of agreement using a 5-point Likert–type scale for each of the 18 item statements (strongly disagree, disagree, neutral, agree, and strongly agree; Table 2). A quantitative analysis was performed on data collected from the pre-post surveys to analyze student perceptions of employability. The measure of success was evidence of shifted (improved) student perceptions of their career and placement-readiness as a result of completing the subject.

The 18 statements were analyzed to evaluate if a core WIL subject was making an impact on: a) student awareness of employability; b) student perceptions of their employability skills; and c) student understanding of the value of career platform tools to practice and demonstrate their employability skills. Eight statements (1, 3, 5, 7, 9, 11, 12, & 13) were excluded from the analyses because they either did not address one of the three areas above or they provided the same information as another statement (note: as a result of this study, the statements have since been revised).

All statement response data were transformed into a binary response variable for analysis. Agreement responses ('agree' or 'strongly agree') were coded as 1 (agreement), and disagreement and neutral statements ('strongly disagree' or 'disagree' or 'neutral') were coded as 0 (non-agreement). This allowed the project members to determine whether there was a positive shift towards agreement with a statement, regardless of whether the shift came from an initial position of disagreement or neutrality. A generalized linear mixed model was run for each of the 10 statements using the 'lme4' package in R Statistical Package (Bates et al, 2015) to test this shift. The response variable was the student's binary

response, agree/non-agree, to the statement and the predictor variable was the pre/post-study survey. As each student responded to the pre and post-study survey, the data was not independent. To account for the non-independence of the data student ID was included as a random effect in the models. Models were run using a binomial distribution.

From the *eVALUate* survey, students could respond to two qualitative questions; 'What are the most helpful aspects of this unit [subject]?' and 'How do you think this unit [subject] might be improved?' These responses were manually analyzed for the occurrence of themes relating to employability learning, with key word searching for related words: 'employability', 'career', 'work', 'work readiness', 'career readiness', 'placement readiness' and 'employ'. Manual analysis of the data according to themes in this way (a deductive, top-down thematic analysis; Braun & Clarke, 2012) has been reported for similar studies (e.g., Sambell et al., 2020).

The qualitative data gathered from the *eVALUate* surveys were analyzed to identify improvements that could be made in terms of student engagement with the building of awareness, understanding, application and use of employability skills and tools (R1). Agreement levels included, strongly disagree, disagree, neutral, agree, and strongly agree. Four of the 11 items were chosen to investigate specifically: student's agreement with the subject's quality of teaching (Q5), level of feedback provided (Q7), motivation (Q8) and satisfaction (Q11). Responses were grouped by agreement (agree, strongly agree) and disagreement (disagree, strongly disagree) to create a binary dataset. Responses of 'unable to judge' were removed from further analysis.

Addressing the second research question (R2) required a desktop analysis utilizing a familiar and effective program mapping of WIL assessments and career education scaffolding across the Faculty (Kaider et al., 2017). A word search for all current and forthcoming handbook entries for subject names with any of the following terms 'career', 'employability', 'employment', 'professional', 'professional practice', and 'work' was followed by an audit of the numbers and types of career education assessments occurring within the undergraduate programs in the Faculty.

RESULTS

The findings of this study are presented in two parts:

1). Student self-reported perceptions of their employability learning in relation to improved placement and career-readiness (R1).
2). A summary of the evidence and implications of the *Foundational-WIL* project that led to pedagogical changes to the subject, followed by a summary of the impact that the renewed subject has had on scaffolding career education curricula across the Faculty (R2).

TABLE 2: Pre-post-study survey statements and intended uses for addressing student perceptions and awareness.

Statement number	Statement	Intended Use
1	I know what Work-Integrated Learning (WIL) is	-
2	I know what the purpose of WIL is.	Awareness of employability through employability learning and WIL curriculum approaches.
3	I am familiar with the term 'employability'.	-
4	I know how my ongoing learning will improve my 'employability'.	Awareness of employability through employability learning and WIL curriculum approaches.
5	I know what a resumé is.	-
6	I know the purpose of a resumé.	Use of tools to practice and apply employability skills.
7	I know what a Me in a Minute (MIM) video is.	-
8	I know the purpose of a MIM video.	Use of tools to practice and apply employability skills.
9	I know what a capacity building plan is.	-
10	I know the purpose of a capacity building plan.	Use of tools to practice and apply employability skills.
11	I believe my ability to describe my past experiences will influence my future employment opportunities.	-
12	I believe my ability to describe and promote my unique set of skills, knowledge and experiences to employers will influence my future employment opportunities.	-
13	I believe that my ability to identify my current capabilities linked to multiple career pathways will influence my future employment opportunities.	-
14	I know my strengths in relations to the discipline knowledge needed to gain employment in my career of choice.	Value of WIL and employability learning approaches for enhancing employability skills.
15	I know my strengths in relation to skills needed to gain employment in my career of choice.	Value of WIL and employability learning approaches for enhancing employability skills.
16	I know my strengths in relation to the attributes (personal qualities or characteristics) sought by employers to gain employment in my likely career of choice.	Value of WIL and employability learning approaches for enhancing employability skills.
17	I have a set of professional career tools that identify my past, current and future experiences that I use to apply for employment opportunities.	Use of tools to practice and apply employability skills.
18	I know how career tools that identify and produce professional documentation of my past current and future experiences are important for my future employability.	Use of tools to practice and apply employability skills.

1. Shifts in Student Perception on Employability Learning (R1)

The pre- and post-in-subject compulsory student surveys detail student perceptions of employability. The comparison of pre to post survey results indicate changes in student perceptions as a result of completing the subject (Table 3). Students experienced a significant increase in their awareness of employability (survey statements 2 and 4), their valuation of WIL and employability learning (survey statements 14, 15, 16), and their understanding of the use of tools to practice and apply employability skills (survey statement 6, 8, 10, 17, 18). Shifts in agreement with pre- and post-study survey statements ranged from 0% to 55% (Table 3).

Pre-study, there was a lower level of 'knowing the purpose of WIL' compared to 'understand how their ongoing learning improves their employability' (79% and 88% respectively for statements 2 and 3). Post-study there was a significant positive shift for both statements and a high level of agreement (93% and 94% respectively; Table 3).

Pre-study, students had a high base agreement of 'knowing the purpose of a resumé', at 95%, which did not shift during the subject (Table 3). Students indicated relatively low levels of agreement in relation to knowing the purpose of two career tools, a MIM video and a capacity building plan, with 55% and 35% agreement respectively. There was a significant positive shift in students' knowledge of these two career tools after completing the subject with 93% and 90% of students agreeing that they know the purpose of each tool post-study (Table 3). Post-study, 93% of students agreed that they understood how using career tools to document their experiences and skills was important for their employability, up significantly from 67% at pre-study (Table 3). There was a 37% increase in the number of students who agreed that they had a set of career tools that they could use to find employment, up from 53% to 90% by subject completion (Table 3).

There was a significant shift in student's self-awareness of how their strengths relate to them gaining employment. Pre-study, 76% of students agreed that they knew their strengths in relation to the discipline knowledge and skills they required to gain their career of choice, and their strengths in relation to the attributes sought by employers. After completing the subject this agreement rose to 92% (Table 3).

Table 4 provides the accumulated number of student responses to *eVALUate* survey questions 1-11 over seven trimesters (from 2016 to T1 2018). There were high levels of student agreement in relation to all *eVALUate* survey questions, with the percentage of agree ranging between 74-88% (Table 4). A total of 990 students responded to the survey during the six trimesters.

During the data collection phase of this study (2016-2018), there is evidence of positive trends in relation to students' perceptions that feedback provided in the subject helped them to achieve the unit [subject] learning outcomes (Figure 1). In T1 2016, student agreement in relation to feedback was at approximately 77% (150 total student responses). After implementing the subject changes there was an initial drop in student agreement regarding feedback (119 and 52 total student responses in T2 and T3 2016 respectively: Figure 1). For the last three trimesters, however, student agreement has been at approximately 84% (208, 43 and 232 total student responses in T2, and T3 2017 and T1 2018 respectively; Figure 1). This indicates a 7% improvement in student's agreement in relation to the feedback provided in the subject.

TABLE 3: Changes in student responses to selected survey statements before (pre) and after (post) subject completion.

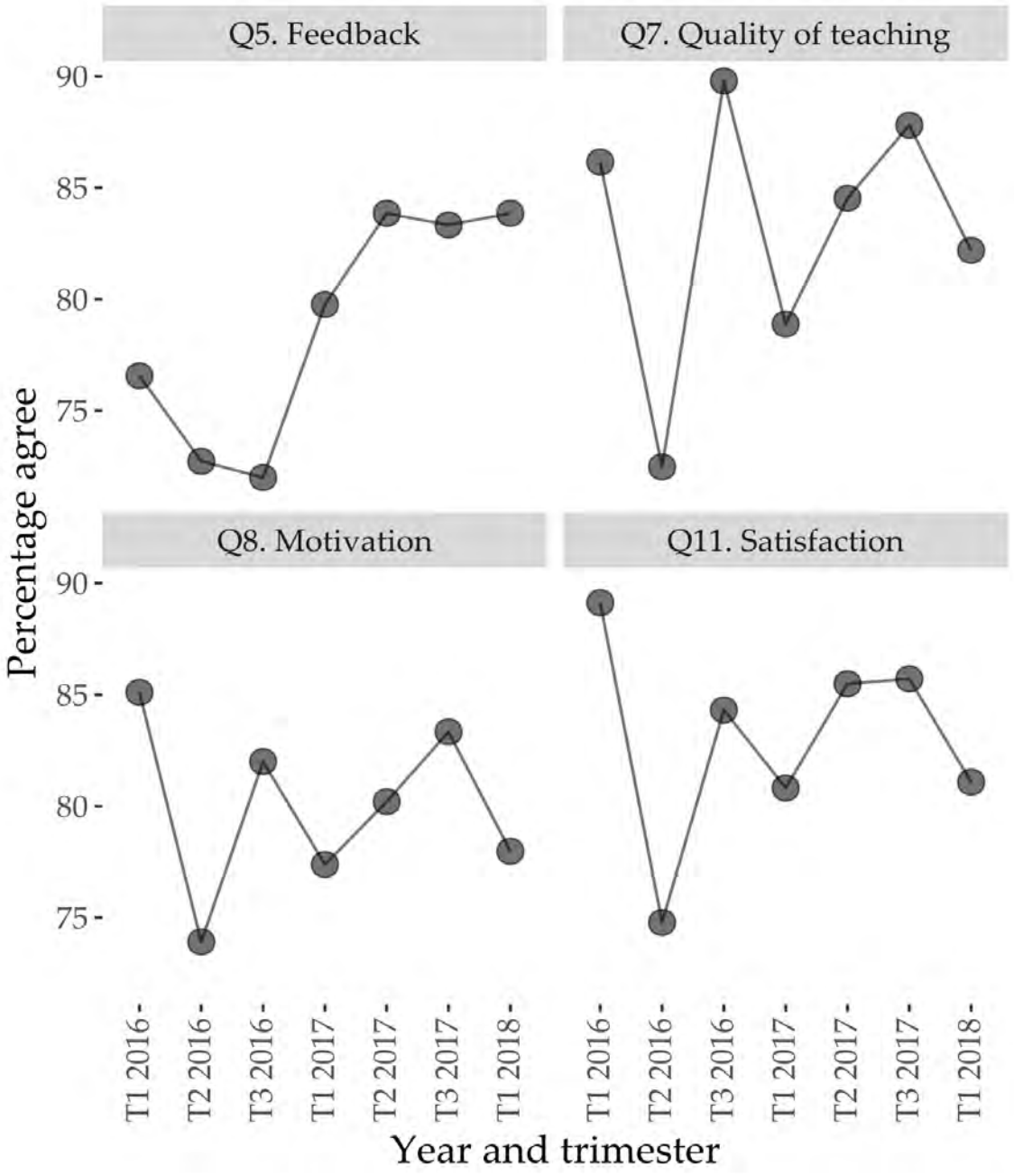
Statement	% Average Agreement	Fixed Effect	Estimate	Std. Error	Z-Value	P-Value
2 - I know what the purpose of WIL is. (Obs. = 5,797; Grp. = 3,029)	Pre = 79; Post = 93	Intercept	1.771	0.096	18.480	<0.001
		Pre-post survey	1.330	0.095	13.940	<0.001
4 – I know how my ongoing learning will improve my 'employability'. (Obs. = 5,807; Grp. = 3,027)	Pre = 88; Post = 94	Intercept	7.085	0.276	25.630	<0.001
		Pre-post survey	2.296	0.221	10.367	<0.001
6 - I know the purpose of a résumé. (Obs. = 5,784; Grp. = 3,028)	Pre = 95; Post = 95	Intercept	8.242	0.305	26.980	<0.001
		Pre-post survey	0.391	0.208	1.880	0.060
8 – I know the purpose of a MIM video. (Obs. = 5,785; Grp. = 3,030)	Pre = 55; Post = 93	Intercept	0.205	0.041	5.048	<0.001
		Pre-post survey	2.520	0.096	26.200	<0.001
10 - I know the purpose of a capacity building plan. (Obs. = 5,752; Grp. = 3,025)	Pre = 35; Post = 90	Intercept	-0.696	0.047	-14.870	<0.001
		Pre-post survey	3.018	0.108	27.910	<0.001
14 - I know my strengths in relations to the discipline knowledge needed to gain employment in my career of choice. (Obs. = 5,805; Grp. = 3,028)	Pre = 76; Post = 92	Intercept	1.477	0.080	18.440	<0.001
		Pre-post survey	1.532	0.095	16.190	<0.001
15 - I know my strengths in relation to skills needed to gain employment in my career of choice. (Obs. = 5,799; Grp. = 3,026)	Pre = 76; Post = 92	Intercept	1.471	0.079	18.560	<0.001
		Pre-post survey	1.514	0.094	16.120	<0.001
16 - I know my strengths in relation to the attributes (personal qualities or characteristics) sought by employers to gain employment in my likely career of choice. (Obs. = 5,790; Grp. = 3,029)	Pre = 77; Post = 92	Intercept	1.548	0.082	18.890	<0.001
		Pre-post survey	1.410	0.093	15.210	<0.001
17 - I have a set of professional career tools that identify my past current and future experiences that I use to apply for employment opportunities. (Obs. = 5,805; Grp. = 3,030)	Pre = 53; Post = 90	Intercept	0.090	0.039	2.273	0.023
		Pre-post survey	2.330	0.088	26.477	<0.001
18 - I know how career tools that identify and produce professional documentation of my past current and future experiences are important for my future employability. (Obs. = 5,802; Grp. = 3,028)	Pre = 67; Post = 93	Intercept	0.813	0.051	15.990	<0.001
		Pre-post survey	1.913	0.091	21.120	<0.001

Note. Results from binomial generalized linear mixed models that test the significance in the change of student's responses to statements before and after completing the subject learning. 'Obs.' indicates the number of observations included in the model. 'Grp.' indicates the number of paired pre/post-study survey data included in the model. 'Pre' and 'Post' indicate student's average agreement with the statement, in percentage, at the pre/post-study survey points.

TABLE 4: Responses to eVALUate questions over seven trimesters between 2016 and 2018. SD = standard deviation; N = total number of responses; Total agree = sum of responses including 'Agree' and 'Strongly agree.'

Question number	Question text	Used to address	N	Mean ± SD	Total agree
1	The learning outcomes in this unit are clearly identified.	-	990	3.39 **± 0.81**	870 (88%)
2	The learning experiences in this unit help me to achieve the learning outcomes.	-	989	3.32 **± 0.89**	817 (82%)
3	The learning resources in this unit help me to achieve the learning outcomes.	-	988	3.32 **± 0.87**	832 (84%)
4	The assessment tasks in this unit evaluate my achievement of the learning outcomes.	-	985	3.30 **± 0.88**	814 (82%)
5	Feedback on my work in this unit helps me to achieve the learning outcomes.	Level of feedback	987	3.21 **± 1.01**	731 (74%)
6	The workload in this unit is appropriate to the achievement of the learning outcomes.	-	991	3.34 **± 0.89**	826 (83%)
7	The quality of teaching in this unit helps me to achieve the learning outcomes.	Quality of teaching	986	3.30 **± 1.01**	731 (74%)
8	I am motivated to achieve the learning outcomes in this unit.	Motivation	986	3.14 **± 1.00**	746 (76%)
9	I make best use of the learning experiences in this unit.	-	986	3.24 **± 0.94**	789 (80%)
10	I think about how I can learn more effectively in this unit.	-	984	3.19 **± 0.97**	750 (76%)
11	Overall, I am satisfied with this unit.	Satisfaction	983	3.22 **± 0.96**	773 (78%)

FIGURE 1: Percentage of student respondents that agreed with four selected *eVALUate* survey statements regarding feedback (Q5), quality of teaching (Q7), motivation (Q8) and satisfaction (Q1).



Note. The reader is directed to Table 4 for complete question statements. T1 2016 – T1 2018 represent trimesters that the unit [subject] was run and for that data was collected.

Student agreement in relation to the quality of teaching provided in the subject has varied since the subject revisions, noting that it has not resulted in a clear positive or negative shift overall (Q7; Figure 1).

On average, the number of students who agreed that they were motivated to complete the subject dropped by about 5% after the implementation of subject changes, from ~85% to ~80%. Similarly, the number of students who agreed that they were satisfied with the subject dropped about 5%; from ~89% to ~84% (Figure 1).

The qualitative data pertaining to the end of trimester *eVALUate* surveys were analyzed to gain insights into whether students' perceptions of their employability awareness and applications of career tool usage were affected by the subject delivery and overall learning experience of the subject (R1).

The project team used *eVALUate* data from the original version of the subject to ascertain what improvements would be most helpful for activating engagement with employability-related learning. The comments received from students in the original version of the subject indicated that it was difficult to navigate through the subject content. The assumption was that obstacles relating to the activities in the subject would be likely to impact on the engagement in the subject, and may lead to a reduced impact on student's self-perception of improved employability learning.

Feedback on the revised subject did include a small number of negative comments. Such feedback indicated that it was not as useful for students with prior professional experience. The following quote is typical of the responses from mature age students who may already have significant professional experience and saw no need to improve their employability skills: "Mature age students should have a different unit [subject] structured for them. Given I am an IT Professional already this unit [subject] was useless."

Most of the feedback were comprised of positive comments, such as, "the step-by-step process makes the tasks clear and are sequenced in a good order." Other student quotes remarking on the positive elements of the subject included:

> The unit [subject] was beautifully set out step by step with the past- present- future modules to help us form our 3 career tools. Since it was a cloud unit [subject], the cloud site for this unit [subject] was the most helpful. It had all the resources required to succeed in the unit [subject].
>
> The unit [subject]-team informs the students routinely on un-completed parts of the unit [subject]. This was very helpful, as I would have probably have forgotten to have complete the unit [subject] by the due date if it were not for the consistent email reminders. Please keep this, it helps a lot. To me, the unit [subject] forced me to think about my life values and interests in a way I hadn't done before, this was very helpful (one of the interactive activities).
>
> This unit [subject] really helped me to build my resumé [either résumé or sic]in a way i did not even expect. It gave an insight to what employers are looking for in your resumé [either résumé or sic] and that was very helpful.

2. Foundation WIL: a Starting Point for Horizontal and Vertical Scaffolding for Embedded Whole-of-Course Approaches

Student responses from the *eVALUate* survey spoke to the perceived value of the subject as one which begins the all -important employability learning journey. One recorded comment speaks about what the teaching team would refer to as scaffolding as that which "kick starts students' resumé skills at an early stage in the degree program. This is a great thing!" A further response exemplifies the perceived value of the long-term picture of career education from the student point of view:

> I found that all the components of the course had been very meticulously put together to ensure students get a proper understanding of where they are heading during and after their course. It helped me give a direction to my learning experience and I am now very certain of where I am headed.

The subject mapping reveals that over 3,000+ students in the Faculty (up until T1/2018) had successfully completed the foundation-WIL subject. The review of the undergraduate course maps in the Faculty revealed that 80% of the Faculty's undergraduate courses (at that time) had the introductory zero credit-point subject as a core pre-requisite to a nominated subsequent WIL subject, each with an attached course rule for successful completion to be eligible to be course complete. A significant impact has occurred as a result of including the subject in student's course maps, so that they are automatically pre-enrolled to undertake the subject in their second trimester of first year. This means that approximately 2,000 students per year must complete the subject by the end of the first year of their studies as part of their course requirements. Since the completion of the Foundation-WIL project, the number of undergraduate courses that now have a foundational-WIL subject for constructive alignment to other core (and elective) WIL subjects has increased from three to 19 from 23 courses.

In addition, the mapping also revealed that the three career tool assessments in the foundational WIL subject are intentionally scaffolded to subsequent placement and project WIL subjects. All WIL subjects also require students to revise and reflect on at least one (if not all three) of the career tools prepared in the foundational-WIL subject.

DISCUSSION

This study finds a significant correspondence between students' perceived improvement in their employability awareness and the value they assign to WIL. It supports the contention of Biggs and Tang (2011) that the whole subject, including tasks and assessments, must be seen to have value if students are to engage in it. Good results are being shown with core discipline subjects leveraging the intensive teaching mode of the zero credit-point subject (which runs in Weeks 1-6 of the trimester) with contextualized subject and course-specific employment-related learning in Weeks 7-11 of the same teaching period. Anecdotal evidence indicates that this micro-coupling approach to subject learning is most appreciated when students recognize the value of WIL and their personalized employability journey within it. That is, the perceived value is improved when career education learning is explicitly linked to their field of interest and chosen course.

There was a significant improvement in student understanding of the use of tools to practice and apply employability skills. While most students already reported a good understanding of the purpose of a resume, there was increased post-study understanding of the use of other career tools (MIM and CBP). Our findings align with previous studies reporting improved career planning by students after their participation in a career development program (Miles, 2008; Talib et al., 2015; Teychenne et al., 2019).

A drop in student satisfaction identified with several aspects of the subject in T2 2016 (Figure 3) was supported by survey responses indicating difficulty navigating the newly developed subject site. This was quickly identified as relating to technical issues in the first iteration of new tools and new delivery mechanisms to guide students through the subject sequentially. This was addressed for the next iteration of the subject in T3 2016 and improved satisfaction ratings resulted.

Improved student perceptions about their strengths and the tools for showcasing them (Table 3) can be anecdotally linked with improved confidence (as evidenced by qualitative *eVALUate* survey responses). This can have significant outcomes for student success because negative thoughts and indecisiveness about career pathways and professional identity can hinder mental wellbeing and capacity for career planning, motivation and decision-making (Sampson, 2008; Saunders et al., 2000). Teychenne et al. (2019) reported that students have little idea or preference for their career options prior to completing career planning interventions.

The inclusion of a core zero-point foundation WIL subject to begin the Faculty-wide strategy to scaffold career education approaches for every undergraduate student was significant for shifting compulsory employability related curricula. Handbook audits for 2021 show that nineteen of the twenty-three undergraduate courses in the Faculty (83%) now have the subject as core to course. Much of the uptake of this subject in the undergraduate programs has resulted from it being an independent and self-sustaining subject rather than a bolt-on modular approach to existing subjects. The subject then provides a bottom-up strategy for enabling course teams to re-develop core units to integrate the discipline with employability learning.

The premise of the foundation subject is that learning that is related to portfolio-careers is accumulated over time and is critical for student success - not just for placement-based WIL but also in terms of students' broader employability (Jackson, 2015; Waddell et al., 2015). Signposting and guiding students through this embedded and scaffolded approach is critical. One positive effect noted in this study is the importance of signaling to students that employability learning is a vital foundation of any program of study. Another is that scaffolded WIL curricula are necessary for students to feel adequately prepared to meet both academic and industry expectations. It is argued that quality outcomes are most likely when academics buy-in to the scope for, and value in, further WIL inclusions in their subject specific curriculum (Young et al., 2019). In short, we assert that WIL subjects in the first year of a degree program that specifically aim to raise awareness of employability concepts provide positive outcomes for all stakeholders.

The study finds that the uptake of the revised subject into most undergraduate programs now satisfies the Faculty strategy of designing curriculum innovations that impact on the way whole-of-program embedded and scaffolded WIL approaches empower students for the jobs and skills of the future (Deakin University, 2020, p. 20). This reveals that the curriculum-led renewal approach enabled change not just for the subject, but also contributed to the collective practices of other educators in the Faculty who were indicating the need for, and the desire to, upskill in their delivery of WIL approaches to curricula (Young et al., 2016). The breadth and depth of change for the Faculty, as a result of the action-research project for curriculum-led renewal, was unexpected but beneficial.

Limitations and Future Directions

Limitations of the current study relate to the data collected. While the pre-post survey is compulsory, ensuring a complete representative response, the *eVALUate* survey is not compulsory and hence is

limited by a lower response rate (990 responses for 3092 student completions). Student responses to survey statements for the pre-post survey may be biased by a lack of understanding on the part of the student regarding their level of awareness (Kruger & Dunning, 1999). The Dunning-Kruger effect results in students tending towards an overestimation of their ability as a result of not being self-aware. Mechanisms for avoiding this will be considered in future iterations of the survey tools.

In the future, we intend to involve this subject in a longitudinal study (the data set will include all career education curricula offered in 10-12 of the undergraduate courses offered within the Faculty). The study is aimed at better understanding of how students use the learnings about employability provided in this subject during the progression of their studies. This approach is similar to that of Teychenne et al. (2019) who acknowledged that the impact of their career development module "should be evaluated within the context of an entire degree in which repeat exposure to career planning is available" (Teychenne et al., 2019 p. 52). Evaluation of WIL involves measuring the impact of WIL but is also recognized as a mechanism for quality assurance and improvement (Stirling et al., 2016). As stated by Stirling et al. (2016), WIL is an area that is under-developed and as such requires specific focus. As a result, ethics approval is underway for large data-set comparative analyses (longitudinal study) of pre-post baseline surveys from this foundational-WIL subject with other WIL (project and placement) subjects offered across undergraduate courses in the Faculty. The findings are likely to be of interest across the sector as the intention is to obtain large data sets of discipline-specific student perceptions of developing employability learning from commencement to completion of the degree.

A further limitation relates to the detailed consideration of specific cohort and demographic data which was beyond the scope of this study. Granular analyses of student perceptions of employability are the next issue for investigation. However, one theme that has surfaced is the 'professional' student group, who expressed a need for career transition learning, rather than career awareness learning. Based on this feedback, a re-launch of the subject has recently been piloted so that it runs with an embedded optional professional stream pathway. Anecdotal evidence from students and course teams indicates that this innovation has been favorably received.

CONCLUSIONS

This study contributes to the field by providing an example of an innovative but, most importantly, scalable model for designing and delivering a foundational-WIL subject for large cohorts of multidisciplinary first year students. Our key recommendation is that for a subject of this type to gain traction two things should occur in parallel. Firstly, policies that establish career education as mandatory from early in a program are required. Secondly, practices that see WIL experts deliver the content on behalf of discipline-specific course team members are an effective mechanism for enabling long-term sustainability of embedded career education curricula within and across a program. This then enables further research in relation to what constitutes employability within specific STEM contexts, and how to measure the learning gain of students over multiple touchpoints within a program. The overall purpose of this is better evaluation and measurement, enhanced employability learning for improved graduate outcomes.

This study has found that the subject has had a positive impact on the strategic goal of the Faculty to begin the process of using core curricula to teach, practice and assess employability learning content framed through a WIL-lens. This study has shown that the offering of a foundational WIL subject, delivered as a core stand-alone, zero credit-point, and wholly online offering has resulted in increased student awareness of employability, as well as ways that WIL subjects are designed to enhance

employability skills and thus add value of their career journey. The subject is part of a sustainable course-wide curriculum approach involving academic teaching teams in the horizontal and vertical scaffolding of constructively aligned discipline-specific employability assessments. In summary, the foundational work-integrated learning (WIL) subject has successfully raised the awareness of, and early engagement in, employability learning for students, and has created course structure changes across the Faculty:

1. Students perceive the subject as engaging, valuable, and likely to have a positive impact on their employability learning journey;
2. Reflective practice, which is integral to WIL approaches to curricula, can now be intentionally connected in subsequent subjects to students' professional capacity building;
3. The subject has provided a fixed point for beginning the horizontal and vertical scaffolding of constructively aligned discipline-specific employability assessments;
4. As a core subject to almost every undergraduate student in the Faculty, it assures course-wide approaches to introductory-level employability learning; and
5. The subject provides a fixed point for implementing an evaluation framework for measuring the impact of employability learning on graduate employment outcomes.

The above indicates the Faculty is making significant progress in its intentions to improve the employability awareness of graduates in line with the University's strategic plan calling for all courses to "empower learners for the jobs and skills of the future" (Deakin University, 2020, p. 20).

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