

Action-research approach: Building capacity and enhancing work-integrated learning curricula

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This is the third of three articles investigating the renewal of a foundational work-integrated learning (WIL) subject offered by a faculty at an Australian university. This case study describes the project frame, the intended project deliverables, and the strategic outcomes relating to the renewal process. It reports on how the action-research project approach required the sharing of diverse expertise to enable subject reform and to also challenge and transform existing faculty-wide strategies and practices relating to career education. An accumulation of cultural capital enabled more than the re-design of the single subject, a vertical and horizontal scaffolding of Faculty-wide WIL curriculum enhancement began. The project outcomes demonstrate how a vision for a core STEM-centric foundation career education subject led to broader educational reform relating to student employability.

Keywords: Capacity-building, scaffolding, employability, WIL, career education

This article reports on the re-design process, via an action-research project, of a pre-placement WIL subject, herein referred to as *Foundational WIL* taught into a faculty at an Australian university. The purpose of the project, anchored by an action research methodology (Reason & Bradbury, 2001) was to consider if and how a WIL subject could improve student preparation for seeking, obtaining, and performing in placement-based WIL experiences. In this paper, a 'subject' which can be referred to as 'units' or 'courses' at other institutions, typically defines the content taught during one academic period, and a 'course' is defined here as a series of subjects leading to an award of a bachelor's degree.

The project commenced with a focus on the pedagogical elements pertaining to placement-based WIL readiness. However, early critical conversations, supported from the literature, shifted focus to consider if the provision of career awareness and employability readiness would be an advantageous reform. Career education is considered one of many quality indicators of WIL (Smith et al., 2016), providing both occupational and work-readiness preparation (Collis, 2010; Peach & Gamble, 2011). It is part of an important strategy to embed work-integrated learning (WIL) into undergraduate degree programs within Australian universities to enhance employability outcomes (Jackson, 2015; Smith et al., 2014). Further to this, there is clear evidence that employability enhancements are most effective if course-wide employability-related learning outcomes are valued, planned for, and delivered (Oliver, 2013).

This is the focus of the case study presented here – how shifts in thinking and practice arose. Described here are the ways in which the methodological approach to the project was fundamental to the curriculum review and renewal for a single subject (one of the intended outcomes of the project) and unexpectedly, a formal re-thinking of embedded WIL approaches to undergraduate programs.

A series of three articles (Willems et al., 2016; Young et al., 2017; Young et al., 2021;) and associated studies concerning the renewal of WIL subjects demonstrate change according to three associated

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inquiry domains. Domain 1, the 'what domain', explored what needed to be re-designed. In particular, the pedagogical rationale and approach for revising an existing WIL unit to focus on career education curriculum preparation (Willems et al., 2016). Domain 2, the 'experience domain' examined student self-perceptions of shifting employability understandings, and then how the notion of 'learning gains' led to a strategic push relating to the scaffolding of career education curricula across the Faculty (Young et al., 2021). Domain 3, the 'how domain', is investigated here for the way in which changes relate not only to subject matter enhancement, but also to professional capacity building, and surfacing of wider-reaching programmatic considerations to WIL. Relating to Domain 3, this study reports on a finding from another previous study in which we found that WIL affects whole-of-program and even Faculty-wide culture shifts to scaffolded WIL approaches (Young et al., 2017).

Improving Work-Integrated Learning Practice and Delivery Through an Action Research Approach

The how domain (Domain 3) addresses how action-research curriculum-led projects are a process for enhancing cultural capital pertaining to WIL. Cultural capital (Bourdieu, 1986) helps us to understand how pre-existing learnings and knowledge areas exist and can shift. When this understanding of capital is applied to mainstream STEM curricula in higher education, and then notions of reform, we begin to see how collective skill sets (described in Table 1 below) can lead to an accumulation of WIL subject matter expertise, once outside of the mainstream practice and lived curricula. This social theory of change is used in this study alongside the concept of distributed WIL leadership (Patrick et al., 2014), as a means for improving understanding of the way in which individual's learnings and background unconsciously influence practice.

The capacity building process is formalized via the action-research methodology, so that it functions as a process for developing academic discipline-experts, not familiar with employability learning pedagogies and assessment design, to potentially become WIL champions (Young et al., 2017). The sector requires capacity building for WIL curriculum design purposed for integrating the knowledge and skills of their discipline (theory) with the practices of work.

Academics who are assigned to the design and delivery of highly authentic and proximal WIL subjects (Kaider et al., 2017), by inference, facilitate the enhancement of employability outcomes. However, academics convening WIL subjects that explicitly involve learning outcomes relating to the development and demonstration of enhanced employability skills, require a greater understanding of diverse WIL contexts aligned to authentic assessments as well as related career education assessments (or part thereof) (Hodges et al., 2014; Hoskyn et al., 2016). These academics are required to have the training and capacity to be able to support the educational requirements of programs to ensure quality outcomes, as inferred in standard 3.2.4 in the WIL guidance note (TEQSA, 2022).

However, as Kay et al. (2018) reported from a survey of the Australian and international WIL community, many of the respondents expressed a need for capacity building on designing WIL learning outcomes, WIL assessments and general WIL curricular design. There is a paucity of teaching staff who rate their teaching repertoire as sufficient for teaching and assessing WIL approaches and, particularly career education, even if it is discipline-specific (Young et al., 2017; Young et al., 2019).

Many teaching staff involved in the teaching and assessment of WIL subjects have transitioned from a traditional background and are more familiar with traditional teaching models (Scott, 2016), rather than WIL approaches, career education and co-created authentic assessments (Young et al., 2019). Many teaching staff, whilst knowledgeable about their discipline-specific outcomes, are not educated in, nor are comfortable with, pedagogies and assessments designed to develop the career learning and

articulation of transferable skills deemed to assist students to make informed decisions about the myriad of options for enabling participation in working life (Queensland Government, 2020).

The shortfall is also a result of the uptake of embedded WIL within courses across Australian universities over the last decade. Emerging institutional policies and practices aimed to foster and support the human capital elements enabling whole-of-course WIL approaches are required (Winchester-Seeto, 2019). If such transformations are to become possible “the distinctive contributions to knowledge made through professional practice experience itself” are critical (Fook, 2011 p. 59).

Both WIL champions and teaching staff that express an interest in enhancing discipline-content with WIL approaches and research pertaining to this scholarship, need support. This is where the action-research approach can be beneficial. It is proposed that an integral element for gaining traction for curriculum reform, is an overt attention to the building of teaching staff capacity to re-design and deliver existing discipline-based subjects that include WIL approaches that are taught, practiced, and assessed. Consequently, this study explores if an action research project approach, as a process for formal and scholarly collaboration, is practical and useful for eliciting shifts in practice.

The research questions below were used to explore how the renewal of Foundational WIL in the Faculty could affect, and make an impact on, the breadth of uptake (in terms of quality and quantity) of WIL approaches to curricula, via the action-research methodology:

1. Is there evidence that an action-research project approach is a practical and efficient means for a subject re-design process toward quality WIL design and delivery?
2. Is there evidence that an action-research project approach can affect more than an individual subject re-design (i.e., broader teaching practices, institutional policy, and strategy)?

RESEARCH METHOD

The research investigation considers if action-research projects:

- a. are an effective team-based collaborative process for accelerating quality approaches (scholarly, evidence-based) to curriculum renewal at the subject-level, and therefore
- b. enable growth of cultural capital and thus hegemonic shifts toward the capacity and willingness for teaching staff to include WIL approaches, particularly career education, to existing teaching and learning practices; and finally,
- c. because of both above (item a and b), socialise and operationalise the future value of course-wide and faculty-wide scaffolding and embedding of WIL approaches to curricula.

The case study reports on the action-research procedures, as well as the project outcomes, via a mixed method approach to elucidate the depth and breadth of cultural capital change across the Faculty. The project was sponsored and endorsed by the Faculty executive as a curriculum-led action research project. It operated under ethics approval STEC-04-2016-YOUNG-MOD03.

Project Procedures

The review and renew process was iterative with three pre-determined project operations of engagement with associated expected outcomes:

1. a clearly defined project planning phase with the final intended deliverable being the renewal of Foundational WIL;

2. a collegial series of critical conversations based on practice-centered sharing of expertise and scholarly insights with the intended deliverable of context-specific innovative WIL approaches to STEM curricula for the Faculty; and
3. a formal and transparent reflective practice overlay at the end of each action-research project meeting to generate the ‘now what?’ to the subject renewal process.

The project was established as a formal process for collegial collaboration, conceived in the main as a taskforce but operating as a community of practice (CoP). The reason being that CoP’s are known for their ability to aid in innovation, and act as "effective tools for the creation and sharing of organizational knowledge" (Seyednazari, 2018, p. 82). The project lead, with an interest and expertise in educational innovation around WIL approaches to curricula, decided that the action-research methodology would be ideal for establishing a creative but also an inquiry-based exploration for reform. The reform centered both on the key task at hand, the quality enhancement of Foundational WIL, and a related challenge, the nascent teaching staff capacity in career education.

The project group (Table 1) comprised three curriculum design and teaching experts (not necessarily WIL experts), and one learning designer (a non-academic professional staff member), all of whom were deliberately chosen for the purpose of seeing how different areas of expertise, interest and formal role responsibility, might intersect. The knowledge, practices, and skills each member brought to the project varied and the membership spoke to the value of distributed leadership models, as highlighted by Patrick et al., (2014).

TABLE 1: The project requirements listed as items 1-9 structured as a collective set of team responsibilities for allocation to at least one project member at the time of project commencement.

Required knowledge, skills and expertise (for the project)	Member’s responsibility
1. Experience in industry and education via curriculum projects for enabling innovation.	Project Lead (PL)
2. Experience in the design and delivery of WIL curricula.	PL
3. Insight into examples of effective good practice WIL assessments.	PL
4. WIL Unit [SUBJECT] Chair/Convenor role.	PL
5. Online learning environment expertise	Project Team Members (TM) 2 & 3
6. E-learning and blended learning pedagogy expertise.	TM 3
7. Experience in development of interactive media learning tools.	TM 4
8. University’s learning management platform expertise.	TM 2 & 4
9. Scholarly/research experience in WIL curricula.	PL

The official project meetings functioned similarly to curriculum planning workshops and were usually between 3-4 hours in duration. The basis of each project meeting was an open forum for critical appraisals of the lived practices linked to the literature. A collegial series of challenging and transformative conversations based on practice-centered sharing of expertise and scholarly insights with the intended deliverable of context-specific innovative WIL approaches to Foundational WIL

framed the project intent. Another key frame to the project process was the use of a transparent reflective practice overlay at the end of each action-research project meeting to generate the now what? questions to drive the next phase of the subject renewal process.

As the project lead's teaching practice research area was reflective practice (Hains-Wesson & Young, 2017; Young et al., 2016) the inclusion of autoethnographic accounts as the method for reporting on project member's suggested technological and/or pedagogical revisions was employed (Merrill & West, 2009). Selected accounts noted as pivotal insights gained from the shared understanding were transcribed into reflective practice criteria adapted from Borton (1970).

At the conclusion of each project meeting, the project members used reflective practice to observe and analyze change in practice and change in curriculum (Ellis, 2004; Fook, 2011; Holman-Jones, 2005; Kemmis & McTaggart, 1988). The reflections were inductively analyzed into previously identified major themes (set prior to the first project meeting). The Project Lead needed to function as the participant observer responsible for scribing the field notes (meeting discussions - the raw data). Outside of the formal meetings, months of one-on-one discussions with non-project members, as well as emails sent to the project team, were added to the field notes, and formed the complete dataset. In between meetings, the pivotal moments were shared with the project team for review. This activity was the way in which the action-research project team collectively 'made meaning' of the critical conversations and challenging ideas relating to the renewed subject.

In summary, the action-research process was based on three key positionings: theoretical, personal, and applied.

1. Theoretical - a scholarly approach to re-design innovations (Boyer, 1990)
2. Personal - critical reflections on personal lived experiences.
3. Applied - a collective process for shared understanding, the process of 'making meaning' of the theoretical with the personal for potential application to a renewal of a WIL subject.

Within the context of a university-wide project to ensure constructive alignment across all courses, it was agreed early in the project that all renewed elements of Foundational WIL had to follow principles of constructive alignment (Biggs & Tang, 2011).

Project Outcomes

The following table (Table 2) functions as a representation of both the data generation process used in the project and the key findings for this inquiry. The table provides a curated sample of pertinent extractions from the raw data from the five project meetings, grouped into themes of capacity or curriculum, inferring evidence of change that related to cultural capital of WIL (those that design and teach into WIL, and the content body itself).

TABLE 2: Sample of curated extractions from the raw data findings related to Themes 1 to 6 (T1-T6)

What		So what			Now what
Theme 1 - Idea for change	Theme 2 - Evidence from the literature	Theme 3 - Signs of team engagement	Theme 4 - Evidence of change moments for the team	Theme 5 - Evidence of changes in curricula	Theme 6 - Evidence of unit/course plans for innovation
What needs to change?	What scholarship supports/justifies the proposed curriculum approach?	Was there support or mixed/ambivalent thoughts on the potential change?	Does the Project Lead (PL) notice team members' practices shifting?	Will curriculum change in the unit [subject] be necessary?	Now what needs to occur to enable change for Faculty-wide impact?
What is the suggested curriculum change?					
Meeting 1: 1A. Project scope and intended outcomes 1B. Purpose of WIL 1C: Themes for action–research reflective practice (as a research method) also discussed.	PL notes (team responding in appropriate ways to scholarly curriculum design, but not yet 'shared' understanding of WIL in the Faculty (Young et al., 2017). Guiding principles of experiential learning theory (Kolb and Kolb, 2005) tabled and discussed in relation to 'purpose of WIL' - process of learning related to the experience to create knowledge (p. 3).	Mixed/ambivalent thoughts across the team in relation to processes of learning to create knowledge.	Evidence of shifting mind sets and new skill sets. PL noted that the team were re-iterating good practice of a familiar institution-wide course enhancement process' (Oliver, 2013), evidenced by frequently noted words: 'purpose', 'strategy', 'whole-of-course', 'whole-of-Faculty', 'scaffold', 'employability' and 'active learning'.	No evidence of unit [subject] level curriculum changes at this point. Notations of where unit [subject] changes would be needed and or beneficial.	Action Question: Does the unit [subject] assessment currently provide adequate depth and breadth of opportunity for learning, and of learning, relating to the learner beginning their awareness and their personalised exploration of their career?
Meeting 2: unit assessment and the ways in which assessment has been used in the past, that might be applicable for this unit [subject].	Considerations included: Intelligent agents (Tran & Tran (n.d.)) as surrogate 'teaching' /feedback prompts. Reflective practice model to teach, practice and assess career readiness (Hains-Wesson & Young, 2017; Young et al., 2017). Schema for engaging online learning (Campbell, 2015; Graham et al., 2001). Flipped online learning space (Flipped Learning Network (FLN), 2014, p. 1) as a move away from traditional 'chalk and talk'. Embedded WIL approaches (Edwards et al., 2015). Constructive alignment (Biggs & Tang, 2011).	Support from the team.	The team agreed to improve the unit [subject] by reducing/omitting 'absent pedagogy' and a 'lack of constructively aligned career education curricula', via a modularised flipped learning sequence of "Content' delivery, active Practice', and then 'Reflection' (CPR) .	Yes, changes from: 1. Instructivist approach; 2. Content-centred approach; 3. Resource 'dumping'. Changes to: 4. Online 'teacher' presence; 5. Improved constructive alignment sign-posting.	Evidence: implemented to include all suggested changes in Theme 5 (items 1-5). Action: Propose scholarship focus move to current good practice examples in career education assessment across the institution and from the sector.

Meeting 3: Current good practice in career education assessment across the university and sector.	Portfolios as a learning and employability evidence strategy (Kinash et al., 2014; Faulkner et al., 2013); Career preparation as a mechanism through which career identity develops (Skorikov, 2007); Career management as key to improving approaches to seeking, obtaining, and performing in placement-based WIL experiences (Billett, 2011).	Support from the team	The project group concluded that being a zero credit point subject aimed at first year students, it did not allow the time needed to begin and to teach the value of a portfolio approach to first year students. The use of artefacts, termed 'career tools' derived from the idea that students would build on/improve artefacts in subsequent context-specific units [subjects].	Confirmation of assessment effectiveness; baseline resumé assessment flagged for scaffolding in subsequent core subjects - tailored to course outcomes (and the range of roles relevant to those graduates).	Action: How do the assessments align with current unit [subject] learning and course learning outcomes within the Faculty?
Meeting 4: Learning Outcome (LO) review.	Theory of constructive alignment (Biggs & Tang, 2011) re-discussed in relation to LO's. Focus on the value of explicit articulation of employability concepts in the learning outcomes, not just for students, but also for educators (Moore, 2009).	Support from the team PL & TM2 - showed openness to review the current LO's and indeed critiqued their current language used.	The transparency and openness to change existing frames of practice noted by the flow of ideas during the brainstorming session. It enabled TM3 and TM4 to build capacity and to contribute to the renewed unit Learning Outcomes.	Yes. Three revised LO's now evident in the lived curricula (re-designed and delivered to begin career education awareness).	Action: Brainstorming ways in which employability learning might manifest in the lived curricula across multiple courses.
Meeting 5: Foundational subject for potential career education scaffolding.	The tools in this unit [subject] as a starting point for career learning "portfolio development", to enable scaffolding of multiple WIL experiences within degree programs: in structured, meaningful ways (Jackson, 2015); and for enhancing employability (Kaider et al., 2017); via career management (Bridgstock, 2009), beginning with career planning advice (at subject level (Kuijpers & Scheerens, 2006), to enhance employability strategies (Bradshaw 2014) through employment skill development (Knight & Yorke, 2003; Barrow et al., 2010).	Support from the team, noting the missed opportunity for beginning contextualised employability learning throughout core units [subjects] in a degree/program.	It is perceived that the action-research approach enabled all four members to incrementally and collegially adopt new ideas relating to the value of a whole-of-course approach to the broader embedding of WIL. The four members were showing evidence in their own portfolios of championing the need for a whole-of-course approach to the broader embedding of WIL.	Course map planning documentation provided by the PL and supported by the team demonstrated the rationale that embedded approaches within core curriculum was key (Bridgstock, 2009; Harvey & Shahjahan, 2013)	Action: Sharing of project findings through course-team and Faculty-wide committee discussions, as well as research publications.

The six themes (labelled as T1-T6 in Table 2, established by the Project Lead at the onset of the project), formed a frame for critical reflection to formalize autoethnographic accounts from the project, as the development of cultural capital towards WIL as a change in approach to STEM curriculum. The method was supported from a previous autoethnographic approach, whereby themes were used to record formal pause moments (Hains-Wesson & Young, 2017) for analysis. Here, the themes were adapted from Borton's three 'What, So What, and Now What?' questions. The 'what' phase considered the current status of the curricula encapsulated in themes 1 and 2, it encompasses questions relating to what needs to change (T1) and what evidence is there from the literature to support that consideration (T2). The 'so what' was useful for considering the implications of the current lived experiences of the curricula as well as the review of the literature. This is encapsulated in T3, T4, and T5 and encompasses questions relating to the process of change both from an output perspective (in terms of the subject curricula) and from an outcome perspective (in terms of staff capacity building). The 'now what' was useful for noting the intended future curricula – the thinking behind and the means for improving Foundational WIL. The 'now what' is encapsulated in T6 to encompass matters pertaining to broader career education implications, given that the study also had intentions beyond just the subject revision. The set of themes functioned as a repository for recording data points known as pivotal moments, for the purpose of five formal phased analyses, as well as a final project review and reflection.

RESULTS AND DISCUSSION

The following results from the meeting and field notes highlight the nexus and importance behind a scholarly (Boyer, 1990), context-specific, practice-informed action-research approach. Critical to the success of this project was the distributed leadership style adopted as part of the CoP (Patrick et al. 2014) – it ensured collaboration and exchange, drawing on the cultural capital to accumulate expertise (Bourdieu, 1986). The following details of the case study reveal the process by which cultural capital was built. The results inform how an embedded and scaffolded approach to WIL arose and resulted in the design and deliver of a context-rich quality WIL program for the entire faculty (Kay et al., 2018; Smith et al., 2016; Winchester-Seeto, 2019).

The field notes (Table 2) reflect the team's practices gained from a previous, and familiar, course enhancement process (Oliver, 2013). Analysis of the most frequently noted words in Meeting 1 ('purpose', 'strategy', 'whole-of-course', 'whole-of-faculty', 'scaffold', 'employability' and 'active learning'), reveals the strategic focus of the action research project. Notes for subsequent meetings indicate the proposed innovations were mostly supported (Theme 3). Themes 4-6 demonstrate evidence of change for the lived experiences of the practice of WIL. The range of expertise in the project team (Table 1) resulted in a cross fertilization of novel perspectives for incremental and collegial adoption of new ideas that improved the subject and more.

In meeting 2 discussions revolved around the merit of flipped learning, a then emergent pedagogical strategy considered valuable in science, technology, engineering, and mathematics (STEM) (Johnson et al., 2016; Love et al., 2014). Flipped learning in the blended learning environment (Johnson et al., 2016; Strayer, 2012;) was presented by one of the curriculum experts as a necessary pedagogical redesign. A previous paper in the series describes the details of what was of changed and why (Domain 1: the 'what domain'; Willems et al., 2016). Of interest in this study is that innovation was readily adopted through a process of transformative conversations exploring unfamiliar territory, supported from the literature and the expertise of one project member, revealing a collaborative scholarly and evidence-based practice. Meeting 2 was the phase in which traction around growth of collective cultural capital (Bourdieu, 1986) was most apparent.

A significant renewal therefore arose during the following meeting. Meeting 3 led to a group consensus that what was previously upheld as the asset or strength of the subject, the assessments, needed redefining. The details of content change (student creation of personalized career tools, rather than assessment artefacts) were reported previously (Willems et al., 2016), but of significance here is the process of challenge to the status quo for the teaching team.

The notion that foundational career education (consisting of artefacts such as a resume, a career plan and an elevator pitch known as me in a minute, curated via a portfolio approach) became seen as adaptable artefacts and approaches for embedded and scaffolded career education in later years of study was embraced (see Table 2; Faulkner et al., 2013; Kinash et al., 2014). The project revealed the first insights into how employability learning as a journey might be conceptualized beyond the teaching team and the subject itself. The entire project team came to the realization that what the literature had been suggesting about students needing to systematically build employability skills over time (Yorke & Knight, 2006), could be practically possible. Rather than simply submitting an assessment, the team saw the potential of re-visited assessment design - the scaffolding prospect was born, which aligns with the argument that scaffolding WIL curricula is critical for enhancing student employability (Kaider et al., 2017).

This transparency and openness to change amongst the members of the team that taught into the subject was particularly significant during Meeting 4. In-depth discussions relating to the revision of subject learning outcomes (LOs), revealed that it was necessary for the subject team to improve what they perceived was already clearly articulated as the value and purpose of career education to students. This could have resulted in resistance, however, shifts in thinking and practice were observed around the value of employability. An evolution toward career education as an accepted and accessible vehicle for embedded WIL, and toward WIL as the chosen vehicle of enhancing student employability was gaining momentum. Not immediately concrete, but nevertheless crucial, was the surfacing strategic ambition that scaffolded employability could become course-wide.

In Meeting 5, the final meeting, all four members of the (group) recognized the value of the action-research approach to curricula change. This relates to the overall finding that the deliberate choice to re-design Foundational WIL via an action research team-based project, resulted in both expected and unexpected beneficial outcomes. It was instrumental to eliciting both micro and macro enhancements to WIL approaches to curricula. At the micro-level, it changed the subject purpose and thus the pedagogical shift to function as a foundation career education subject. It dialed-up both teaching and professional staff expertise in terms of the design, delivery and strategic thinking needed when considering if, how and when, to include career education as core business across multiple programs in the Faculty. At the macro level, the action-research process resulted in a wider reaching curriculum change; it became core to first year courses, which indicated that the hegemony was shifting toward a new appreciation of WIL within the Faculty. This shift was outside of the formally documented terms of reference for the project. The project provided formal thinking space for making sense of the barriers to WIL in the Faculty, with the unexpected outcome involving a re-vised strategy pertaining to whole-of-course WIL approaches to undergraduate programs.

The action-research process therefore led to collective change. Changes to pre-existing learnings and ideas (due to the scholarly approach), development of knowledge (due to transformative conversations that involved sharing and challenging other's view the world) and shifts in practice (due to critical reflections on lived experiences and future teaching approaches) were evident for the project group and beyond. This growth in cultural capital resulted in an in-depth renewal of the subject itself (content and

pedagogy and assessment design), and an unexpected (but advantageous) outcome, a strategic realignment of the employability agenda across courses. The collaborative, scholarly and evidence-based approach led to a new appreciation of the value of career education strategies (Skorikov, 2007) within the Faculty.

This is how the subject (first introduced into the Faculty in 2013 within a single course and with only 210 enrolments) is now aligned to multiple courses and has had over 10,000 enrolments (Table 3).

TABLE 3: Foundational WIL embedded as a core pre/co-requisite career education subject 2013-2020 in Faculty schools Information Technology, Engineering, Life & Environmental Sciences.

Year	2013	2014	2015	2016	2017	2018	2019	2020
Total enrolments	210	968	957	1447	2044	2270	2530	1843
Compulsory to proportion of courses*	1/20	9/23	7/18	10/17	18/20	18/18	19/19	19/19
Compulsory to % of courses	5	39	39	59	90	100	100	100

*Courses include all undergraduate courses in the Schools listed, including double degrees that are managed by the Faculty.

The target set for 100% of the courses in the three of the four Schools in the Faculty to embed a core zero credit point subject by 2020 was achieved in 2018 (ahead of schedule). At the commencement of 2020, 100% of the 19 undergraduate courses (5 in Information Technology (IT), 9 in Life and Environmental Science (LES), and 5 in Engineering), have the subject as a core, and a course completion rule.

Foundational WIL is now (with a few exceptions) intentionally located within Year 1 of the course map to ensure the students are thinking about their career learning early. The implementation of the course rule, that all students must complete the subject, talks to the educational uptake of the value of embedding of foundational career education from early in the student journey. This policy enables the sustainability of course-wide approaches to WIL curriculum.

A second layer to the sustainable approach (beyond the course rule) was enabled by linking the subject to other WIL subjects and assigning it a co-requisite and/or pre-requisite requirement. This linking of the foundation subject with later core subjects is now in place across all of the three schools in the Faculty (see the first seven columns in Table 4). This allows for scaffolding of the assessments in the remaining two schools (currently underway in engineering and planned in the remaining school to commence in 2021). This has been a significant shift considering that since 2013 (where it was aligned to a single course with no scaffolding), the three assessments (re-vitalized and re-named as career tools – a resume, MIM script and Capacity Building Plan) are now being successfully scaffolded throughout courses at various year levels for two schools (IT and LES; Table 4).

TABLE 4: Evidence of embedding and scaffolding of a career education subject within curricula, and scaffolding of career education assessments across the Faculty as of January 2020.

School	Course	Year and trimester Foundational WIL is offered ¹	Alignment to other subjects in the course, embedded as a 'Co' (co-requisite) or 'Pre' (pre requisite) to another subject.				Scaffolding of career education assessments from Foundational WIL into later subjects. A ✓ indicates that the career tool is revisited within a core subject in that year for development or change												
							Scaffolding of baseline Resume ² tool				Scaffolding of Me in a Minute script ³ tool				Scaffolding of Capability Building Plan ⁴ tool				
						Y1	Y2	Y3	Y4	Y1	Y2	Y3	Y4	Y1	Y2	Y3	Y4		
Information Technology	C1, D1-2	Y1T1	Co	Pre			✓	✓	n/a	✓	✓	✓	n/a	✓	✓		n/a		
	C2	Y1T1	Co	Pre			✓	✓	n/a		✓	✓	n/a	✓	✓		n/a		
	C3	unplaced	Co	Pre			✓	✓	n/a	✓	✓	✓	n/a	✓	✓		n/a		
	C4	Y1T1	Co	Pre			✓	✓	n/a		✓	✓	n/a	✓	✓	✓	n/a		
	C5	Y1T1			Pre		✓	✓				✓		✓	✓		n/a		
Life and Environmental Sciences	C6	unplaced	Pre	Pre			✓	✓	n/a		✓	✓	n/a		✓		n/a		
	C7	unplaced	Pre	Pre			✓	✓	n/a			✓			✓		n/a		
	C8	Y1T2	Pre						n/a			✓	n/a		✓		n/a		
	C9	L2T2	Pre	Pre				✓	n/a			✓			✓		n/a		
	C10	unplaced	Pre	Pre				✓	n/a			✓	n/a		✓		n/a		
	C11	Y1T2	Pre	Pre				✓	n/a			✓	n/a		✓		n/a		
	C12	Y1T2	Pre	Pre				✓	n/a			✓	n/a				n/a		
	C13	Y1T2		Pre				✓	n/a			✓	n/a				n/a		
	C14	Y1T2	Pre	Pre				✓	n/a			✓	n/a		✓		n/a		
Engineering	C15	Y1T1	Co		Pre														
	C16	Y1T1	Co		Pre														
	C17	Y1T1	Co		Pre														
	C18	Y1T1	Co		Pre														
	C19	Y1T1	Co		Pre														

¹ Y indicates year within the course, T indicates which of three trimesters within that year

² Purpose of tool: to increase the students chances of securing an interview for a self-sourced placement

³ Purpose of tool: to gain confidence in articulating course-to-employment aspirations, interests, professional capacity, and personal brand value for employers

⁴ Purpose of tool: to develop student ability to create action plans for identifying and securing placement opportunities via a self-awareness process relating to their employability skills.

The philosophy of action research, to seek and enable change via cyclical and iterative actions based on research (Reason & Bradbury, 2001), was useful to the successful formation of the community of practice, the plan for transformation, and the subsequent subject renewal outcomes. The linking of a scholarly approach, to the reflective practice on previously lived experiences, plus a designated pause moment (Hains-Wesson & Young, 2017) to process meanings, lead to an improved expertise in the project team. The cross fertilisation of unique experiences and perspectives, supported by research, gave credence to the creative endeavour. In addition, the methodology enabled a cultural transformation towards employability education in the Faculty that could not have been predicted at the onset of the project. The looping nature of research/scholarship and findings throughout the meetings (and in between those formal phases), lead to Faculty-wide contextualised contemplation and socialisation of the CoP findings. Without the positioning frame of the action-research exploration: 1) a scholarly approach, 2) critical reflections on personal lived experiences, and 3) a collective process for making meaning for the Faculty's strategic position of enhancing employability education, then we believe the transformation would have been contained to the subject only. Instead, what resulted was a Faculty-wide consideration of how to best begin the vertical and horizontal scaffolding of employability enhancement for students. The act of re-visiting the subject resulted in the need for designated embedded career-education curriculum touchpoints.

By anchoring the project to an action research methodology and incorporating the sort of evidence-based approach sought by STEM academics (Hains-Wesson & Young, 2017), the value of possible career education inclusions gained credibility and thus traction in the core curriculum. The overall approach overcame initial challenges in convincing STEM academics that qualitative data analysis using reflective practice was a reliable approach and methodology (Harvey et al., 2019). The quantitative data (Table 4) punctuates the eventual cultural change. The action-research process was an instrumental element of micro and macro cultural capital transformations (Table 1 and Table 2). The results from Table 3 and Table 4 indicate that action research project enabled course-wide change, all of which are contributing to sustainable and future enhancements pertaining to the Faculty's long-term employability agenda.

The project enabled capacity building on student learning design in WIL (Kay et al., 2018), an understanding of diversity in WIL assessment design (Hodges et al., 2014; Hoskyn et al., 2016), and an awareness and openness to non-traditional teaching models (Scott, 2016; Young et al., 2019). The CoP approach (Seyednazari, 2018) combining expertise of academic (both WIL and non-WIL) and professional staff, facilitated the effective subject overhaul detailed in Willems et al. (2016).

Changes in practice were demonstrated because of the resourced educational activity both as a process for capacity building of practitioners and as a formal process for enabling effective curriculum change. One follows the other, once academic capacity to design and deliver WIL approaches is built, micro and macro curriculum shifts can more readily arise. The mainstream milieu which includes how academic practices operate both in the WIL domain, and alongside mainstream STEM curricula in higher education can co-exist to collectively enhance student employability. What follows next are the overall improvements to quality curriculum standards.

In summary, the key outcomes of the deliberate choice to utilise an action-research methodology in a distributed leadership team-based project designed to renew a WIL subject include:

1. how a single subject re-design can function as a capacity building exercise (demonstrated via the transformative critical conversations leading to pedagogical shifts in thinking and practice beyond placement-based WIL champions),
2. course-wide changes to accommodate scaffolded curricula (demonstrated via the adoption of a foundation career subject and linked to later career education assessments and subjects),
3. scalable and sustainable whole-of-faculty approaches to WIL curricula (demonstrated via a subject+ mindset that legitimising the value of strategies to enable the scaffolding of career education), and
4. mobilizing of educational policy and institutional strategic goals around WIL (demonstrated by sustainable inclusions of employability learning across multiple contexts in the faculty).

In short, the growth in academic expertise towards WIL approaches to curricula and particularly career education assessments is substantial. The project exemplifies how intentional curriculum-led projects can be leveraged to align with institutional targets for building the professional capacity of academics to design and deliver quality WIL programs (Kay et al., 2018; Winchester-Seeto, 2019). The scholarly approach to the project also ensures that the upskilling of academic staff has a wider reach beyond the case study and into employability agendas across the sector, through community of practice forums (e.g., Scholarship of Teaching and Learning) and publications. The action-research approach has facilitated the demonstration of a valid mechanism of quality assurance (QA) and quality improvement (QI) for a WIL subject, satisfying Tertiary Education Quality and Standards Agency requirements (TEQSA, 2022).

The case study evidences change, with the caveat being that the project was not the sole reason for gains in cultural capital. Some of this change is owed to broader intrinsic and existing institutional values such as:

1. educational policies that resource support for project-led curriculum interventions,
2. championing academics working at the coal-face of placement-based WIL subjects to drive change for course-wide inclusions,
3. WIL strategies that foster innovations pertaining to curriculum interventions such as foundational career education principles to be embedded from the first year of a student's WIL journey; and
4. a culture in the faculty of action-research approaches affecting change (Young et al., 2017; Young et al., 2019).

This cultural milieu became obvious during post project review reflections. What this study does do is demonstrate the long-term causal relationship between the fostering of change and faculty-wide curriculum shifts via an action-research. For the faculty, a grass roots approach to curriculum renewal has been one of the many enablers for curriculum enhancement. In short, the culmination of subject, course and then faculty-wide evidence of change suggests that a purposeful curriculum project, can be an effective mechanism for transformation for and to changes in personal and collective cultural practice.

CONCLUSION

The action-research project methodology, grounded by a scholarly approach, improved academic practice not only for the subject under review but, subsequently, for many other subjects across the Faculty. Curriculum-based interventions using action research project approaches, may again prove effective for continuing to build the cultural capital and expertise around WIL approaches, needed

when shifting traditional conceptions of curricula. The key finding to this case study at hand for those considering strategic re-direction relating to teaching and learning WIL drivers, is that the building of staff capacity is central to growing the cultural capital and thus enlivening course-wide curriculum enhancements and even institution-wide strategic change.

This case study contributes to the growing scholarly evidence that associates WIL and the enhancement of student employability (Sachs et al, 2016; Rowe & Zegwaard, 2017). While this study outlines the needs and outcomes of one faculty within an Australian university, the wider research and future practice implications for local and international audiences, is that preparing students for their future worlds of work, is an international concern (Universities Australia, 2019). One of the obstacles to solving this problem is that many academics self-report as lacking the capacity to design and deliver WIL curricular (Kay et al., 2018). The guiding question then is not what, but how to enable transformation.

The process of undertaking an action research approach has wider implications than the significant Faculty-wide change reported here. While WIL programs offered may, and should be, nuanced (because WIL needs to be fit for purpose to the university), any decision to enliven WIL as the vehicle for employability enhancement requires a rigorous process for systematic and substantiable curriculum change. Faculty change began with the up-skilling of WIL champions (innovators) and WIL adopters within the project, so that cultural capital spilt out and into core subjects. This affected Faculty-wide subject shifts and a strategic re-consideration for how scaffolded employability learning could be enabled in the lived curricula. While this change assumed the article of faith that career education is a quality indicator of WIL (Smith et al., 2016), what proved invaluable as a first step for enabling curriculum shifts for both the WIL champions and adopters, was the way in which the action-research process itself, grounded by a scholarly, context-specific, practice-informed approach, became the trusted process of building cultural capital towards embedded and scaffolded WIL more broadly. Using an action-research approach to unpack the obvious and the hidden challenge of any transformation ensures that the myriad of possible curriculum interventions can be contained and thus manageable, and at the same time, robustly explored. The project functions as a protector of the possible curriculum intervention itself, and then when safely explored, can then support wide-reading sustainable reform.

The course data supports this outcome, evidencing how the enhancements have directly affected delivery across the lived curricula for the entire Faculty. The embedding of the core zero-credit point subject, and the scaffolding of the three assessments throughout courses in two schools align with the commonly shared strategic drive to embed (Jackson, 2015; Smith et al., 2014) and scaffold (Jackson, 2015; Smith et al., 2014) WIL into undergraduate degree programs within Australian universities to enhance employability outcomes. It provides supporting evidence for the argument that employability enhancements are most effective if course-wide employability-related learning outcomes are valued, planned for, and delivered (Oliver, 2013).

Future research is commencing at the institutional-level on the impact of course-wide curriculum interventions relating to employability enhancement. Such investigations can then inquire as to the impact that WIL policy and practices, directed specifically at embedded and scaffolded career education, may have on the reputation of a course in terms of providing employability, career, work, graduate, and general future readiness, for diverse undergraduate student cohorts.

The intention is to continue to use action-research approaches to drive similar future curriculum interventions pertaining to career education enhancements, but adding evaluation of WIL (Rowe & Zegwaard, 2017) into the mix.

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About the Journal

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

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

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

The Journal is ongoing financially supported by the Work-Integrated Learning New Zealand (WILNZ; www.wilnz.nz), and the University of Waikato, New Zealand, and received periodic sponsorship from the Australian Collaborative Education Network (ACEN) and the World Association of Cooperative Education (WACE).

Types of Manuscripts Sought by the Journal

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

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

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

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