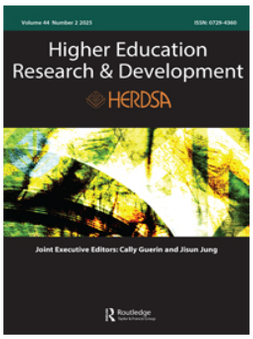

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Defining and designing work-integrated learning curriculum

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ABSTRACT

The scope of work-integrated learning (WIL) has expanded and evolved globally and is a recognised pedagogy that enhances graduate employability, strengthens students' personal attributes, and affords a personalised learning experience. Despite abundant research and discourse on WIL, misconceptions about what WIL is and how WIL educative experiences are enacted continue to prevail, partially due to the absence of a universal definition of WIL. The purpose of this paper is to provide insights into WIL curriculum design and educational practices that reflect a recently published inclusive definition of WIL. The importance of pre- and post-WIL for optimising outcomes during WIL is emphasised. A framework for conceptualising the enactment of the WIL curriculum is presented that preserves the flexibility of WIL while establishing a consistent interpretation of what WIL curriculum entails. Consensus on the defining elements of WIL and its enactment will facilitate stronger global collaboration, shared teaching ethos, augmented research impact, and agreement on what constitutes quality WIL.

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Work-integrated learning;; curriculum;; quality; educational design; higher education

Introduction

Over the last two decades, work-integrated learning (WIL) has become a dominant feature of higher education. As research into WIL practices has intensified and the development of theoretical frameworks that underpin WIL have been prioritised, the scope of WIL has expanded and evolved (Ferns & Arsenault, 2023). The realisation that WIL pedagogy affords a unique student experience that potentially develops employability skills (Brewer et al., 2020), strengthens student agency and self-regulation (Ruskin & Bilous, 2022), builds personal attributes and citizenship (Patrick et al., 2022), and nurtures career development (Zegwaard & Coll, 2011) has prompted WIL practitioners to develop a range of WIL models. The involvement of external stakeholders is a key feature of this educational approach, adding to the complexity of WIL design and

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implementation. Despite advances in understanding WIL, there are misconceptions about what WIL is and how WIL educative experiences are enacted in practice.

While there is abundant discussion around WIL and consensus that experiential learning is core to WIL, a concise definition outlining the parameters of what constitutes WIL has been elusive until recently (Zegwaard et al., 2023). While a benefit of WIL is its flexibility to shape learning experiences that accommodate individual nuances (Adams & Jones, 2022), past variation in WIL definitions has caused stakeholder confusion, and prompted diverse interpretations of what is and is not WIL (Zegwaard et al., 2023). The formation of a coherent definition of WIL coupled with tangible WIL quality frameworks provide important foundations for WIL curriculum design, assessment models, and the student experience. The purpose of this paper is to identify a quality WIL curriculum, relevant teaching, and learning practices that optimise outcomes for students. To clarify terminology, throughout this paper, pre-WIL refers to preparation for WIL, WIL refers to the educational approach whereby students engage with an external stakeholder to undertake authentic and meaningful tasks, and post-WIL refers to synthesising learning from the experience during or after WIL (e.g., reflection, debriefing). Pre-WIL and post-WIL are not WIL per se (i.e., pre- and post-WIL are not the authentic and meaningful tasks that occur in partnership with an external stakeholder), however, collectively these three components comprise the WIL curriculum.

Higher education institutions with strategic imperatives that prioritise the student experience, development of students' employability capabilities, and external partnerships are integral to economic, social, and political well-being (Schneider & Preckel, 2017). This is more pressing in the aftermath of COVID-19 and the need to reinvigorate the economy and adapt to the changing workplace interface. Government incentives, regulatory mandates, and industry needs are driving educational institutions to produce work-ready graduates equipped with skills such as problem-solving, critical thinking, empathy, and communication (Gardner & Perry, 2023), deemed essential for a sustainable workforce.

A curriculum design that embraces WIL pedagogy in partnership with external stakeholders where the student experience incorporates industry/community engagement, the integration of theory and practice, and involves meaningful and authentic work-related tasks (Zegwaard et al., 2023) is globally acknowledged as a strategy for advancing students' employability and increasing the likelihood of career-ready graduates (Jackson & Cook, 2023). Curriculum provides a sequenced blueprint of the skills and knowledge students will acquire across a programme and is core to the principles and philosophy that inform teaching practice (International Bureau of Education, 2017). Curriculum specifies the standards of achievement and incorporates assessment design and instructional/teaching methodologies aligned to learning outcomes (Stark & Lattuca, 1997). With a focus on WIL pedagogy in higher education, guidance on the design of the WIL curriculum and the ethos underpinning WIL learning experiences is a priority.

Work-integrated learning: employability, career development, personal attributes

WIL supports students in achieving a range of learning outcomes, including the development of employability skills, and career and personal development (Ferns et al., 2022; Zegwaard & Rowe, 2019). This is achieved through diverse workplace/community experiences (Kay et al., 2019; Piggot & Winchester-Seeto, 2020; Rowe et al., 2023). Experiences are

underpinned by carefully designed curricula that prepare students for WIL (Adams & Jones, 2022; Winchester-Seeto & Rowe, 2023). Preparation for WIL supports the attainment of student learning outcomes including development of skills and agency so they can independently progress careers and contribution to society (Billett, 2009; Ferns et al., 2022; Rowe & Zegwaard, 2017). Recent scholarship has critiqued discourses relating to WIL and graduate employability, arguing that the meaning ascribed to these concepts is vague, calling for more precise descriptions that have an integrated perspective (Björck, 2021).

History of work-integrated learning

WIL as an educational approach is not new, for example, apprenticeship models can be traced back to Imperial Rome (Westermann, 1914). However, the term WIL first appeared in the literature in the 1990s (see, e.g., Barrett et al., 1998; Coll, 1996), with the earliest discoverable mention of WIL being in WACE's[1] mission statement: 'by the year 2000, WACE will be viewed as a highly valued leader in enhancing work-integrated learning world-wide' (as quoted by Bradford, 1995, p. 9). Since then, the use of the term has increased in frequency and was described as an umbrella term for a range of similar approaches that are described using different terms (Patrick et al., 2008).

Theoretical perspectives

The educative practice of WIL draws upon a range of long-standing theories of learning, emphasising the integration of cognitive, social, and cultural/environmental factors. Piaget's cognitive development theory attests that learners acquire knowledge, adapt existing knowledge to accommodate new knowledge, and assimilate new understandings into their overarching conceptual framework, thereby broadening their knowledge schema (see, e.g., Piaget, 1985). Bandura (1986) advocates for the value of learning from and with others, a key learning dynamic of WIL. His Social Learning Theory specifies learning via observation, imitation, and modelling. Lave and Wenger (1991) built on the work of previous theorists and introduced situated learning as an educational construct where communities of practice are the catalysts for learning in interactive, collaborative, and socially connected environments. Kolb's (1984) experiential learning model and Schon's (1983) theorising on reflective activity highlight experience, reflection, conceptualisation, and 'immersion in doing' as integral dimensions of WIL.

These learning theories (Table 1) provide a sound theoretical basis for designing and enacting a WIL curriculum. While the overarching construct of theoretical frameworks assumes that learning experiences are predictable and methodical, authentic learning experiences inherent in WIL generate a capricious, 'messy', and non-linear learning dynamic (Carpendale & Mitchell, 2023; Twomey & Pretti, 2023). Multiple theoretical perspectives are needed to account for this complexity and the variations of WIL approaches/models. While many theories pre-date WIL, Table 1 shows how these theories have been applied in WIL scholarship.

Research into work-integrated learning

WIL is underpinned by a body of evidence-based literature, with significant expansion over the past 10 years (see Ferns et al., 2022; Zegwaard, 2015; Zegwaard & Pretti,

Table 1. Key theoretical perspectives of learning that underpin WIL.

Name of theory	Descriptions of theory	Application of theory to WIL	Citation
Theory of progressive education	Learning occurs through psychological and social processes where motivation is the driver.	Students 'learn through doing' by engaging in real experiences and social interactions.	Dewey (1897)
Cognitive-development theory	Learners accommodate new knowledge in existing schemas.	Experiences are scaffolded to enable progressive development of students' skills and knowledge.	Piaget (1985)
Social learning theory (later named social cognitive theory)	Knowledge is developed through observing the behaviours of others, interactions, and experiences.	Students observe behaviours of professionals in the workplace and adopt these behaviours.	Bandura, 1977 (social learning theory). Bandura, 1986 (social cognitive theory)
Situated learning theory	Learning is situated in authentic environments. Learning occurs through community interaction and collaborations in socially constructed environments.	Students learn whilst situated in or alongside the workplace and professionals.	Lave (1991) Lave and Wenger (1991) Wenger (1998)
Socioculturalism	Learning is a social process where knowledge and skill development occurs through interactions with others.	Students learn through social interactions within the workplace or with external stakeholders, acquiring skills and knowledge relevant to the workplace context.	Vygotsky (1978) Engestrom (1999)
Reflective practice	Introduces the concepts of reflection-in-action and reflection-on-action.	Students reflect on their practice in or alongside the workplace, gaining new learning to be applied to future practice.	Schon (1983) Gibbs (1988)
Experiential learning	Abstract concepts are developed, tested and revised through experience, reflection, conceptualisation, and active experimentation.	Students learn as they engage in and reflect on workplace tasks and experiences.	Kolb (1984) Dewey (1938)
Transformative learning theory	Learning occurs through the experience of disorienting dilemmas which challenge beliefs, and prompt changes to thinking based on new information.	Students engage in and reflect on new experiences that challenge prior thinking and understanding of practice in their discipline of study.	Mezirow (1990)
Organizational theory	Sense-making and socialization within an organizational structure.	Students make sense of workplace dynamics and the social fabric of organizations to adapt and develop workplace behaviours.	Van Maanen and Schein (1979) Senge (2006)
Critical pedagogy	New perspectives are developed through challenging established assumptions related to dominant power structures and inequities.	Students observe and engage with social structures in meaningful settings with authentic social challenges, develop agentic behaviours to modify their surroundings to achieve fairness and equitable outcomes.	Freire (2017) Giroux (2020)

2023a; Zegwaard & Rowe, 2019). This scholarship, both empirical and theoretical, has informed advances in WIL practice such as the realisation of innovative models (Kay et al., 2019), changes to assessment design and practices (Ajjawi et al., 2022; Ferns & Zegwaard, 2014), student preparation for WIL (Rowe & Winchester-Seeto, 2021), and the development of quality frameworks that underpin approaches to programme design and evaluation (Campbell & Pretti, 2023; Marlow et al., 2022; Smith et al.,

2022). More recently, there have been advances in methods for researching WIL (Fleming & Zegwaard, 2018). Current research trends include digital advances, Indigenous WIL, the impact and efficacy of diverse models of WIL, student inclusion and equity, and interdisciplinary WIL (Ferns et al., 2022; Zegwaard & Pretti, 2023b). While widespread research in WIL has enhanced practice and increased engagement in WIL, this paper aims to clarify what WIL is and what the WIL curriculum consists of (pre-WIL, WIL, post-WIL), thereby providing a firmer foundation for future research and development.

Definitions of work-integrated learning

With successful outcomes reliant on partnerships with multiple stakeholders, WIL is a complex construct that must afford flexibility and be underpinned by prudent educational design. Unpacking the definition of WIL and identifying the elements that define and differentiate WIL from traditional teaching methodologies provides insight into WIL curriculum design and the student experience.

The WIL literature contains definitions that conceptualise WIL within the context of a research study or particular practice setting (Zegwaard et al., 2023).

Examination of definitions of WIL within the literature identified several reoccurring themes:

- integration of theory with practice (Coll et al., 2009; Coll & Zegwaard, 2011; Cooper et al., 2010; Martin et al., 2011; Smith et al., 2014; Winchester-Seeto et al., 2016),
- within the curriculum (Patrick et al., 2008; Smith, 2012),
- an educational strategy and a focus on learning (Billett, 2009),
- authenticity and meaningfulness of the tasks students undertake (Coll & Zegwaard, 2011; Cooper et al., 2010; Smith, 2012; Smith et al., 2009; Smith et al., 2014),
- relevant to students' study (Coll et al., 2009; Smith et al., 2009),
- relevant to career/profession (Billett, 2009; Coll et al., 2009; Martin et al., 2011; Smith et al., 2009),
- time spent in a professional practice setting (Billett, 2009; Coll et al., 2009; Coll & Zegwaard, 2011; Cooper et al., 2010; Martin et al., 2011; Smith, 2012; Smith et al., 2014), and
- involving an external partner (Coll & Zegwaard, 2011; Groenewald et al., 2011; Winchester-Seeto et al., 2016).

Variations in these defining elements underpin terms used to describe models of WIL (e.g., work placement, internships, co-ops, apprenticeships, consultancies). Several typologies (e.g., Fincher et al., 2004; Kaider et al., 2017; Rowe et al., 2012) and frameworks (e.g., Groenewald et al., 2011; McRae & Johnston, 2016) propose a shared understanding of the meaning of each term, however, in practice the terms are used inconsistently.

Zegwaard et al. (2023) explored definitions of WIL and provided a detailed analysis of the common defining elements, along with supporting literature. The authors offered an overarching definition of WIL that incorporates the common defining elements and is inclusive of non-placement models of WIL (Box 1).

Box 1. The definition of work-integrated learning and details of the defining elements (Zegwaard et al., 2023, p. 39).

An educational approach involving three parties – the student, educational institution, and an external stakeholder – consisting of authentic work-focused experiences as an intentional component of the curriculum. Students learn through active engagement in purposeful work tasks, which enable the integration of theory with meaningful practice that is relevant to the students' discipline of study and/or professional development.

- ***An educational approach***: intentionally supports student learning through a range of practice models.
- ***Involving three parties; the student, the educational institution, and an external stakeholder***: all three stakeholders are engaged in the experience, where the external stakeholder, or host organization, can be an employer, client, community organization, government agency, or an educational institution (where the educational institution is an employer or client).
- ***Authentic work-focused experiences***: tasks undertaken by the student are related to activities expected at a place of practice (e.g., a workplace, a community, or remotely online with an external stakeholder).
- ***Intentional component of the curriculum***: either curricular or co-curricular but not extracurricular. By definition of curricular and co-curricular, the student learning outcomes must be assessed.
- ***Students learn***: there is an emphasis that the student, while engaging with the tasks, is learning through doing.
- ***Active engagement in purposeful work tasks***: the student is an active participant (i.e., not an observer) within the context of the place of practice to which the tasks are intended to be purposefully applied.
- ***Integration of theory with practice***: applying, critiquing, and forming opinions about principles, theories, and knowledge learnt through formal teaching to authentic practice.
- ***Meaningful practice***: the tasks are work-based and relevant to the student and have relevant purpose for the external stakeholder, whereby the student engages with the tasks in a similar way to that expected of a working professional.
- ***Relevant to the students' discipline of study and/or professional development***: the experience supports and correlates to the student's knowledge and skill development requirements as part of their study and/or career interests.

Roles of stakeholders

Involvement of partner organisations distinguishes WIL from other models of education (Zegwaard et al., 2023), and the role that organisations and the supervisors/mentors play is crucial to quality WIL experiences (Ferns et al., 2016). With work placement models of WIL (e.g., cooperative education, internships, practicums), students typically become immersed members of the partner organisations and are involved in the day-to-day operations of the organisation. In non-placement WIL (e.g., consulting projects), the role of the partner organisation is often to provide a relevant and meaningful problem to be solved by students (Brewer et al., 2020). In both placement and non-placement WIL, partner organisations are seen as co-educators with the academic institution, providing direction for students' learning, feedback, and often assessment of students' skills and/or finished work (see, e.g., Rook & Dean, 2023).

While WIL is typically viewed as a tripartite relationship between academic institutions, industry/community partners, and students (Ruskin & Bilous, 2020), there are at least two other key partners in the WIL ecosystem that need to be considered: associations and government bodies (Campbell & Pretti, 2023; Ferns & Arsenault, 2023). Associations relevant to the WIL ecosystem include those that support and advocate on behalf of any of the WIL stakeholder groups (Ferns & Arsenault, 2023). For example, student, professional, higher education, industry, and community associations. These associations may be regional, national, or global in their scope and may be focused on WIL or have WIL as an area of interest as it relates to their mandate. For an industry

or community association, they may see WIL as a mechanism for their members to access talent. For a student association, they may have an interest in ensuring equity and access to WIL programmes for their members. For higher education associations, they may be focused on supporting WIL educators in their development and operation of quality WIL programmes.

Defining elements and educational designing

Authentic and meaningful work-focused experiences enable students to develop the skills and knowledge needed to connect theory with authentic practice (Rowe et al., 2022) and thus support subsequent graduate employment. WIL activities occur on a spectrum between high and low authenticity and proximity, that is, how closely they reflect workplace/professional tasks (authenticity) and contexts (proximity) (Kaider et al., 2017). Examples of highly authentic and proximal experiences include internships, work placements, and cooperative education where students work alongside or within workplaces/community organisations to complete work relevant to the organisation and the profession more broadly. The efficacy of this approach is supported by research that indicates placements have a larger impact on employability outcomes than simulation and career-development learning (Jackson & Cook, 2023; Smith et al., 2014). However, recent research suggests the relationship between the model of WIL and learning outcomes is more complicated.

Further to the need for authentic and meaningful work-focused experiences, to maximise learning outcomes, it is essential that students are active participants and not passive observers. Students are thus proactive players in constructing knowledge through exploration, distilling, and transforming information, and accommodating new information in social learning contexts (Bada & Olusegun, 2015). In practice, this might involve students independently sourcing and securing their own WIL experience, practising professional skills (e.g., writing reports, undertaking research), problem-solving and information sourcing, and engaging in day-to-day practices, to better understand the requirements and culture of the workplace and professional tasks. According to Billett (2015), 'the more motivated, directed, and intentional the students' engagement, the more likely the learning outcomes will be richer' (p. 212).

Designing education for work-integrated learning

Embedding WIL requires a curriculum design that affords flexibility to enable students to pursue areas relevant to their interests, disciplines, and career aspirations (Ferns et al., 2014), within a defined framework where the learner is guided, supported, and prompted as appropriate (Winchester-Seeto & Rowe, 2023). Partnerships with students are pivotal to enacting student learning through WIL to empower students, facilitate student engagement and motivation, and encourage self-regulated learning (Lim et al., 2018), and should ideally embrace a 'whole of person' approach that prepares students for future uncertainty and volatility (Rowe et al., 2022). Learning experiences that equip students with resilience and lifelong learning skills are integral to well-being and success. A holistic curriculum premised on the student as a partner in their learning journey, cooperative industry/community partnerships, and globally relevant learning experiences

enables autonomous discovery learning, sense-making, peer collaboration, and collective problem-solving. Embedding WIL in curriculum accommodates diversity, promotes student agency, enhances student outcomes, and facilitates progressive development of skills and knowledge. The role of the educator thus shifts from delivering content to a facilitator of learning in a WIL dynamic (Brewer et al., 2020).

While the essence of WIL is experiential, learning is positioned within 'an intentional discipline-centred curriculum' (Ferns et al., 2014, p. 2) where theoretical aspects of the discipline are grounded in practice-based learning inherent in WIL. Students progressively develop the intellectual capacity to apply complex discipline knowledge and technical skills to real-world situations, while concurrently strengthening personal attributes (Ferns et al., 2014). Transformation is afforded through gaining varied insights and seeing the world through a different lens. Students solve problems through shared perspectives, and challenging assumptions and biases with critical reflection about the process. Recognising what was learned and how it was learned is fundamental to a shift in thinking (Kitchenham, 2008). The transformation includes both individual and social transformation given the inherently social environment of WIL. It is essential to create a 'safe' place for students to make mistakes and identify what they would do differently in future.

Student preparation prior to WIL experiences (pre-WIL) and opportunities to reflect and debrief after WIL experiences (post-WIL) is integral to student engagement, motivation, and successful outcomes (Smith et al., 2014). While preparation and debriefing are not WIL, they are important components of the WIL curriculum (pre-WIL, WIL, and post-WIL) as they connect learning and position students to optimise the value of WIL experiences.

Assessing 'unpredictable, variable, and socially constructed' outcomes of WIL curricula require a continuum of tasks comprising opportunities for regular and meaningful feedback on student performance (Ferns & Zegwaard, 2014, p. 179). Self- and peer-assessment are integral to successful WIL outcomes as they build student agency and ownership and encourage a learning community premised on collaborative learning. Assessment for learning enables self-awareness and incremental development. Reflective tasks, eportfolios (Ferns & Comfort, 2014), and collaborative problem-solving with a focus on process rather than product, promote self-directed learning and an emergent professional identity.

Framework for learning through work-integrated learning

Cooper et al. (2010) and Rowe and Winchester-Seeto (2022) argue that the learning before and after WIL is essential and an important enabler for enhancing learning during WIL. The literature often describes this additional required learning as 'preparation' (Winchester-Seeto & Rowe, 2023) or pre-WIL (Dean et al., 2023), and post-WIL reflection (Smith et al., 2016), and directly link these additional components to a holistic WIL learning experience.

Educator's perspective

A defining element of WIL is the authentic learning activity with an external stakeholder. However, to ensure effective student learning through WIL, learning outside the WIL activity is required. These additional student learning activities should be considered

as part of the WIL curriculum and essential for supporting student learning. Considering the WIL literature and the underpinning theories of learning (Table 1), how the components of a WIL curriculum look in practice can be presented within a framework of learning through WIL (Figure 1). When designing the WIL curriculum, educators need to consider health and safety, student well-being, stakeholder engagement, and legal requirements through all stages of the WIL curriculum (pre-WIL, WIL, and post-WIL). Appropriate assessment activities, WIL opportunities, and post-WIL reflection activities, in addition to any discipline-specific aspects (e.g., accreditation requirements, additional well-being support, international travel consideration) are also important considerations.

Student's perspective

Students' learning through the WIL curriculum can be generalised and mapped onto the different stages of learning and development during pre-WIL, WIL, and post-WIL (Figure 2). For example, prior to WIL, students are preparing for learning, creating their professional profile, and setting learning goals. During WIL students are learning through doing, developing their professional profile, and completing learning goals. After WIL, students are reflecting on their learning, updating professional profiles, and updating learning goals in preparation for the next learning experience.

Reflection plays a critical role in students' personalised learning afforded through WIL curricula. It enables the learner to interact with the experience and individualise outcomes (Hodges, 2011), and promotes a sense of ownership and responsibility of the

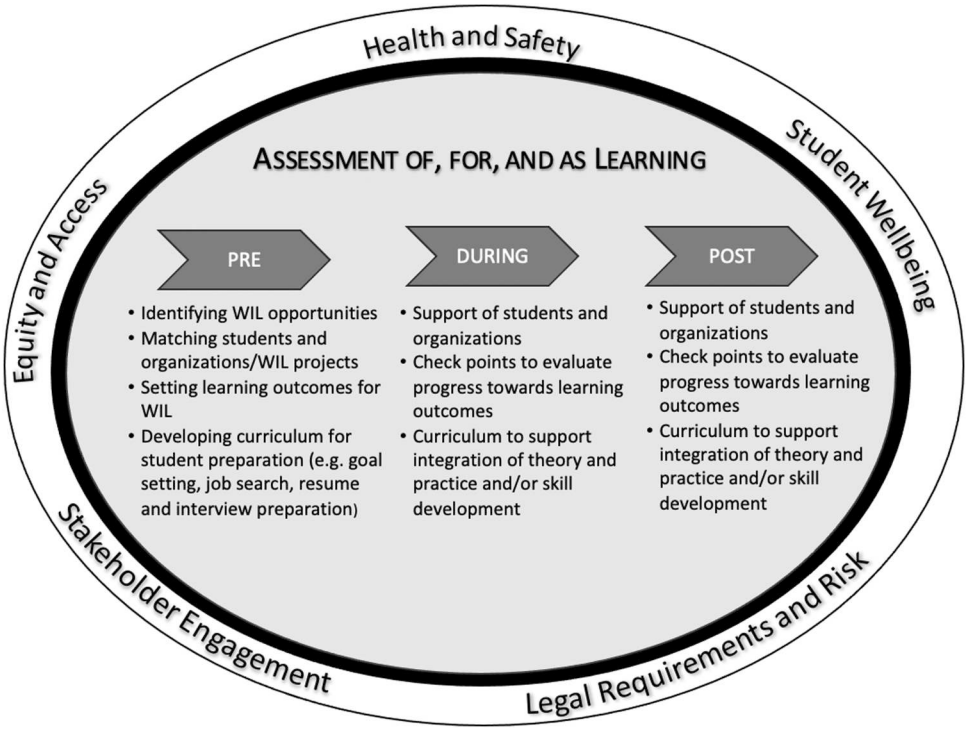

Figure 1. WIL curriculum – educators' perspective of pre-WIL, WIL, and post-WIL.

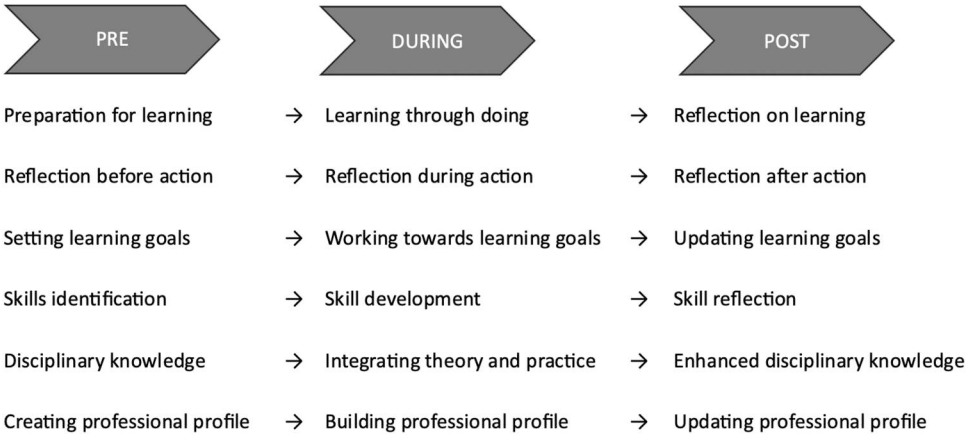

Figure 2. WIL curriculum – students' perspective of pre-WIL, WIL, and post-WIL.

learning (Helyer, 2015). Based on Schon's (1983) work on reflective learning, the stages of reflection (before, during, and after) can occur through smaller, iterative occurrences around single events within each stage of the WIL curriculum. However, reflective practice can also be embedded more broadly through the WIL curriculum as reflection before action occurring during pre-WIL activities, reflection during action occurring whilst the student is engaged in WIL, and reflection after action occurring through, for example, post-WIL debriefing.

With WIL defined as the learning activity students undertake with an external stakeholder within an authentic and meaningful context, the framing of the WIL curriculum from an educator and student perspective provides further clarity around the WIL curriculum. In some contexts, and for different models of WIL, the emphasis on each element may vary, however, within quality practice, each element should be scaffolded through the WIL curriculum.

Conclusion

Governments and society have increasing expectations of employability outcomes for higher education students. With the current international economic slowdown, expectations of employability outcomes will increase further, placing pressure on educational institutions to explicitly evidence such outcomes. Furthermore, with rapid societal changes in response to advances in technology and artificial intelligence, it is increasingly important for higher education institutions to adapt, by closely aligning and integrating with wider society and workplaces. That is, more learning needs to occur 'within' the changing world not 'alongside' the changing world, where society, employers, and other external stakeholders are partners in student learning. By exposing students to the practice of their discipline in authentic settings early in their studies, and repeatedly during their studies, students will more quickly adopt and adapt to the changing practice of their discipline and contribute towards the evolution of the workplace. Components such as stakeholder partnerships, authenticity, purposeful, integration, assessment design, and active engagement, explicit in the WIL definition are crucial to the successful

development of the WIL curriculum, and shape the roles of students, teachers, and external stakeholders.

Optimal learning during WIL must be appropriately supported through pre- and post-WIL learning. It is, therefore, imperative that the student experience is enhanced through direct engagement with authentic practice through quality WIL curriculum as outlined in this paper. It is the authors' intention that this paper informs the development and implementation of quality WIL curriculum to further enhance students' employability.

Note

1. WACE = the World Association of Cooperative Education, now formally known as WACE. WACE is the international association for work-integrated learning.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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