WORK-INTEGRATED LEARNING IN HIGHER EDUCATION: A CATALYST TO ENHANCE GRADUATE EMPLOYABILITY

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Abstract

Work-Integrated Learning (WIL) has become a vital pedagogical strategy for closing the knowledge gap between theory and practice in higher education. The approach underscores the importance of outcome-based learning compared to conventional, teacher-centered approaches. WIL emphasises students' competency development, including reflective thinking, problem-solving abilities, teamwork, and interpersonal skills relevant to contemporary workforce development. It encompasses both active and experiential learning. Using a systematic search process in Scopus database, work-integrated learning research papers in higher from 2002 to 2024 were identified and downloaded. Specific focus was placed on the engineering-related research papers. Based on the literature review, this paper examined the key components of effective WIL programmes, highlights the associated benefits, and challenges to its implementation. The findings revealed that institutional support, sustained industry partnerships, and active student engagement are imperative for a successful WIL. Commitment of resources by education providers, capacity development and workload of supervisors at the workplace is identified as a major gap that requires addressing in WIL programme implementation. Furthermore, it is recommended for governments, especially those in developing countries, to have explicit policies on WIL and the requisite strategy on how to effectively mobilise resources for implementation. The study also explores potential areas for future research in WIL.

Keywords— Higher Education, Work-integrated Learning, Skills, Theory, Practice

Introduction

Quality and relevant education facilitates the attainment of sustainable development goals (World Bank, 2021). Specifically, higher education plays a pivotal role in human capital development and helps to foster the attainment of decent work and economic growth. It also correlates positively with socio-economic indicators such as life expectancy, health and well-being and stable income vital for sustainable development (Nedungadi et al., 2024; Raman et al., 2022; UNDP, 2022). As part of transformations in learning processes, Higher Education Institutions (HEIs) are exploring ways to bridge the gap between academic knowledge and real-work application to enhance the employability of graduates (Grant-Smith & Feldman, 2023). Amongst them include Work-Integrated Learning (WIL) which has gained significant traction around the globe for its capacity to address labour market needs. WIL, with its focus on employability, seeks to equip learners with the required competencies and experiences for a seamless transition into the world of work (Lasrado et al., 2023). Work-based learning, practice-based learning, work-related learning, vocational learning, experiential learning, cooperative education, clinical education, internship, practicum, and field education are terms associated with WIL (Stirling et al., 2016).

The concept of WIL approach can be traced back to the education and training model used in the United States during the 1890s involving cooperative learning (Briant et al., 2023). The initial concept focused on blending academic theory with hands-on problem-solving experiences in professional settings. As time progressed, the term WIL emerged in the late 1990s to encompass a wider array of experiences involving partnerships with industry stakeholders. It has now become a prominent feature of higher education systems in many countries, such as United Kingdom, Canada, South Africa, Australia, India, New Zealand, and the United States (Bowen & Drysdale, 2017; Diwakar et al., 2016; Zegwaard & Rowe, 2019). The approach is premised as a mechanism to satisfy industry demands and to offer students tangible returns from higher education (Ferns et al., 2021; Mather et al., 2015; Tezcan et al., 2020). WIL, therefore, represents a collaborative effort among multiple stakeholders to increase the synergy between education, training, and the workforce, with the aim to significantly impact towards the development of a skilled and adaptable workforce.

Therefore, there is a need to raise awareness on WIL including its characteristics, best practices, benefits, and challenges, as it can increase adoption and effective integration within HEIs curricula to enhance employability of graduates. Although WIL continue to gain prominence as part of HEIs curricula activities around the globe, particularly in developed countries, there is little research output of WIL from developing and least developed countries HEIs (Briant & Crowther, 2020; Jackson, 2015a). This paper focuses on dimensions of best practice in WIL, key enablers, benefits and challenges and the need

for further empirical studies. The study also offers a blueprint for other institutions to contextualize the best practices and collectively advance the WIL agenda.

Education theories related to WIL

Work-Integrated Learning (WIL) is founded on the principles of active and experimental learning, as stated in the literature (Bonwell & Eison, 1991; Kolb, 1984). These educational approaches form part of the constructivist learning theory – i.e. students learn by integrating new ideas and experiences with their existing knowledge to develop a deeper understanding of problems or phenomena (Bransford et al., 1999; Diwakar et al., 2023; Nedungadi et al., 2018). Active learning emphasizes a higher order thinking and often involves collaborative work, whereas experimental learning goes beyond just having work experiences, but rather reflecting on those experiences, drawing meaningful insights and being able to integrate the acquired knowledge with practical application (Tynjälä, 2008). Both active and experimental learning emphasized hands-on experience over passive or rote learning. However, many theories have evolved from the theories and have since been associated with work-integrated learning as illustrated in Figure 1 (Stirling et al., A 2016).

Figure 1. Theories associated with work-integrated learning

According to work-based learning settings, learners benefit most when they engage in real-world contexts and tasks, aligning with the idea of situated learning within institutions of practice (Roosipõld et al., 2020). The development of self-regulatory competency empowers learners to integrate theoretical and practical knowledge through pedagogical methods such as reflection and analytical exercises, as illustrated in Figure 2.

Designing effective WIL programmes is recognized as challenging and resource-intensive, with some advocating for significant investment while others stress the importance of leveraging existing resources wisely (Harrison & Ip, 2013). Key considerations include ensuring adequate support and clear expectations from partner industry institutions, as well as incorporating authentic activities aligned with learning objectives and effectively assessing outcomes (Abeysekera, 2006; Smith, 2012). In addition, WIL implementation requires careful attention to various factors and a commitment to providing engaging learning experiences for students.

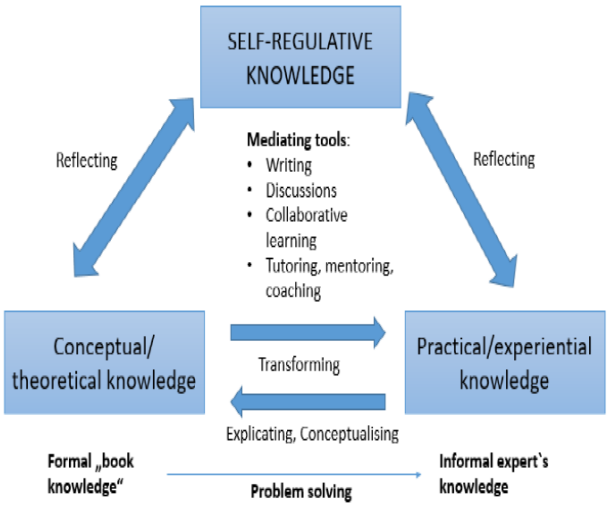

Figure 2. Integrative pedagogics as a model of dual learning at school and at the workplace (Source: Tynjälä, 2008)

Characteristics of Best Practices for WIL Programmes

In line with research studies ((Jackson, 2015b; Maclean & Jagannathan, 2014; O'Shea, 2014)), the key characteristics of best practices in WIL that distinguish it from other learning teaching and learning approaches are stated in Table 1. The highlighted points in Table 1 are not mutually exclusive. For instance, the alignment of assessment with learning objectives is a fundamental feature of WIL best practices. This means creating assessment tasks that

accurately gauge how well students have learned the competencies and targeted learning outcomes for the WIL experience.

Table 1: Characteristics of Best Practices in WIL Implementation

S/N	Aspects of WIL
1	Learning experiences are purely driven by set learning objectives in the curriculum
2	Availability of real-time work environments
3	Implementation of quality induction before students engage in practical work
4	Access to qualified and competent supervisors throughout the work placement experiences
5	Readiness of Industry on the usage of working environment
6	Curriculum guide on classroom-based and workplace learning and skill development
7	Practice experiences are preceded by the proper planning and setting of goals
8	Foster collaborative learning by ensuring self-reflection and exchange of ideas with peers and supervisors
9	Targeted support and guidance for the development of critical reflection skills
10	Align assessments with workplace learning outcomes and competencies
11	Assess and Evaluate WIL programme

The skills, knowledge, and attitudes that students are set to acquire during real-world work placements should reflect in the assessment activities. However, for an effective assessment in WIL, proper scaffolding is required to guide supervisors and students in the workplace environment (Stirling et al., 2016). This includes training for supervisors, proper planning of tasks, and development of critical reflection skills – which helps students to deepen their understanding, enhance their professional growth, and become more effective learners and practitioners in their fields (Sleap & Reed, 2006; Smith, 2012). Furthermore, another characteristic of best practice in WIL is programme review. This involves periodically assessing and evaluating the effectiveness of WIL initiatives to identify areas for improvement to enhance quality and relevance (Winchester-Seeto et al., 2015). It ensures WIL remains aligned with evolving industry needs, pedagogical best practices, and HEI goals.

Review of Studies on WIL

There is a considerable rise in research on WIL in higher education according to the S**copus** database – one of the leading citation and abstraction database for research purposes (Paul et al., 2021; Raman et al., 2023). Figure 2 shows the distribution of 416 research studies

including journal articles, conference papers, reviews, editorials, and others in Scopus from 2002 to 2024; with engineering-related WIL research representing 6.7%.

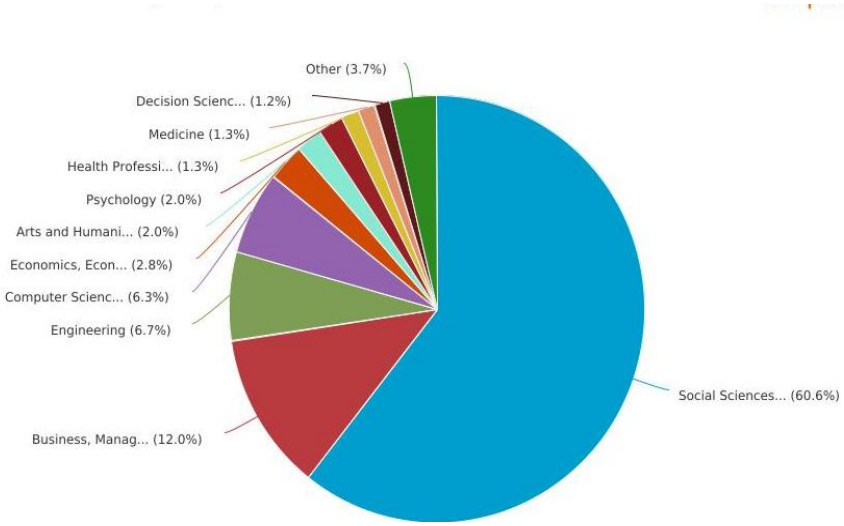

Figure 1: Distribution of research publications from 2002 to 2024, Source: Scopus database with search query: **((TITLE-ABS-KEY (work-integrated AND learning) AND TITLE-ABS-KEY (HIGHER EDUCATION)))**

The following sections highlight the enablers, benefits, and challenges to WIL implementation in HEIs based on findings from selected research publications from Scopus.

Enablers and Benefits of WIL

HEIs must put staff and students' well-being first rather than putting their needs off-kilter as a crucial WIL enabler (Brewster et al., 2022). As a result, to provide high-quality WIL, education and training institutions must have a solid strategic vision and guarantee that the resources necessary for efficient WIL planning, supervision, and management are available. Another critical enabler is for training providers to have an active policy in which the philosophy and approach to WIL is explicit including the right mix between theory and practice that supports meaningful knowledge and skill development (Sunnemark et al., 2023). The education programmes are driven by the learning outcomes, thereby ensuring the designed curriculum is work-life-friendly to produce more employable graduates. However, there is room for variation in educational curricula, but the focus should be on how to effectively bridge the theory-practice gap and what perspectives the theory should be premised on (Grant-Smith & Feldman, 2023; Nedungadi et al., 2017).

Studies indicate that adding different WIL components to HEI curricula is a legitimate and helpful action to enhance graduate employability (Bosco & Ferns, 2014; Ferns et al., 2021; Smith, 2012). For instance, a study that adopts WIL, in which students collaborate with industry in small groups on a semester-long basis, produced noteworthy results, such as enhanced communication abilities and expanded student networks (Doolan et al., 2019). The findings also revealed enrichment in the planning, organizational and problem-solving skills of the students. Furthermore, several other studies have shown that WIL helps students build their identities, grow professionally, gain an understanding of industry ethics and practices, define career paths, improve their social skills and interpersonal interactions, and become more self-assured and independent (Jackson, 2017, 2024; Kumar Mandal et al., 2022; Zegwaard & Rowe, 2019). Students, education providers, and industry are key stakeholders in WIL, and the meaningful cooperation between these different actors fosters mutual support and benefits (Patrick et al., 2008). WIL gives work supervisors the chance to improve their supervision techniques and gain pedagogical knowledge (Mather et al., 2015). HEI instructors gain in WIL with industry partners through research and other collaborative ventures; thus, enabling them to have a proper understanding of the work-life setting and aiding in sharing valuable knowledge and experience with students on real-world experiences (Ankrah & AL-Tabbaa, 2015).

Challenges to WIL implementation

WIL is not without challenges. Resource constraint, especially in developing countries, is identified as a key challenge in the delivery of quality WIL (Doolan et al., 2019). Other significant barriers to implementing WIL programmes effectively revolve around issues on the workload of faculty members and industry partners (Bates, 2011; Wake et al., 2017). The abilities of workplace supervisors to effectively support students' learning within the context of work-integrated learning is identified as a significant gap (Grant-Smith & Feldman, 2023). Bridging this deficit is essential to improving students' competency development and enabling constructive adjustments to their work-related learning experiences. Furthermore, inadequate internship opportunities across industries, the belief that placements take more time and effort, and the difficulty of sustaining long-term relationships with industry partners are further issues that require to be addressed (Felton & Harrison, 2017).

The institutional exclusion of certain groups is a significant barrier to inclusive WIL programmes. In some institutional settings, WIL placements are determined by Grade Point Average (GPA) standards, which can disproportionately affect students (Itano-Boase et al., 2021). Another area of challenge highlighted in the literature is the effective communication of institutional policies or strategies on WIL with stakeholders (staff, students, and industry), and proper orientation of students and industry supervisors throughout the various stages – before, during, and after placements (Brown, 2010).

Conclusion

The increasing prevalence of WIL in higher education, either as part of curricula or not, is without reservation beneficial, but it also presents challenges. A wide range of research studies conducted on WIL have confirmed its effectiveness in enhancing graduate employability and addressing skill shortages (Dacre Pool & Sewell, 2007; Jackson, 2024; Mather et al., 2015; Roosipõld et al., 2020). However, to fully harness the transformative potential of WIL, and benefits from its individual, social and economic dimensions, a strong commitment and financial support from education and training providers, industry and governments are needed (Billett, 2011; Jackson, 2015b; Prinsley & Baranyai, 2015). These are expected to facilitate an all-inclusive and high-quality WIL experience for learners. Moreover, the lack of clear-cut policies and strategies on WIL in HEIs poses a threat to the sustainability of an inclusive WIL. Future research endeavours could explore how collaborative models with industry can guarantee the sustainability of WIL programmes. This entails placing greater emphasis on the roles of industry partners such as senior technical managers, human resource managers, and field supervisors, who could serve as crucial catalysts for inclusive WIL. Understanding their perceptions of inclusion and how these beliefs shape their proactive involvement in fostering sustainable and inclusive WIL is essential. Furthermore, the utilisation of cutting-edge technologies such as artificial intelligence and machine offers an avenue for further advancement within the realm of work-integrated learning.

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