An entrepreneurial view of universal work-integrated learning

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Abstract

Purpose – Work-integrated learning (WIL) has emerged as a leading pedagogy that blends theory with application. In recent years, policymakers, educators and practitioners have called for a significant expansion of WIL, one which would enable every undergraduate student has at least one WIL experience during their program of study. Despite these appeals, there remains a significant divide between the aspiration of universality and the realities. Consequently, the study asks the following question: How can post-secondary institutions expand their WIL initiatives to universal levels that deliver transformative learning?

Design/methodology/approach – In this exploratory study, the authors leverage research from entrepreneurship and management to develop a conceptual model of universal work-integrated learning (UWIL). Entrepreneurship and management research is relevant in this context, as the rapid introduction of a UWIL has transformative implications at the level of the individual (e.g. students, faculty), organization (e.g. processes) and the learning ecosystem (e.g. partners, policymakers) — issues at the core of research in entrepreneurship and management over the past two decades.

Findings – At the core of the authors' proposal is the contention that the high-impact talent challenge and the delivery of UWIL must be reframed as not simply a challenge facing educators, but as a challenge facing the broader ecosystem of the workforce and the larger community. The authors propose the implementation of UWIL through an open innovation framework based on five strategic pillars.

Originality/value – Ultimately, the findings the authors present here can be leveraged by all members of the learning ecosystem, including administrators, faculty, policymakers, accreditation bodies and community partners, as a framework for operationalizing a UWIL strategy. The study's model challenges all members of this learning ecosystem to operationalize a UWIL strategy. This entrepreneurial reframing introduces the potential for innovating the delivery of UWIL by leveraging the broader learning ecosystem to drive efficiencies and transformative learning.

Keywords Entrepreneurship, Open innovation, Work-integrated learning, Experiential education
Paper type Conceptual paper

Developing high-impact talent in a dynamic world

Driven by economic, social and cultural factors such as technology and globalization, exponential change and disruption in the business environment have emerged as a new norm (Sado *et al.*, 2017; Rafferty *et al.*, 2013). As a result, educators at all levels are challenged with developing graduates not only for defined jobs or career paths, but who will also thrive professionally in a turbulent and dynamic world (Mitchell *et al.*, 2019; Finch *et al.*, 2016a).

Experiential learning has emerged as a high-impact pedagogical approach – one that has the potential to transform the culture and experience of learning for post-secondary students across all disciplines (Kolb, 1984; Kuh, 2008; Sattler, 2011). In the past decade in North America, one form of experiential learning — work-integrated learning (WIL) — has generated enthusiasm among policymakers, educators and leaders in the workforce (Kuh, 2008; Sattler, 2011; Usher and Florizone, 2018). WIL is a "model and process of curricular experiential education which formally and intentionally integrates a post-secondary student's academic studies within a workplace or practice setting" (CEWIL Canada, 2019).

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Today, WIL encompasses many of the expected components of a robust undergraduate program, including cooperative education, practicums, internships, apprenticeships or course-based projects – all modes which support employment readiness (Andrews and Higson, 2008; Gault *et al.*, 2010; Stirling *et al.*, 2016), improved student engagement (CEWIL Canada, 2019), increased distributed and situational cognition (Coll *et al.*, 2011) and the rate of employment pre- and post-graduation (Billett, 2011; Fede *et al.*,2018; Jackson, 2016).

Not surprisingly, there have been increasing calls by policymakers to establish a requirement that all undergraduate students complete WIL as part of a core degree program (Bierly and Smith, 2019; Stirling *et al.*, 2016; Usher and Florizone, 2018) – a requirement that we define here as universal work-integrated learning (UWIL). Despite these appeals, there remains a significant divide between the aspiration of universality and the realities. For example, in Canada, WIL has expanded considerably in recent years, but still only half of undergraduate students are exposed to some form of WIL, and the tracking of the intensity of this exposure varies by the mode of WIL (Sattler, 2011). Scholars have identified numerous impediments to the expansion of WIL, namely, institutional barriers (e.g. culture, administration, resources), community-partner barriers (e.g. capacity, perceived value) and student barriers (e.g. financial, time management, delay in graduation) (Stirling *et al.*, 2016).

In this study, we explore this challenge of UWIL. Consequently, the research question we ask is as follows: *How can post-secondary institutions expand WIL initiatives to universal levels in order to deliver transformative learning?* Recognizing this challenge, the Business/Higher Education Roundtable (Sado *et al.*, 2017, p. 1) argues that Canada "needs a fresh approach to meeting the challenges that exist at the intersection of business, education and employment." Consequently, we propose that leveraging research from entrepreneurship and management to develop a conceptual model of UWIL may present the fresh approach required. Entrepreneurship and management research is relevant in this context, as the rapid introduction of a UWIL framework has transformative implications at the level of the individual (e.g. students, faculty), organization (e.g. processes) and the learning ecosystem (e.g. partners, policymakers) — issues at the core of research in entrepreneurship and management over the past two decades (Barreto, 2010; Pardo Del Val and Martinez Fuentes, 2003). In this, we build on a long history of leveraging research from these fields to tackle issues in post-secondary education (PSE): the application of dynamic capabilities to examine graduate employability (e.g. Finch *et al.*, 2016b), the use of total quality management practices (Sahney *et al.*, 2004), the use of institutional theory to study faculty hiring (Finch *et al.*, 2016a), the application of institutional biographies to study the intersection of faculty and institutions (Finch *et al.*, 2017) and the application of leadership theory to higher education (Amanchukwu *et al.*, 2015) all draw from this same rich area of scholarship.

This study is structured as follows. In the first section, we will consider the literature associated with growth and innovation and contextualize these findings and consider how they may be applied to guide the introduction of UWIL. In the second section, we propose a model of WIL based on the principle of open innovation. In doing so, we identify five strategic pillars to support its implementation. In the final section, we discuss the implications of our paper and directions for future research.

An entrepreneurial view of universal work-integrated learning

For the purpose of this study, we define UWIL as a system defined by an institution-wide requirement that all students, regardless of discipline, complete a minimum of one WIL experience, incorporating a minimum of 450 WIL hours prior to graduation. [1] The proposed expansion of WIL to UWIL shares similarities to the challenges facing high-growth firms. Historically, growth has been posited as a determinable "stage" (e.g. Greiner, 1972). However, more recently, scholars have abandoned this model to examine how firms move in and out of

transitory "states" (Levie and Leichtenstein, 2010). This approach posits that growth occurs not as a "stage" but as an "episode" (Anyadike-Danes and Hart, 2015). The challenge facing researchers has been to identify the factors and conditions that will increase the probability that firms experience and/or extend a growth episode. This shift in mindset requires researchers to view individual organizations as part of a larger ecosystem that interacts with and is shaped by its environment (Chesbrough, 2003, 2011). What makes the ecosystem lens unique is that the interdependency recognizes that the sustainability of the individual actors (e.g. universities, employers, governments, faculty, students) is dependent on the sustainability of the larger ecosystem (Chesbrough, 2003). Applying this perspective to a UWIL system allows us to present a stronger analysis of the boundaries, networks and knowledge exchanges across the ecosystem and to define the underlying mechanisms that lead to, or are a barrier to, growth. Below, we describe the factors that organizations often leverage for growth, and we suggest that since similar factors affect the expansion to UWIL, that UWIL organizing systems should develop capacities by leveraging the same factors.

These growth mechanisms are based on organizational (e.g. company) and ecosystem (e.g. networks) factors that organizations can exploit for growth. At an organizational level, growth mechanisms include aligning managerial capabilities to the growth objectives (Knight and Cavusgil, 2004), developing a talent acquisition, retention and development strategy (Baum *et al.*, 2015), aligning growth to market opportunities (Hewitt-Dundas and Roper, 2018), developing a financial capacity (Gallego and Casillas, 2014), adapting operational processes (Papadopoulos and Martín, 2010) and managing organizational culture changes (Uner *et al.*, 2013). At an ecosystem level, capacities include the ability to exploit strategic industry factors such as regulatory conditions and competitive risks and opportunities (Leonidou, 2004; Uner *et al.*, 2013) and to build and integrate inter-organization networks (Baum *et al.*, 2015). Each of these areas provides important insight into the anticipated challenges and opportunities that organizations and ecosystems pursuing UWIL may face. In Table 1, we compare the factors facing firms pursuing growth and the tangible guidance this may provide to operationalizing a UWIL growth strategy.

A pathway to growth: open innovation and work-integrated learning

When evaluating high-growth organizations, from Google to Amazon to Lego, researchers (Chesbrough, 2003; Yoo *et al.*, 2012) have observed that growth can be triggered through a transformation of an organization's innovation processes. Traditional innovation is best described as a hierarchical closed system, where internal staff are responsible for research, development and commercialization of products or services. Benefits of this system included the ability to control the entire innovation process and its outputs (e.g. intellectual property [IP] and commercialization). Weaknesses include the slow innovation process, lack of agility, overall costs and the concentration of the innovation process with internal staff (Chesbrough, 2003).

Over the last two decades, there has been a shift toward innovation systems which afford individual companies the opportunity to move beyond their innovation constraints through the coordination of innovation within a network of partners (Van Der Duin *et al.*, 2007). This is to say, organizations seldom innovate in isolation, but open their innovation processes to others, becoming empowered to collaborate and co-create (Chesbrough, 2003, 2011). In this cyclical interaction model, an organization transitions from being a linear controller of knowledge to becoming a dynamic broker of knowledge supporting interconnected cycles and processes. Examples are systems designed by Google, Amazon and Lego that enable ecosystem partners to develop and distribute products and services within a defined technical, legal and branding framework, while encouraging interaction with users, commercial organizations and their customers. These open digital platforms encourage

Factor	High-growth firms strategies	UWIL growth strategies
Institutional-Level		
Managerial capabilities: Experiences and mindset of the management team	The managerial team needs to align in the development of a vision and a commitment to lead organizational transformation for growth (Knight and Cavusgil, 2004)	UWIL will require the support of administrators who are philosophically committed to the value of UWIL. Moreover, administrators must be open to experimenting with non-traditional approaches to WIL deployment
Talent acquisition, retention and development	Requires the acquisition of new skills and the development of current employees to meet new skills required to support growth (Baum *et al.*, 2015)	The scaling to UWIL requires both administration and faculty to rethink and reinvent curriculum (programs and courses) for the effective and efficient expansion of UWIL
Market opportunities	The organization may need to focus its growth on key markets. Growth often requires the culling of a firm's products, services and the markets it serves, to enable it to focus its resources in growth areas (Hewitt-Dundas and Roper, 2018)	Institutions that service diverse programs from arts to sciences to business and professional fields will face pressure as to reassess the breadth of current programs and their alignment to WIL
Financial resources	The organization needs to develop a financial capacity, which required to secure resources (staff, facilities, raw materials) in advance of revenue (Gallego and Casillas, 2014)	UWIL may require incremental financial capacity to secure resources (primarily staff) to manage the administration and quality of WIL programming
Operational processes	The operational processes (e.g., manufacturing, distribution, human resource, executive decision-making) need to be refined for smaller-scale operation. High growth often requires a fundamental redesign of processes. For example, prior to scaling, quality control for many small businesses is less procedural and more personal. To grow, processes must be defined to deliver quality and scale profitably. Similarly, product development shifts from closed to open innovation (Papadopoulos and Martín, 2010)	UWIL demands the introduction of a distributed open innovation model for WIL that empowers faculty, students and community partners to innovate and co-create new modes of WIL. To do so, consistent processes will need to be established to manage a decentralized and distributed open WIL model, within a unified framework

Table 1.
Lessons from high-growth firms

(*continued*)

Factor	High-growth firms strategies	UWIL growth strategies
Organizational culture	Rapid growth will have significant implications on organization culture as it involves a rapid expansion of staff and external networks and a redefining of operational processes. The organization needs to effectively manage disruption to the organization culture, which is one of the primary challenges facing organization leaders (Uner *et al.*, 2013)	The rapid growth of UWIL will have significant implications on institutional culture as it may require a significant modification of program learning outcomes and structure. Moreover, it may reframe the role of faculty and administration. Lastly, this expansion will have implications on UWIL community partners
Ecosystem-Level		
Strategic industry factors: Market dynamics, including market demand, regulatory conditions and competitive risks and opportunities	Managers must evaluate the systematic interaction of these variables, when determining their growth strategy (Uner *et al.*, 2013; Leonidou, 2004)	Research demonstrates that students engaged in WIL have a competitive advantage when seeking employment at graduation. The expansion of UWIL must factor in a market demand, accreditation condition and the impact it may have on a school's position in the market
Networks	Prior to rapid growth, many smaller firms are vertically integrated and control the delivery of their core business. Growth often requires a rapid expansion of external networks including suppliers, distributors or contract manufacturing. The result is decreased control and increased risk to the business (Uner *et al.*, 2013; Leonidou, 2004)	A core requirement of WIL is the inclusion of community partners in the learning experience. In smaller-scale delivery, this is often rooted in personal relationships of faculty and administrators. Scaling of UWIL requires a significant expansion of community partners, which exposes a program to increased dependency on partners to deliver initiatives

Table 1.

both competition and collaboration within the ecosystem. The benefits of open innovation include increased value creation, access to external resources and capabilities (Grimpe and Hussinger, 2014), speed, agility, reduced costs and the ability to exponentially increase and diversify the people engaged in the design, development and delivery of new products and services, which tend to outweigh the downsides associated with open platforms (e.g. intellectual property (IP) ownership, new competitive threats). For example, in the Google Play Store, there are over 2.8m apps published by 968,000 different developers (Karr, 2019). Similarly, Lego shifted Mindstorms design to an open innovation model and immediately scaled from seven internal engineers to over 20,000 Lego consumers engaged in a cyclical interaction model of co-creation (El Sawy *et al.*, 2016). Based on this principle, Bierly and Smith (2019) called for business to "become the creators and not just the consumers of tomorrow's talent" (p. 38).

With this in mind, we propose that the rapid expansion to UWIL will require the transition to an open innovation model: a model based on leveraging a regional learning ecosystem including faculty, students, community partners and accreditation bodies as co-contributors in the design and delivery of a UWIL experience. Research shows that the capacity and

flexibility of a business ecosystem is rooted in adopting a more holistic and cyclical system-level view (Van Der Duin *et al.*, 2007) that transcends a traditional single organization or sector (Eisingerich , 2010; Peltoniemi and Vuori, 2004). For example, Mitchell *et al.* (2019) explored how Cork, Ireland, developed a collaborative "learning city" model that incorporated diverse stakeholders from education, policy and community pursuing a common strategy. In this open innovation-focused UWIL model, faculty, students and community partners would be empowered to develop and deliver new, innovative, co-created and pedagogically rigorous forms of WIL. Taking an open innovation approach to establishing a UWIL system means that the role of the institution (and to a lesser extent policymakers) would be to broker innovation by defining learning outcomes and associated verification and reporting processes, and by participating in the design and delivery of the WIL experience that emerges from this process. Refer to Table 2 to review the roles of the learning ecosystem members in an open WIL model.

A framework for delivering open work-integrated learning

To achieve the goal of UWIL, we propose the implementation of UWIL through an open innovation framework, based on the following five strategic pillars in Figure 1:

Pillar 1: institutional commitment

The management literature (Knight and Cavusgil, 2004) recognizes that the organizational transformation at the root of high growth is driven by a deep and sustained commitment by all levels of the organization. Leadership in an entrepreneurial organization is pivotal to manage the disruption that is embedded with this growth (Theisohn, 2013). In a PSE context, this may involve disruption to scheduling (e.g. introducing a 12-month calendar), disruption to systems and processes (e.g. knowledge management and reporting) and disruption to existing tenure and promotion criteria (e.g. recognition of incremental service associated with WIL). This transformation has proven difficult in a traditional hierarchical management-driven organization, and will be exceptionally difficult in PSE, which is anchored in a deep history of consensus-oriented decision-making (Christensen and Eyring, 2011; Rubin and Morgeson, 2013). However, this commitment to disruption will be vital to the project of expanding existing fragmented and dispersed WIL activities to a structured and cohesive UWIL strategy.

Pillar 2: recognize UWIL is ONLY a means to an end – not the end!

Though there is significant evidence to suggest that WIL contributes to transformative learning outcomes and to the development of employee readiness skills, WIL should be recognized as a means to an end. Being guided by strategic management theory (Kaplan and Norton, 1996), administrators, educators and students must be disciplined in the allocation of scarce tangible (e.g. money) and intangible resources (e.g. time). Therefore, the first step in expanding existing WIL opportunities to a universal scale is the introduction of an embedded and structured process for students to explore and test disciplines and career-path to allow them to make an informed and evidence-based decision on their broader personal and professional goals. Following Finch and DePaul (2015), we propose that this process should incorporate three iterative stages for all students who pursue a WIL opportunity as component of their course of study: (1) define an evidence-based mission, (2) conduct a gap analysis and (3) define a mission map to deliver on the mission (refer to Figure 2).

Define a Mission. A mission becomes a student's touchstone for the allocation of scarce resources, including decisions, from academic programs to evaluating employment and volunteering opportunities. Stanford University refers to this as Purpose Learning (Stanford, 2019). In order to take advantage of the wealth of opportunities afforded by a UWIL strategy,

Stakeholder	Roles in a closed innovation UWIL model	Roles in an open innovation UWIL model
Students	(1) Most WIL is delivered through program or faculty directed modes (2) 50% of students have no exposure to WIL today	(1) WIL requires students to assume far greater agency compared to other learning models. Students will be required to reflect early on the disciplinary and career pathways to maximize the value of WIL (2) Students may be exposed to WIL initiatives embedded in multiple courses, simultaneously, impacting schedule flexibility and time demands (3) UWIL may require the transition to a year-round program schedule, from the current fall-winter semester model common at many universities
Faculty	(1) Program-level WIL managed by program coordinators and independent of faculty (2) Community service learning (CSL), research and entrepreneurship are overseen by faculty	(1) To support universal goal, faculty will have a far greater level of accountability for embedding meaningful WIL at a program and course level (2) Faculty will be required to develop and activate community networks to integrate WIL opportunities. In addition, mechanisms will be required to bridge faculty to community partners and needs (3) Potential transition to a year-round program schedule may impact traditional balancing of teaching and scholarship
Administration	(1) WIL is often contained at a program-level with dedicated program coordinators funded by the program	(1) Has potential for significant operational and financial implications on administration. This may include transitioning to a year-round program, narrowing program offerings, expanded WIL-oriented professional development, reassessing optimal faculty profile to deliver faculty-level WIL and mechanisms to acquire and develop community partners
Community	(1) WIL is the responsibly of an academic institution. Today, community partners support WIL delivery through mechanisms such as cooperative education, practicums and CSL	(1) WIL becomes a shared ecosystem-level responsibility. As a result, community partners (at both a sector and organizational level) will play a far greater role in the development of WIL, not only the delivery (2) The expansion of WIL demands a rapid expansion of community partners to meet the UWIL goal. This growth may impact the level of support WIL community partners currently receive

(*continued*)

Table 2.
Transitioning from current closed to open UWIL

Stakeholder	Roles in a closed innovation UWIL model	Roles in an open innovation UWIL model
Policymakers	(1) Limited direct engagement in program and curriculum content and oversight. Public funding provided on a student/class level, regardless of pedagogy	(1) WIL becomes a shared ecosystem-level responsibility; therefore, policymakers will be required to be far more engaged in the development and funding of WIL initiatives to achieve the universal goal
Accreditation Bodies	(1) Specific WIL delivery may be defined as a learning requirement by discipline specific professional or accreditation bodies (e.g. nursing)	(1) There is no anticipated implication on professional or accreditation bodies (e.g. nursing). However, bodies will rigorously monitor the universal deployment of WIL, to ensure it does not negatively impact current WIL initiatives embedded in their programs

Table 2.

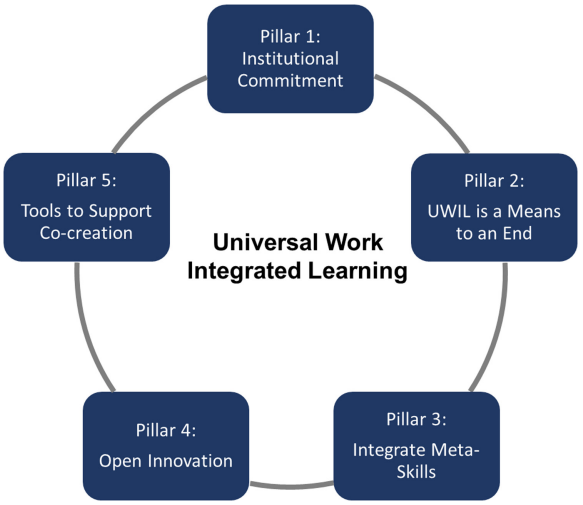

Figure 1.
Five pillar UWIL

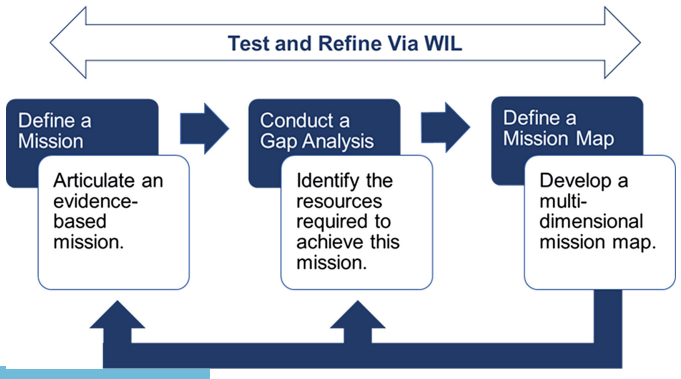

Figure 2.
Iterative planning process

students will need to have a clear mission to maximize the value of a WIL experience. A mission will also enable students to unpack and prioritize the knowledge and skills that best fit their mission. Research suggests that half of university graduates regret their major at graduation (Finch and DePaul, 2015). Therefore, WIL should be integrated as a mechanism for students to test alternative pathways. For example, a student may define a preliminary mission to become a lawyer and leverage a WIL mechanism to further test this pathway, prior to pursuing law school.

Conduct a Gap Analysis. The second step in this process should be conducting a rigorous gap analysis between a student's current development (education and experience) resources and their competency resources (including the meta-skills and task-specific skill resources such as education and experience that are the output of development resources and their identified mission). This gap analysis may assist in identifying priority skills and knowledge areas that the student desires to develop through a WIL program or experience. If the mission is the destination, then the learning about this gap is the journey required. We suggest students conduct this gap analysis by answering three questions:

(1) What are the resources and competencies needed to achieve my mission?

(2) What is the evidence these knowledge and skills are important?

(3) How to evaluate these knowledge or skills?

Define a Mission Map. The final step in this planning process is to develop a comprehensive mission map. For most undergraduate students, it can be a daunting task to look a decade ahead, and difficult to fully comprehend the fit of a WIL learning experience in their educational program or degree requirements. This mission map can be organized around four components: (1) education and learning resources, (2) employment experience, (3) community/volunteer experience and (4) contextual experience. We also recommend this map include the anticipated relationships they will need to achieve their mission (e.g. mentors, professional and personal). Developing a mission map will enable students to select the appropriate WIL activity for their educational pathway.

Case study: integrating mission mapping and WIL

Elon University (n.d.) recognizes that if you do not have a destination, any place will get you there. To deal with this, it offers a mentored Individualized Professional Development Experience. This process guides a student through the development of a comprehensive professional and academic plan. This staged program includes self-exploration (e.g. values, interests), career exploration, professional communication and conduct and developing emotional intelligence, intercultural competence and other professional skills. This process is non-credit; however, students are provided 40h of credit toward their professional work-experience requirements (Elon University, n.d.).

Pillar 3: explicitly integrate meta-skill development into WIL outcomes

Traditionally, WIL has been perceived as a conduit for developing task-specific skills associated with the careers or employment opportunities linked to a specific program of study. Though employers recognize task-specific skills as important (Finch *et al.*, 2013), research shows that employers assign significantly greater value to meta-skills (e.g. Finch *et al.*, 2016b; Finch *et al.*, 2013; Mitchell *et al.*, 2019). Moreover, meta-skills anchor the agility and adaptability core to the essential integrated dynamic capabilities required for the development of high-impact talent. For this reason, the successful expansion of WIL to a UWIL model is dependent on the recognition and valuing of experiences that contribute to the meta-skill development of students as a direct outcome of a UWIL program.

The introduction of meta-skills as an explicit outcome of an effective UWIL program introduces opportunities and challenges. The opportunities include recognizing experiences that extend beyond the narrow program task-specific outcomes. In a traditional, fragmented and program-centric model of WIL, if an undergraduate student is engaged with WIL in an accounting program, their learning activities would be tied to task-specific learning outcomes of the accounting program itself (e.g. an internship in an accounting department). However, as part of a UWIL experience which recognizes the importance of meta-skills, such as communication and organization, other experiences such as engagement with community-supported research focused on the experiences of small business owners during tax season would qualify as relevant experience. For this reason, we recommend that in order to develop a UWIL program in the PSE context, the role of meta-skill development must be both explicitly outlined and added to task-specific learning outcomes. The *Embedding Meta-Skills into WIL* vignette provides an excellent example of a program that introduced both meta-skills and task-specific skills as WIL outcomes.

Case study: embedding meta-skills into WIL

The Mount Royal University (MRU) BBA in marketing embeds a co-curricular professional portfolio (CPP) into their program. The CPP requires students to complete 450 meta-skill hours and 450 marketing skill hours prior to graduation. These hours can include paid or volunteer activities. All hours must be verified by their supervisor and by MRU faculty. This tracking is embedded on LinkedIn, so its portable when students graduate. Data shows that students use the CPP as a framework for selecting employment (part-time or summer employment) and volunteer activities. When the CPP was first introduced in 2014, a small fraction of students met the 900h criteria. Today, students in this program average 1,000 marketing-skill hours and 2000 meta-skill hours of verified work experience at graduation (Mount Royal University, n.d.).

Pillar 4: empower rigorous open innovation

Though there is limited system-wide tracking of WIL delivery modes in most PSE contexts today, program-directed WIL traditionally has been the primary delivery model for WIL. Program-directed mode is when a student completes a centrally administered community work experience initiative, such as co-operative education, professional practicum, clinical placement, internship, apprenticeship and field placement. This program-directed model is equivalent to a closed innovation model, as the development and delivery of WIL is the responsibility of a relatively small centralized group of employees. Embracing of open innovation requires an institution to empower the entire learning ecosystem to innovative and develop new forms of WIL delivery to enable high growth.

We anticipate much of this future growth in service of a UWIL model will be delivered through faculty- and student-directed WIL. Faculty-directed WIL is a WIL experience delivered as a course-based requirement. This initiative is integrated by a faculty member within a specific course and embeds an instructor-led critical reflection mechanism to enrich the learning experience. Examples of faculty-directed WIL today include course-based community-service learning, course-based live case studies and course-based community-engaged research projects (e.g. honors thesis, directed reading). The final and rarest delivery mode today is student-directed WIL. This is when a student completes a self-directed community work experience initiative that directly supports the learning outcomes of their program but is independent of their program.

Though this is independent, this type of WIL embeds a supervised critical reflection mechanism to enrich the learning experience but is not necessarily assessed or graded for credit as part of the student's program of study or course requirements. Examples of student-

directed WIL mechanisms include entrepreneurship, CPP, research assistant for community-engaged research projects, volunteer-experiences with embedded reflection. The benefit of this form of WIL is that it empowers students to own and be accountable for developing a WIL pathway that aligns to their professional and personal goals as defined by their mission map. In addition, this has a dual benefit of increasing student accountability and self-efficacy and reducing administrative burden and oversight.

As institutions transition to a more distributed open WIL model, it is essential that pedagogical rigor is maintained and that WIL experiences are designed to be scaffolded like all other program requirements. For example, the University of Wollongong has introduced a UWIL strategy that is scaffolded across five-levels to ensure that the learning activities align to a student's development (Dean *et al.*, 2019). In adapting this model, the scaffolding of WIL is anchored in the development readiness of a student. Table 3 is a summary of a four-level model of WIL, considering Bloom's Taxonomy of Learning (Krathwohl, 2002) and operational factors related to student autonomy, location and duration.

Level	Objective	Autonomy	Location/ Duration	Examples
Level 1 WIL	(1) Observe (2) Describe (3) Explain (4) Identity (5) Select (6) Reflect	(1) Fully supervised by faculty (2) Assessments completed by faculty	(1) Primary on-campus (2) Limited duration From one class to one week	(1) Course-based case study with a limited level of client engagement (2) Observational field trips coordinated by faculty
Level 2 WIL	(1) Prepare (2) Apply (3) Produce (4) Solve (5) Experiment (6) Reflect	(1) Increasing autonomy (2) Engagement with partner is largely controlled by faculty (3) Assessments completed by faculty with partner input	(1) Mixed Incorporates faculty directed off-campus engagement with community partner (2) Increasing duration. From one week to a month	(1) Course-based community-service learning (2) Course-based live case study with high-level of client engagement (3) Course-based community-engaged research projects (e.g. honors thesis, directed reading) (4) Field schools
Level 3 WIL	(1) Apply (2) Produce (3) Differentiate (4) Solve (5) Experiment (6) Reflect	(1) Largely autonomous of faculty or coordinator	(1) Primarily off-campus (2) Duration is defined by student	(1) Co-curricular professional portfolio (2) Research assistant for community-engaged research project (3) Volunteer-experiences with embedded reflection
Level 4 WIL	(1) Synthesize (2) Critique (3) Argue (4) Defend (5) Design (6) Develop (7) Recommend (8) Reflect	(1) High-level of autonomy. Program coordinator may support placement (2) Assessment is fully completed by partner	(1) Fully off campus (2) Duration may run from one to three semesters	(1) Entrepreneurship (2) Cooperative education (3) Professional practicum (4) Clinical placements (5) Internships (6) Apprenticeship (7) Field placement

Table 3.
Conceptual model of scaffolded WIL

Those seeking to participate in UWIL systems will face inevitable challenges that need to be considered. For students, research has identified time management as one of the most significant challenges (Sattler, 2011). Student-directed WIL requires a significant investment of time and resources on the part of the undergraduate student and will compete with other priorities. For instance, 50% of undergraduate students hold part-time employment to support their education (Sattler, 2011). Proposing to introduce UWIL as a mandatory requirement over and above a student's current employment commitments introduces numerous challenges, and WIL requirements may further burden students. For this reason, part-time and other employment, which are for the most part detached from a student's learning program, should be leveraged as a powerful channel for the rapid expansion of student-directed WIL. Currently, mechanisms such as co-curricular records (CCR) work to track a students' on-campus extracurricular activities as part of their overall learning program. Managing student-directed WIL in such a way would leverage a similar principle while expanding to include off-campus activities (e.g. employment, volunteer roles) as part of a student's program of study.

The introduction of student-directed WIL as a part of UWIL also presents numerous implications for faculty and administration. For example, an off-campus work experience must be directly linked to the learning outcomes of a specific program – an alignment that can be difficult to arrange and manage. In addition, for any work experience to be considered WIL, rigorous reflection and assessment mechanisms that are supported by a faculty or programmatic context should be included.

One challenge of open innovation is the need to embed institutional processes (including reflective processes) to support student-focused learning outcomes. Expansion of ePortfolio and CCR platforms may provide potential digital efficiencies to ensure rigor. Student-directed WIL will require structured mentoring and oversight to support student success, the scaling of which may be made possible by including senior students or alumni as mentors for student-directed WIL engaged students.

Case study: innovative co-op extensions

Both the University of Waterloo (n.d.) and the University of Victoria (n.d.) offer programming that allows students to pursue co-op focused learning while starting their own business. Additionally, the University of Cincinnati's Experiential Explorations program allows students the flexibility to swap out one of their co-op terms for an alternative WIL experience including community-based research, career-related travel, community-volunteering, creative practice and entrepreneurship (Cedercreutz and Cates, 2010).

Pillar 5: establish tools to for the co-creation of WIL experiences

UWIL takes many forms, and its application requires a variety of resources from all members of the learning ecosystem. Understanding the intensity requirements for each of these models of UWIL is essential for the alignment of UWIL delivery options with the goals of all partners involved. Implementing and engaging with WIL in any form requires an equitable commitment from all members of the learning ecosystem. However, not all forms of WIL require the same investments of time, opportunities and access. We propose the following model to allow administrators, faculty or external partners to evaluate and align WIL delivery mechanisms to learning outcomes and resource requirements and to co-create the learning experience with students. For example, an external community partner interested in partnering on the creation of a learning experience that does not require large investments of time or energy regarding curriculum integration may choose community service learning (CSL) as a model for WIL delivery. Tables 4 and 5 are examples of how a WIL evaluation model could be applied.

Criteria	Low (1–3)	Medium (4–6)	High (8–10)
Curriculum integration	Activity is detached from the learning outcomes of a specific course or a program E.g. Leadership role in a student organization that includes community engaged activities for members	Activity has a moderate level of integration into the learning outcomes of a specific course or program E.g. student defined and initiated "curiosity conversations" with community members on issue linked to their professional goals	Activity is fully integrated into the learning outcome of a specific course or program E.g. (a) clinical practice experience in nursing degree. (b) completion of honors research project with community partner
Meta-skills	Activity is fully detached explicitly from meta-skill development	Activity includes a moderate level of explicit meta-skill development	Activity includes a high-level of explicit meta-skill development
Partner role	Activity requires low level of community partner support. E.g. guest speaker in class. Detached from assessed student outcome Partner commits <2 h to the activity	Activity requires a moderate level of community partner support. Partner commits 2–10 h to the activity. E.g. Partner engages in a "live" case study, including an active role in designing case and providing feedback to students during the development of the project and/or plays role in evaluating project at completion	Activity requires high level of community partner support. E.g. partner commits a minimum of 10 h to the activity. Partner engages in co-op program including hiring, supervising and reporting back to school on outcomes
Experimentation	Activity involves low level of student experimentation. E.g. student works on a CSL activity for less than two weeks and is defined by very narrow problem scope	Activity involves moderate level of student experimentation. E.g. student works on a CSL project for a minimum of two weeks. Outcome involves presenting recommendation to client team	Activity involves high level of student experimentation. E.g. student participates in entrepreneurial Launchpad program. Involves developing new idea, testing the value of this idea and pitching funders for support
Conceptualization	Activity involves low level of student conceptualization. E.g. system mapping	Activity involves a moderate level of student conceptualization. E.g. system mapping	Activity involves high level of student conceptualization. E.g. system mapping
Reflection	Activity involves low level of student reflection. E.g. in-class discussion about the lessons learned from a guest speaker. No structured written reflection	Activity involves a single structured student reflective activity. E.g. reflective essay following a CSL activity	Activity involves multiple points of structured student reflection. E.g. embedded journal in course, requiring sustained and consistent reflection on activity learning experience

(*continued*)

Table 4. Sample WIL evaluation and alignment

Criteria	Low (1–3)	Medium (4–6)	High (8–10)
Resource demands	Activity involves <2 h of institutional resources (faculty or administration) to execute. E.g. faculty coordinates an off-site tour of a community partner's facility. Students are responsible to get themselves to partner location	Activity involves moderate, but not dedicated institutional resources (faculty or administration) to execute. E.g. (a) co-curricular professional portfolio embedded in the marketing BBA. Students track and verify work experiences over the tenure of their program. Faculty reviews status with all students at three points in degree. (b) Field school coordination	Activity involves dedicated institutional resources to execute. E.g. full-time work experience program coordinator required to recruit and manage community partner and student engagement

Table 4.

Discussion

Experiential learning is a pedagogical approach with the potential to transform student learning across all faculties in a PSE institution (Kuh, 2008). This new norm has important implications on PSE, as educators explore new approaches to develop graduates who can thrive in a turbulent and dynamic world. In North America, WIL has emerged as a leading pedagogy that blends theory with application. In recent years, policymakers, educators and practitioners have called for a significant expansion of WIL, one which would enable every undergraduate student has at least one WIL experience during their program of study (which we define here as a UWIL system). Here, we have applied research in management and entrepreneurship to shape eight organizational and learning ecosystem challenges for UWIL growth (see Table 1). And yet reaching the common definition of UWIL does not introduce extraordinary metrics for success: one WIL experience per student presents a relatively low threshold for completion and leaves ample room for creating additional impact on the student learning experience. How then can we support a UWIL strategy that is not only achievable for all faculty, programs and departments at a PSE institution, but that provides support for extension in those areas where there is an appetite for an even more intensive WIL approach? In this study, we propose PSE institutions adopt the open innovation used in organizational settings as a mechanism to scale to UWIL and facilitate its expansion. This model is rooted in building a learning ecosystem and promotes WIL-focused open innovation through faculty and student collaboration, along with community partners. To drive this open innovation, we present five pillars that provide the foundation of a successful WIL expansion.

Pillar 1: Institutional commitment

Pillar 2: Recognize UWIL as a means to an end

Pillar 3: Explicitly integrate meta-skill development into WIL outcomes

Pillar 4: Empower rigorous open innovation

Pillar 5: Establish tools to for the co-creation of WIL experiences

A UWIL system is not achieved in isolation: the implementation of any WIL programming is dependent on partners from the workforce, academic and student community. Ultimately, the

Criteria	Co-op	Practicum	Clinical placement	Internship	Apprenticeships	Field placement	CSL	Live cases	Research	CPP	Volunteer	Entrepreneurship
Curriculum integration	M	M	M	M	M	M	H	H	H	C	C	C
Meta-skills	H	H	H	H	H	H	M	L	C	H	H	H
Partner role	H	H	H	H	H	H	C	C	C	L	L	L
Experimentation	C	C	C	C	C	C	C	C	C	H	H	H
Conceptualization	C	C	C	C	C	C	C	C	C	H	H	H
Reflection	H	H	H	H	H	H	H	H	H	C	C	C
Resource demands	H	H	H	H	H	H	C	C	C	M	M	M

Note(s): L = Low; M = Medium; H = High; C = The scoring of this area is too contextual to generalize

Table 5.
Sample WIL evaluation and alignment

findings we present here can be leveraged by all members of this learning ecosystem, including administrators, faculty, policymakers, accreditation bodies and community partners as a framework for operationalizing a UWIL strategy. At the core of our proposal is the contention that the talent challenge and the delivery of UWIL must be reframed as not simply a challenge facing PSE, but as a challenge facing the broader ecosystem of the workforce and the larger community. This reframing of the question introduces the potential for innovating the delivery of UWIL by leveraging the broader learning ecosystem to drive efficiencies and transformative learning.

This exploratory study should be considered as a contribution to a larger research agenda associated with graduate employability and the opportunities to enhanced collaboration between PSE and community. As a result, this study raises a series of questions that merit future research.

(1) Who is responsible for WIL? The student, the institution, the community?

(2) Will a personal mission act as an anchor for student decision-making?

(3) Do faculty-directed, student-directed and program-directed WIL have comparative outcomes?

(4) How do faculty-directed, student-directed and program-directed WIL complement each other?

(5) How is student-directed WIL best incorporated within UWIL?

(6) How do institutional size, program types and other contextual factors influence the perceived value of WIL?

(7) What are the potential negative implications of deploying UWIL?

(8) Do learning ecosystem members value WIL sufficiently to invest in it as a co-creator?

(9) How can tenure and promotion criteria be adapted to recognize faculty-directed WIL?

(10) What role do faculty networks play in facilitating faculty-directed WIL?

(11) What is the impact of introducing community-led learning experiences into established curriculums and programs of study?

In closing, we recognize the inherent challenge of expanding existing WIL initiatives into a larger UWIL strategy. For this reason, the value of this discussion is about stimulating an evidence-based debate about the merit of UWIL. As Christensen and Eyring (2011, p. 395) echo: "Ultimately it is those conversations that keep the university evolving adaptively." Ironically, the greatest challenges for this type of transformation are not external but rather internal to the practices and cultures of our own organizations (Rubin and Morgeson, 2013). To date, this project has been a relatively academic and theoretically driven exercise. We look forward to the opportunity to transition the proposed model from theory to practice, and to working with collaborators in PSE, in our student communities and in our workforce on the development of high-impact talent for our changing world.

Note

1. For this study, 450 h was chosen as a baseline as it is equivalent to one cooperative education work-term

References

Amanchukwu, R.N., Stanley, G.J. and Ololube, N.P. (2015), "A review of leadership theories, principles and styles and their relevance to educational management", *Management*, Vol. 5 No. 1, pp. 6-14.

Andrews, J. and Higson, H. (2008), "Graduate employability, 'soft skills' versus 'hard' business knowledge: a European study", *Higher Education in Europe*, Vol. 33 No. 4, pp. 411- 422.

Anyadike-Danes, M. and Hart, M. (2015), "Fecundity, fertility, survival and growth: high growth firms in the UK and their contribution to job creation, a demographic perspective", Working Paper, 20 September, available at: www.aston.ac.uk/EasySiteWeb/GatewayLink.aspx.

Barreto, I. (2010), "Dynamic capabilities: a review of past research and an agenda for the future", *Journal of Management*, Vol. 36 No. 1, pp. 256-280.

Baum, M., Schwens, C. and Kabst, R. (2015), "A latent class analysis of small firms' internationalization patterns", *Journal of World Business*, Vol. 50 No. 4, pp. 754-768.

Bierly, C. and Smith, A. (2019), *Making the Leap How to Take the Promise of Career-Connected Learning to Scale*, Bain & Company, available at: https://www.bain.com/insights/making-the-leap-how-to-take-the-promise-of-career-connected-learning-to-scale/.

Billet, S. (2011), *Curriculum and Pedagogic Bases for Effectively Integrating Practice-Based Experiences*, Australian Learning and Teaching Council, available at: https://www.vu.edu.au/sites/default/files/CCLT/pdfs/billett-wil-report.pdf.

Cedercreutz, K. and Cates, C. (2010), "Cooperative education at the University of Cincinnati: a strategic asset in evolution", *Peer Review*, Vol. 12 No. 4, p. 20.

CEWIL Canada (2019), "Work-integrated learning (WIL) definitions", available at: https://www.cewilcanada.ca/What_is_WIL_.html.

Chesbrough, H.W. (2003) "The era of open innovation", *Sloan Management Review*, Vol. 44 No. 3, pp. 35-41.

Chesbrough, H.W. (2011), "Bringing open innovation to services", *Sloan Management Review*, Vol. 52 No. 2, pp. 85-90.

Christensen, C.M. and Eyring, H.J. (2011), *The Innovative University: Changing the DNA of Higher Education from the inside Out*, John Wiley & Sons, Hoboken, NJ.

Coll, R.K., Eames, C.W., Paku, L.K., Lay, M.C., Hodges, D., Bhat, R., Ram, S., Ayling, D., Fleming, J., Ferkins, L. and Wiersma, C. (2011), "An exploration of the pedagogies employed to integrate knowledge in work-integrated learning", *Journal of Cooperative Education and Internships*, Vol. 41 No. 1, pp. 14-35.

Dean, B., Eady, M., Glover-Chambers, T., Moroney, T., O'Donnell, N. and Yanamandram, V. (2019), *WIL Pedagogy Overview*, University of Wollongong, available at: https://documents.uow.edu.au/content/groups/public/@web/@dvce/documents/doc/uow259307.pdf.

Eisingerich, A.B., Bell, S.J. and Tracey, P. (2010), "How can clusters sustain performance? The role of network strength, network openness, and environmental uncertainty", *Research Policy*, Vol. 39 No. 2, pp. 239-253.

El Sawy, O.A., Kræmmergaard, P., Amsinck, H. and Vinther, A.L. (2016), "How LEGO built the foundations and enterprise capabilities for digital leadership", *MIS Quarterly Executive*, Vol. 15 No. 2, pp. 141-166.

Elon University (n.d.), "Internships and cooperative education", available at: https://www.elon.edu/u/spdc/students/jobs-internships/internships-cooperative-education/.

Fede, J.H., Gorman, K.S. and Cimini, M.E. (2018), "Student employment as a model for experiential learning", *Journal of Experiential Education*, Vol. 41 No. 1, pp. 107-124.

Finch, D. and DePaul, R. (2015), *Designing YOU: Life Beyond Your Grades*, FDR Publishing. Calgary, Alberta.

Finch, D., Nadeau, J. and O'Reilly, N. (2013), "The future of marketing education: a practitioner's perspective", *Journal of Marketing Education*, Vol. 35 No. 1, pp. 54-67.

Finch, D., Deephouse, D.L., O'Reilly, N., Massie, T. and Hillenbrand, C. (2016), "Follow the leaders? An analysis of convergence and innovation of faculty recruiting practices in US business schools", *Higher Education*, Vol. 71 No. 5, pp. 699-717.

Finch, D.J., Peacock, M., Levallet, N. and Foster, W. (2016), "A dynamic capabilities view of employability", *Education + Training*, Vol. 58 No. 1, pp. 61-81.

Finch, D., Deephouse, D.L., O'Reilly, N., Foster, W.M., Falkenberg, L. and Strong, M. (2017), "Institutional biography and knowledge dissemination: an analysis of Canadian business school faculty", *Academy of Management Learning & Education*, Vol. 16 No. 2, pp. 237-256.

Gallego, Á. and Casillas, J.C. (2014), "Choice of markets for initial export activities: differences between early and late exporters", *International Business Review*, Vol. 23 No. 5, pp. 1021-1033.

Gault, J., Leach, E. and Duey, M. (2010), "Effects of business internships on job marketability: the employers' perspective", *Education + Training*. Vol. 52 No. 1, pp. 76-88.

Greiner, L.E. (1972), "The Greiner growth model", *Harvard Business Review*, Vol. 50 No. 4, pp. 37-46.

Grimpe, C. and Hussinger, K. (2014), "Resource complementarity and value capture in firm acquisitions: the role of intellectual property rights", *Strategic Management Journal*, Vol. 35 No. 12, pp. 1762-1780.

Hewitt-Dundas, N. and Roper, S. (2018), "Innovation in UK higher education: a panel data analysis of undergraduate degree programmes", *Research Policy*, Vol. 47 No. 1, pp. 121-138.

Jackson, D. (2016), "Re-conceptualising graduate employability: the importance of pre- professional identity", *Higher Education Research and Development*, Vol. 35 No. 5, pp. 925-939.

Kaplan, R.S. and Norton, D.P. (1996), "Using the balanced scorecard as a strategic management system", *Harvard Business Review* Vol. 74 No. 1 (January-February), pp. 75-85.

Karr, D. (2019), "Mobile app statistics. Martech", available at: https://martech.zone/app-store-statistics-apple-google-amazon/.

Knight, G.A. and Cavusgil, S.T. (2004), "Innovation, organizational capabilities, and the born- global firm", *Journal of International Business Studies*, Vol. 35 No. 2, pp. 124-141.

Kolb, D.A. (1984), *Experience as the Source of Learning and Development*, Prentice Hall, Upper Saddle River, NJ.

Krathwohl, D.R. (2002), "A revision of Bloom's taxonomy: an overview", *Theory into Practice*, Vol. 41 No. 4, pp. 212-218.

Kuh, G.D. (2008), "Excerpt from high-impact educational practices: what they are, who has access to them, and why they matter", *Association of American Colleges and Universities*, Vol. 14 No. 3, pp. 28-29.

Leonidou, L.C. (2004), "An analysis of the barriers hindering small business export development", *Journal of Small Business Management*, Vol. 42 No. 3, pp. 279-302.

Levie, J. and Lichtenstein, B.B. (2010), "A terminal assessment of stages theory: introducing a dynamic states approach to entrepreneurship", *Entrepreneurship Theory and Practice,* Vol. 34 No. 2, pp. 317-350.

Mitchell, C., Ray, R. and Van Ark, B. (2019), *C-Suite Challenge™ 2019: The Future-Read Organization*, Conference Board of Canada, New York, NY. available at: https://www.conference-board.org/publications/publicationdetail.cfm?publicationid=7691.

Mount Royal University (n d), "Marketing major", available at: https://www.mtroyal.ca/ProgramsCourses/FacultiesSchoolsCentres/Business/Programs/Marketing/Marketing%20Major.htm.

Papadopoulos, N. and Martín, O.M. (2010), "Toward a model of the relationship between internationalization and export performance", *International Business Review*, Vol. 19 No. 4, pp. 388-406.

Pardo del Val, M. and Martinez Fuentes, C. (2003), "Resistance to change: a literature review and empirical study", *Management Decision*, Vol. 41 No. 2, pp. 148-155.

Peltoniemi, M. and Vuori, E. (2004), "Business ecosystem as the new approach to complex adaptive business environments", *Proceedings of eBusiness Research Forum*, Vol. 2 No. 22, pp. 267-281.

Rafferty, A.E., Jimmieson, N.L. and Armenakis, A.A. (2013), "Change readiness: a multilevel review", *Journal of Management*, Vol. 39 No. 1, pp. 110-135.

Stirling, A., Kerr, G., Banwell, J., MacPherson, E. and Heron, A. (2016), *A Practical Guide to Work-Integrated Learning*, High-Education Quality Council of Ontario, available at: http://www.heqco.ca/SiteCollectionDocuments/HEQCO_WIL_Guide_ENG_ACC.pdf.

Rubin, R.S. and Morgeson, F. (2013). "Reclaiming quality in graduate management education". in Holtom, B.C and Dierdorff, E.C. (Eds), *Disrupt or Be Disrupted: A Blueprint for Change in Management Education*, Jossey-Bass, San Francisco, CA, pp. 297-345.

Sado, A., Cannon, E. and Jenkins, T. (2017), "Work-integrated learning provides students with the skills to prepare them for the changing labor market", *Policy Options*, available at: https://policyoptions.irpp.org/magazines/march-2017/linking-the-classroom-and-the-workplace/.

Sahney, S., Banwet, D.K. and Karunes, S. (2004), "Conceptualizing total quality management in higher education", *The TQM Magazine*, Vol. 16 No. 2, pp. 145-159.

Sattler, P. (2011), *Work-Integrated Learning in Ontario's Postsecondary Sector*, Higher Education Quality Council of Ontario, Toronto.

Stanford University (2019), "Purpose learning", available at: http://www.stanford2025.com/purpose-learning.

Theisohn, T. (2013), *Ownership Leadership and Transformation: Can We Do Better for Capacity Development*, Routledge, Milton Park, Abingdon, Oxfordshire.

Uner, M.M., Kocak, A., Cavusgil, E. and Cavusgil, S.T. (2013), "Do barriers to export vary for born globals and across stages of internationalization? An empirical inquiry in the emerging market of Turkey", *International Business Review*, Vol. 22 No. 5, pp. 800-813.

University of Victoria (n d), "Entrepreneurial Co-op", available at: https://www.uvic.ca/coopandcareer/co-op/secure-coop-job/entrepreneurial-coop/index.php.

University of Waterloo (n.d.), "Enterprise Co-op", available at: https://uwaterloo.ca/conrad-school-entrepreneurship-business/undergraduate/enterprise-co-op.

Usher, A. and Florizone, R. (2018), "The future of work-integrated learning", *Chronicle Herald*, available at: https://www.thechronicleherald.ca/business/commentary-the-future-of-work-and-learning-243765/.

Yoo, Y., Boland, R.J. Jr, Lyytinen, K. and Majchrzak, A. (2012), "Organizing for innovation in the digitized world", *Organization Science,* Vol. 23 No. 5, pp. 1398-1408.

Van Der Duin, P., Ortt, R. and Kok, M. (2007), "The cyclic innovation model: a new challenge for a regional approach to innovation systems?", *European Planning Studies,* Vol. 15 No. 2, pp. 195-215.

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