A COVID-19 work-integrated learning strategy for entrepreneurial mindset reflections: Case study in Mexico

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In the current context of COVID-19 and the limited availability of physical workplace settings for work-integrated learning (WIL), this study explores the intervention of a WIL pedagogical strategy in order to support career development learning during the pandemic. The innovative Entrepreneurial Mindset (EM) reflective model introduced at a Mexican University employs experienced entrepreneurs as professors and mentors to teach entrepreneurial mindset reflection via online modality. The effectiveness of the model as a teaching and learning tool is assessed in a class survey of 203 students. The study concludes that although the application of the EM model to the curriculum is well suited to a non-physical workplace environment, the survey to assess mindset reflections could have been conducted both at the beginning (pre survey) and at the completion (post survey) of the course, to assess any changes in mindset reflections between pre and post. However, the introduction of 'growth' mindset reflections to a curriculum is a significant contribution to WIL literature and a valid COVID-19 strategy.

Keywords: COVID-19, entrepreneurial mindset, work skill development (WSD) framework, entrepreneurial education.

The COVID-19 pandemic has triggered change, invoked challenges and prompted the creation of new options for the future of work-integrated learning (WIL) pedagogy. WIL is a vehicle for student transition from the university to the workplace (Jackson 2015) often practiced in a physical workplace (Cooper et al., 2010). However, with the onset of the pandemic several restrictions were imposed on the practice of WIL in a physical workplace. Therefore, the new challenges in rebuilding an economy, generating appropriate employment and reskilling in competencies will be critical to survive the 21st century economy.

Research suggests that appropriate training in entrepreneurship can bring change in the society and the economy of a country (Hameed & Irfan, 2019), and help (us) adapt to a changing environment (Haynie et al., 2010). Within this context, this study introduces an innovative tool, the Entrepreneurial Mindset (EM) model, to develop an entrepreneurial skill set to reflect and act in unpredictable situations.

The EM model and its mindset reflection is an innovative concept introduced in this study. It is based on both, Carol Dweck's (2006) growth mindset, where an individual believes you can learn and grow even by making mistakes and remaining positive and, the concept of reflective practice (Gibbs, 1988; Moon, 1999) which is interpreted here as reflecting on the current context in order to improve for the future.

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The mindset function is an experiential method of learning that is achieved through the thinking process of the mind and can be practiced in a non-physical workplace. David Boud (1994), refers to this process as "reflection-in-action" (p.51) or the process where the individual is aware of the decisions being made by themselves and others. The Entrepreneurial Mindset is one that offsets challenges and encourages individuals to reflect upon their mistakes, and continuously improve skill sets to turn ideas into actions with competence and self-confidence, especially in the current COVID-19 context.

The paper will first discuss the background literature to the research, followed by the underlying principles of the EM model, the pre- and post-COVID-19 changes to the curriculum (in the case study), and then conclude with the findings of the in-class survey, including limitations, and suggest alternatives for the future.

LITERATURE REVIEW

Entrepreneurial Mindset

Many definitions of entrepreneurial mindset raise the concept of uncertainty such as the 'ability to sense, act, and mobilise under uncertain conditions' (McGrath & MacMillan, 2000, p. 15), 'ways of thinking about business that focuses on and captures benefits of uncertainty' (Ireland et al., 2003, p. 968), and 'respond to a judgement under uncertainty' (Shepherd et al., 2010, p. 62). Few definitions refer to the use of the entrepreneurial mindset to adjust to situations and the 'ability to identify and exploit opportunities' (McMullen & Kier, 2016, p. 664). Other definitions refer to specific entrepreneurial mindset competencies, such as 'growth oriented perspective through which individuals promote flexibility, creativity, continuous innovation, and renewal' (Ireland et al., 2003, p.968), 'think, reason, make decisions, plan and set goals in a relatively unique way' (Davis et al., 2016, p.2). A more recent definition of an entrepreneurial mindset describes it as a way of thinking that offsets challenges and encourages individuals to reflect upon their mistakes and continuously improve skill sets to turn ideas into actions with competence and self-confidence (de Villiers Scheepers et al., 2018).

Researchers have identified different skills, knowledge and experiences as contributing towards entrepreneurial success. For example, Murray (1996) emphasizes the importance of personal background and commercial experience, history of innovation, production and marketing experience, status, entrepreneurial experience, and previous contact with venture capitalists. Basu and Goswami (1999) imply educational attainment, previous business experience (including family background) as influential factors. Deakins and Freel (2003) refer to risk factors in managing a venture, Gasse and Tremblay (2011) emphasize leadership skills and managerial skills, and Ahmetoglu et al. (2011) prioritize emotional intelligence.

Jackson (2017) used structural reflection to examine how the placement (WIL) influenced the career objectives and developed self-awareness in career planning of business students to help them improve personal development strategies. The mindset thinking strategy in entrepreneurship has changed to be parallel with the times and context of its use.

Carol Dweck (2006), pioneer of mindset psychology, claims that social and emotional competencies are pre-requisites for skills based training. Research on entrepreneurial mindsets shadowing entrepreneurial careers, identifies alertness (Tang et al., 2012), risk taking (Busenitz, 1996; Sitkin & Pablo, 1992; Solesvick, 2013), human capital (Unger et al., 2011; Westhead et al., 2011), and identification of opportunities (Gimeno et al., 1997) as those required competencies. Mitchelmore and Rowley (2010)

agree that although the concept of entrepreneurial competencies is used widely for economic development and business success, the core concept of entrepreneurial competencies, its measurement and its relationship to entrepreneurial performance and business success, needs further research and development. This proves that although previous research identifies competencies in an entrepreneurial mindset, there is no reference to its application to career skills development or WIL pedagogy. The EM model proposed in this study fills that gap.

Entrepreneurial Education

Entrepreneurial education entails the pedagogical education for teaching entrepreneurial attitudes, skills and behaviors (Fayolle et al., 2006). The target audience could be those who choose a career in entrepreneurship and seek employment (Jamieson, 1984; Liñán, 2004) or, to aspiring entrepreneurs (Weber, 2011), or those who seek employment more generally. Yet, to date the research into the process of teaching those skills in higher education is limited. For instance, entrepreneur curriculum in the past focussed more about setting up a business and the reasons for, with limited hands on student engagement in a project or activity (Pittaway & Edwards, 2012). Kassean et al. (2015) believe there should be greater reflection on action and experiences in the real world. However, many entrepreneurial courses still focus on planning and prediction (Daniel, 2016; Sarasvathy, 2008) and continue to use a business plan as a method of teaching (Linton & Klinton, 2019).

To date there is little consensus on how to teach Entrepreneurship. Neck and Greene (2011) posit teaching is a method, a way of thinking and acting, and is more relevant than learning specific content. They believe that teaching is about helping students understand, develop, and practice the skills and techniques that are required to manage careers in uncertain labor markets. Linton and Klinton (2019) on the other hand, strongly argue for a design thinking approach in learning to highlight the process, role of skills, and the mindset. De Villiers Scheepers et al. (2018) perceive that the experiential development of an entrepreneurial mindset enables students to solve career challenges by viewing these as opportunities. Krueger (2007) believes the mental models underlying the cognitive approach provides the ways and means to address such questions, and reveal their potential of providing both skills and increased confidence to students. By this method, the students learn by both doing and thinking (Krueger, 2007).

Reflective Thinking

The basis of the EM model in this research is reflective thinking. Reflective thinking is a part of critical thinking process that entails analysing and making judgements about what has happened (Kolb, 1984), such as post-COVID changes to WIL pedagogy, and then making relevant curriculum adjustment, as done in this study. Some of the formative research in reflective thinking include the works of Dewey (1933), Schön (1983), Boud et al. (1985), Loughran (1996), Mezirow (1991), Seibert and Daudelin (1999), and Rogers (2001).

Patrick et al. (2008) are of the opinion that critical reflection provides a bridge between the university and the workplace, and for the preparation of work ready graduates. WIL, particularly through internships and work placements for students, is viewed as a valuable approach for students developing skills in reflective practice.

Thus, the literature supports the embodying of specific entrepreneurial competencies within an entrepreneurial curriculum, but does not refer to the ways in which it is taught in practice. In contrast, the use of reflective practice in the EM model in this study, acts as the conduit that connects the

theoretical entrepreneurial competencieswith reflective practice in entrepreneurial pedagogy, to fill this gap. Further, the value of EM and its reflective practice lies in its support for graduate job seeking/job creation efforts in the changing post COVID labour market.

ENTREPRENEURIAL MINDSET REFLECTIONS

The aim of this study is to explore the intervention of a WIL pedagogical strategy to support career development during the COVID-19 pandemic. The primary objective is to demonstrate how the entrepreneurial mindset (EM) reflective model, together with hired professional entrepreneur staff using online modality, provide career development learning outside a physical workplace. The second objective is to assess the impact of this new COVID pedagogy via a student in-class survey.

The Entrepreneurial Mindset Model

The EM model is based on an internationally validated WIL framework, the Work Skill Development (WSD) framework, used previously as the foundation for developing several other career development models through reflective practice (Bandaranaike, 2018). The WSD comprises six work skill competencies identified as: initiative and goal orientation, technology and creativity, lifelong learning and reflection, critical thinking and synthesis, planning and management and communication and collaboration. Students use reflective questioning in each of these facets to understand the progress made during a placement (Bandaranaike et al., 2012) or progress in career development (Bandaranaike & Kimmerly, 2014). In this study, the focus is on applying a modified WSD to set up or engage in entrepreneurial activity. The six WSD competencies are combined with entrepreneurial competencies, derived from entrepreneurial literature and mindset thinking, to ascertain the six generic EM competencies in the model: initiative & enterprise, creativity & innovation, lifelong learning & future orientation, risk taking & critical thinking, leadership & management and, communication & collaboration as illustrated in Table 1.

The purpose of teaching the EM and its mindset reflections (Table 1) is, to inform students on entrepreneurial competencies and train them to operate their future business activity in unpredictable business environments, such as COVID-19, and its aftermath.

TABLE 1: From Work Skill Development framework to EM reflections model

WSD Competency (adapted from WSD, Bandaranaike, 2018)	Entrepreneurial Mindset (EM) *(reflection)*	Entrepreneurial competency focused reflection
Initiative & Goal Orientation *(motivation to engage)*	Initiative & Enterprise *(How do I engage*	intrinsic motivation; inquiry; business savvy; business acumen; passion; curiosity; goal oriented; self-efficacy, self-reliance.
Technology & Creativity *(creative inspiration)*	Creativity & Innovation *(How do I inspire?)*	innovative and adaptive to change; intuitive knowledge of new technology; free thinking; creative solutions; opportunity recognition; data base reasoning.
Lifelong Learning & Reflection *(future projection)*	Lifelong Learning & Future Orientation (*What is the direction?)*	business viability; selectivity; focus on choices; assess feedback; challenge procedures; change strategic vision into operational terms.
Critical Thinking & Synthesis *(voice in decision making)*	Risk Taking & Critical Thinking *(How do I manage?)*	accept change and uncertainty; review success and failure; problem solving; task oriented; stoicism in adversity.
Planning & Management *(cognitive & emotional engagement)*	Leadership & Management *(How do I guide?)*	guided management and planning; social and emotional sensitivity, cultural integrity, accountability; empowering others; vision.
Communication & Collaboration *(relating to others)*	Communication & Collaboration *(How do I connect?)*	networking; building a community of practice; persuasive communication; virtual collaboration; emotional, social & cultural sensitivity; creating social capital.

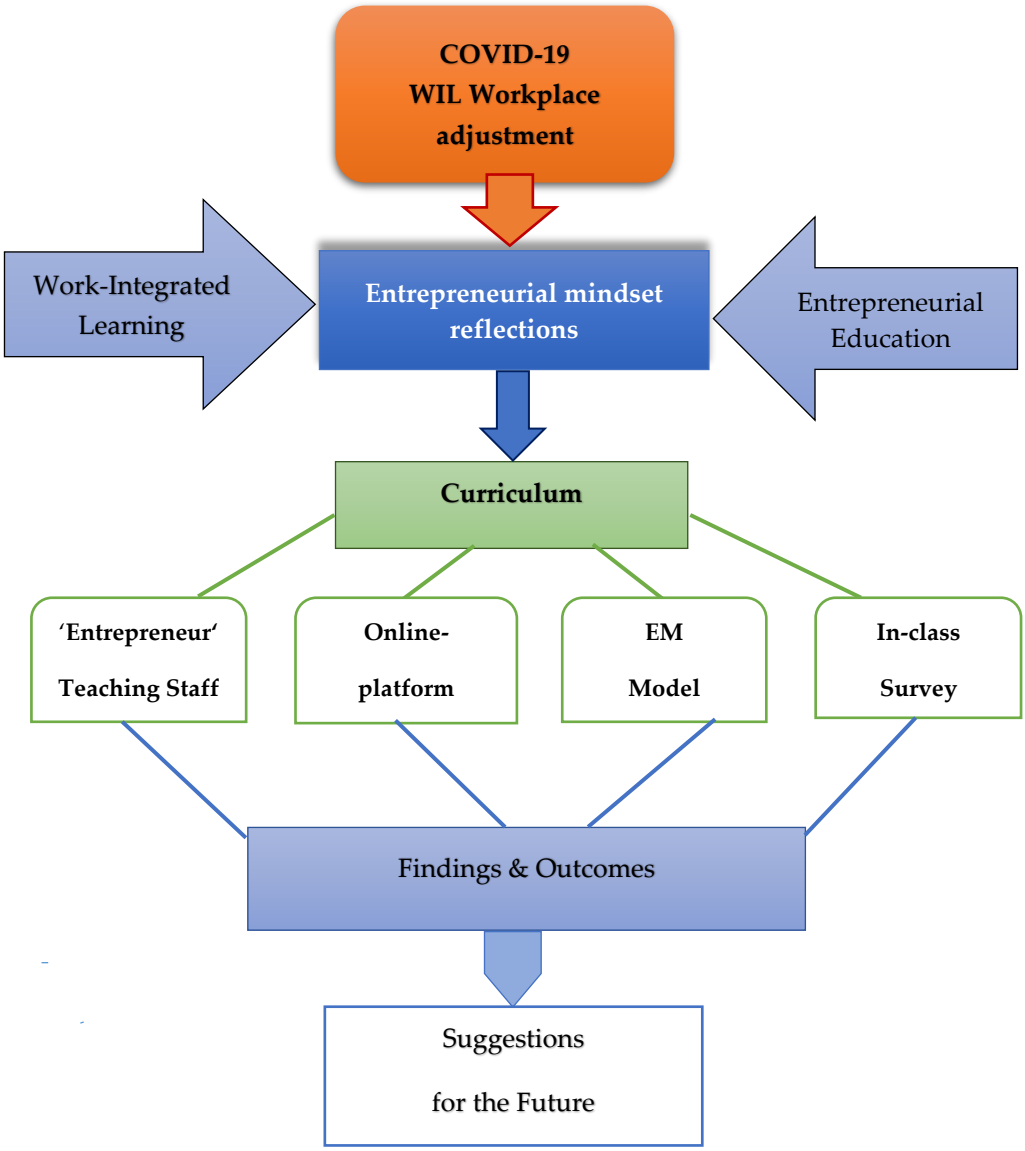
CASE STUDY

Post-COVID-19 Curriculum

This case study is based on the capstone WIL course, Gestión de Proyectos (Project Management), at the Universidad del Valle de Atemojac (UNIVA), Mexico, which is open to all disciplines irrespective of previous training in entrepreneurial education, and conducted over the course of four months.

The objective of the course is to provide students with an opportunity to integrate entrepreneurial knowledge and competencies in designing a business venture over the duration of the module (Universidad del Valle de Atemojac (UNIVA), 2016).

FIGURE 1: Structure of the case study



In the COVID-19 context, where students are unable to practice WIL in a physical workplace, the curriculum focuses on developing entrepreneurial competencies through EM reflections, and the use of on-line delivery including virtual business simulations (vSIMBus) instead of face-to-face workplace projects. The curriculum focuses on knowledge of business start-up basics, experiential project based learning, business ideation, creation of a business plan, and presentation at a business pitch event. While the course structure is similar to traditional curriculum, the difference at UNIVA is the accompanying mindset reflection embedded in the teaching content (see Table 2).

Throughout the course students participate in discussions and presentations, and collaborate with real entrepreneur experienced professors and mentors to extend their learning beyond formal classroom contexts using online/e-platforms. The post COVID curriculum changes in the teaching at UNIVA are summarized in Table 2. (Note that professor is the Spanish terminology for a member of teaching staff).

Mindset Reflection in the Curriculum

Each segment of the course is designed to reflect the authenticity of entrepreneurial issues connected with a start-up and functioning of a business venture with a special emphasis on sustainability and social entrepreneurship. The business venture is a start-up of a small business enterprise with the objective of financial gain. Students engage in mindset thinking to explore ideas learnt from the course to finalize a simulated business venture. Multiple hired stakeholders with entrepreneurial experience deliver course content and have on-line contact with students during the course. Thus, issues related to the COVID interruptions and the loss of physical contact with the workplace entrepreneurs are minimized. Students directly benefit from replication of the workplace on campus, as it maximizes contact time with mentors and the uniform access to experts in the field.

Although the impact of COVID-19 resulted in the loss of some physical and social interactions, this was soon adjusted with the use of software such as Microsoft Teams, vSIMBus (virtual business simulation) and Moodle online resourcing. The vSIMBus) programs, offer interactive learning experiences that present simplified and minimized real-life models. Students can experiment with different strategic scenarios, or demonstrate a business process by learning from hired professional entrepreneurs using the e-platform. The UNIVA pedagogical style of instruction offers students a particularly valuable learning experience during the restrictions imposed by COVID-19 to access physical workplaces.

The COVID-19 teaching strategy used to achieve the EM learning outcomes and skills is summarized in Table 3, and further explained under the sub-headings.

Class instruction

These classes are instructed by hired professors with an entrepreneurial background using Microsoft Teams and Moodle. The assignments take the form of case studies on virtual simulation, vSIMBus, online readings and assignments. Using discussion boards students critically reflect on case study readings provided each week and with their professors, engage actively in discussions and apply mindset thinking to the content of the readings. These case studies and virtual simulations promote authentic participation in learning and the practice of management strategies for their business venture. In class active participation and feedback on mindset thinking is assessed weekly (Table 3).

TABLE 2: Pre- and Post-COVID-19 WIL Curriculum at Universidad del Valle de Atemojac (UNIVA), Mexico

Core Instruction	Pre/Post Curriculum Change	Embedded post-COVID Mindset reflection
CLASS INSTRUCTION – Conducted by entrepreneurial background professors	Pre-COVID on campus face-to-face with professors. *Post-COVID* Microsoft Teams and Moodle. Case studies virtual simulation vSIMBus research and assignments	Focus on WIL Learning outcomes using EM. Project oriented instruction. vSimBus creates scenarios online using EM facets.
BOOTCAMP – intensive instructions full day	Pre-COVID face-to-face on campus Post-COVID on-line activity via Microsoft teams and vSIMBus	Focus on success and failure of entrepreneurial ventures to engage and inspire, for creativity, innovation, reflection and improve EM thinking.
TEAM WORK – students assigned to a team. Each team works on one idea	Pre-COVID worked individually in industry. Post-COVID uses Microsoft Teams, vSIMBus of real business cases. Followed by Teams assigned to a Mentor face-to-face instruction on campus	Study the impact of EM on real business cases, critical thinking and problem solving. Team members share and promote ideas to connect and collaborate via interactive communication.
FEEDBACK- assessment of student performance	Pre-COVID face-to-face in class. Post-COVID via Microsoft Team and Moodle	Communication and Reflection to improve and manage change. Visualize a problem as an opportunity.
MENTORING – sharing personal experience and providing guidance	Pre-COVID face-to-face Post-COVID via Microsoft Team and Moodle	Motivation to engage, reflection on viability of business venture. Goal setting, career reflection, networking, strategies, identifying resources.
INTERVIEWING – information gathering, collating	Pre-COVID on site visits Post-COVID via phone and Microsoft Teams	Communication techniques of listening and reflecting. Consulting. Assess feedback and decision making.
PITCH EVENT - Conducted with stakeholders, students, professors and mentors	Pre-COVID on campus with stakeholders Post-COVID with all Microsoft Teams,	Focus on success and failures of entrepreneurial enterprises. Think uncertainty and risk. Practice creativity and build a community of practice.

TABLE 3: Developing mindset reflections in course content, Universidad del Valle de Atemojac (UNIVA), Mexico.

Mode of Teaching	Facilitating Mindset Reflection (*EM competency)*
Class Instruction	• Develop Business knowledge online (*Initiative & Enterprise*)[1] • Opportunity to innovate and adapt to change (*Creativity & Innovation*) • Appreciate guided management and planning (*Leadership & Management*) • Develop self-reflection with feedback (*Lifelong Learning & Future Orientation)* • Evaluate success and failure with vSimBus online (*Risk taking & Critical thinking)* • Develop persuasive communication online (*Communication & Collaboration*)
Bootcamps	• Recognize opportunities and new ideas (*Creativity & Innovation*) • Validate business ideas with peers (*Communication & Collaboration*) • Validate and select business ideas (*Lifelong Learning & Future orientation*) • Review business practices including successes and failures from real business owners and other stakeholders (*Risk Taking & Critical thinking*) • Building a community of practice, identification of mentors (*Communication & Collaboration*) • Develop curiosity by noting business leader's actions (*Leadership & Management*)
Teamwork & Interviews	• Understand and develop new communication techniques of listening in an online environment (*Communication & Collaboration*) • Ability to cooperate and work with others (*Communication & Collaboration*) • Increase the ability of maintaining working relationships and respect diversity (*Communication & Collaboration*) • Assess and learn from failure (*Risk Taking & Critical thinking*) • Learn how to empower and help others (*Leadership & Management*) • Assess ideas and opportunities with others (*Creativity & Innovation*)
Mentoring & Feedback	• Recognize personal motivation to engage (*Initiative& Enterprise*) • Reflection on viability of business venture (*Creativity & Innovation*) • Diagnose decisions and goal setting (*Lifelong Learning & Future orientation*) • Measure improvement of business plan (*Leadership & Management*) • Visualize problems and create solutions (*Risk taking & Critical Thinking*) • Demonstrate ability to listen and work with others (*Communication and Collaboration)*
Pitch Event	• Show passion in delivering ideas (*Initiative & Enterprise*) • Indicate use of contemporary technology (*Creativity & Innovation*) • Show adaptation to COVID limitations (*Lifelong Learning & Future Orientation*) • Think uncertainty and risk in business ventures (*Risk taking & Critical Thinking*) • Project the final plan and business idea to a potential investor (*Leadership & Management*) • Comprehensive & clear presentation to investors (*Communication & Collaboration*)

[1] EM competencies will overlap in practice. Therefore, only the leading EM competency is identified against the given activity.

Bootcamps

Bootcamps are an intensive full day of online activities and presentations led by a selection of successful business owners, leaders, government personnel, professors, mentors and students. The participants engage in group assignments during which they learn about the challenges that arise in practicing sustainable development goals of the United Nations (2020) . Here, students reflect on the needs of the community by generating business ideas and validating them with the information provided. Online presentations are held in different forums with different stakeholders such as successful business entrepreneurs and government representatives. These presentations provide students the tools to improve their knowledge of organizations, missions, policies, rules, regulations and apply it to their own business ideas. Students are assigned to a group and throughout the day have the time to explore ideas and determinate what business ideas (venture) should be selected for their final pitch presentation. In addition, students are given the opportunity to select their mentor and contribute to their group discussion while planning their project (Table 3).

Teamwork and interviewing

Here, students are required to make extensive use of dialogue to validate personal ideas with their group of peers. Team members are also required to interview business leaders and/or successful business owners (assigned by Mentor) to ask questions, reflect, share practices and promote knowledge. The students are then asked to find questions and answers from those interviews that may help them develop their own reflective thinking to create business ideas. They are required to work as a team and must meet online at least once a week during the term and have an opportunity to connect and meet with at least one business owner during that period (Table 3).

Mentoring and feedback

Students have the opportunity to select a mentor during the bootcamp. The role of the mentor is to support the teams in planning and executing their business idea during the term. The mentor is an expert in the field and is able to help link work experiences and real case scenarios with the team's projects. The mentor also helps students focus on mindset reflections to develop a venture and provides constructive feedback on their reflections as well as individual and group progress (Table 3).

Pitch event

This is the final online event conducted with all stakeholders of the entrepreneurial ecosystem, including investors, business leaders/owners, mentors, professors and students. Each group of students have the opportunity to present their business venture and ideas in a pitch. With this assignment students use mindset thinking to demonstrate different aspects of a business and select the elements most important (to present) in the pitch. In addition, each student in each group showcase their presentation skills within their group, and spend the day networking online with stakeholders and different groups (Table 3).

THE SURVEY

The effectiveness of the EM reflection model in a teaching and learning context was followed through in an in-class survey, using convenience sampling, tocapture the extent to which the students reflected and applied entrepreneurial mindset reflection. The survey was initially designed in English and was translated and conducted in Spanish (the students' first language), to then be translated back to English. No ethical approval was required from UNIVA to conduct this survey since the UNIVA Research Centre has blank approval of all in-class student surveys.

This structured survey involved 25 variables designed to elicit information on mindset thinking was administered in March 2020, to 203 students enrolled in the course, *Gestión de Proyectos* (Project Management) at UNIVA. The students comprised 42% males and 58% females. The age of the respondents varied between 18 and over 27 years, with 35% between age 18 and 20, 56% between 21 and 23, 6% between age 24 and 26, and 3% age 27 and above. More than half the students (57%) were already working as employees in a business, 13% were owners of a small business, and 30% were neither employees nor business owners.

The survey questions were based on recent literature on mindset thinking (Gold & Rodriguez, 2018), and designed to surmount the COVID-19 disruption through futuristic thinking. In other words, they were designed to study the ability to look past the current COVID-19 implications and into the possibilities of tomorrow. This approach visualizes innovation in technology, new ideas about products, services, marketing strategies and business models, to create a community, uncover patterns, focus on signals and correct mistakes from the past (Ramage, 2011).

Table 4 gives a sample of the survey questions (for each EM competency) with reference to student reflections on setting up a business activity in the current COVID-19 context. The responses to these questions are then graphed and analyzed below.

TABLE 4: In-class survey ad entrepreneurial mindset reflections – a sample

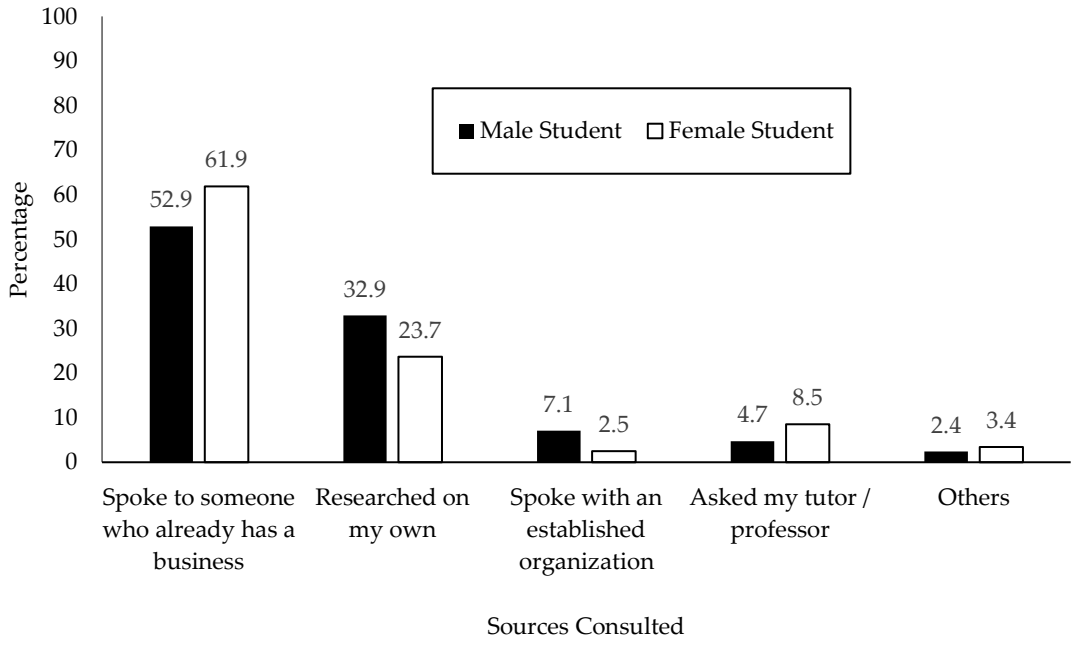
EM competencies and associated reflections	Sample questions from the Survey – *'In thinking of setting up your business activity …"*
Initiative and Enterprise (reflect on how to engage in a business start-up)	a. whom did you consult with? [*Figure 2*] b. what are your goals?
Creativity and Innovation (reflect on potential challenges and how to inspire others on your product/service)	c. what are the main challenges? [*Figure 3*] d. how do you intend selling your ideas to sponsors and investors
Lifelong Learning and Future Orientation (reflect on your entrepreneur skills and intended contribution to your country)	e. what are the most important entrepreneurial skills [*Figure 4*] f. what are your main social & environmental responsibilities or the future?
Risk Taking and Critical Thinking (reflect on your strengths and weaknesses, and in managing risk)	g. what do you perceive are the potential risk factors? [*Figure 5*] h. what is your perceived level of familiarity with key entrepreneurial skills? [*Figure 6*]
Leadership and Management (reflect on how you would guide others and show national leadership)	i. what are the important management skills? [*Figure 7*] j. how do you show post COVID leadership in the Mexican economy? [*Figure 8*]
Communication and Collaboration (reflect on how you will connect with others to network and build social capital)	k. what are the most important communication skills for a successful entrepreneur? [*Figure 9*] l. how do you rate yourself as a communicator? [*Figure 10*]

The significance of the survey is two-fold. Firstly, it provides practical guidance in mindset reflection for a business setup in the post-COVID-19 context, and secondly, it assesses the understanding of the EM competencies by the students.

Initiative and Enterprise

Mindset reflections that engage in a business activity indicate the willingness to inquire into success and failure when setting up core business activity. Entrepreneurial initiative is the ability to turn ideas into action with a high degree of intrinsic motivation, business acumen and self-efficacy (Murray, 1996). As noted by Basu and Goswami (1999), prior knowledge and previous experience associated with entrepreneurship may have a distinct advantage in setting up a business. Students therefore responded to an open-ended survey question *'In thinking of setting up your business, whom did you consult with?'* Their initiative was assessed in terms of whom they consulted or how they accessed information through inquiry, research, or personal experience. Thirty-five percent said they spoke to someone who already had a business, another 35% said they conducted their own research, 8.9% spoke with an established organisation, 17.5% with teachers and 3.7% engaged in dialogue with others. Taking gender of the respondents into account (Figure 2), more females (61.9%) spoke to existing entrepreneurs in a business than male counterparts (52.9%). Males (32.9%) opted for individual research, in contrast to females (23.7%) or spoke with an established organization (Figure 2). However, statistical testing found that gender differences were not significant ($p > 0.05$) which is possibly due to the fact that Mexican females seemed to trust their personal networks more for validation of their thoughts (mindset validation) than males. Generally, males are reluctant to contact an established organization due to their potential lack of credibility, fear of vulnerability or social pressure (Ernesto Amoros and Terjesen, 2010).

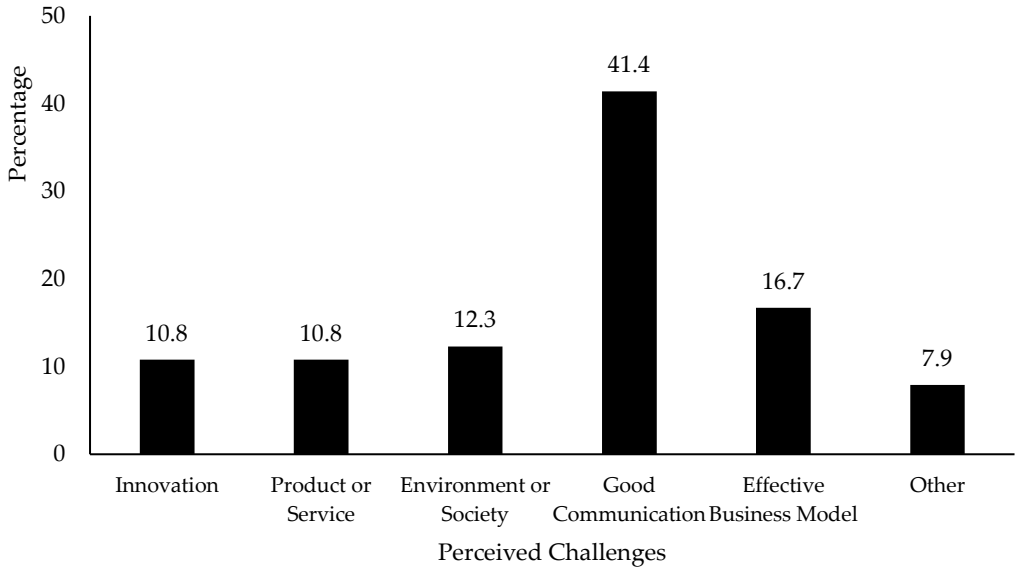
FIGURE 2: Percentage by gender of student initiative to engage in inquiry prior to setting up a business,



Creativity and Innovation

Innovation is vital to entrepreneurship and is the process of reflecting on challenges and turning them to opportunities even before their demand exists. Entrepreneurs should look for opportunities in situations where others tend to see them as challenges (Reed & Storrud-Barnes, 2010; Sarasvathy et al., 1998). Thus when asked to reflect on the question '*What are the main challenges in starting up a business'?*, A majority (41.4%) of the students responded that in their opinion, having Good Communication skills was an important challenge in setting up a business. A further 16.7% perceived knowledge of an effective Business Model and awareness of the impact (of their business0 on the Environmnet and/or Society (12.3%) were potential challenges (Figure 3). The EM model through its reflective practice platform helps to turn these challeges into opportunities .

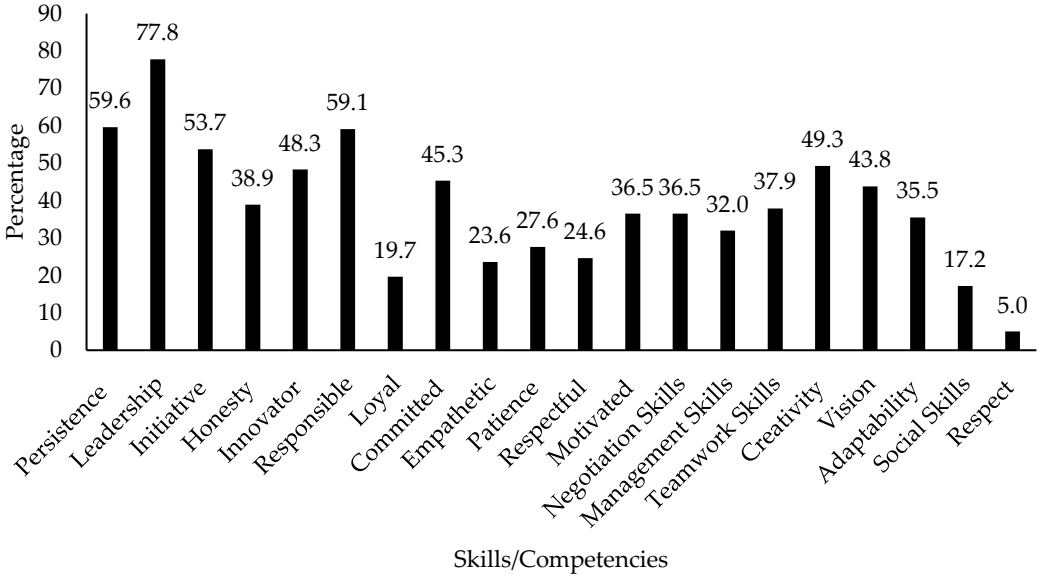
FIGURE 3: Percentage of student EM reflections on challenges in starting a business.



Lifelong Learning and Future Orientation

EM reflections on the present and future business orientation (lifelong learning) are essential to engage in marketing strategies. Ireland et al. (2003) suggest that successful future strategists will be conscious of unforeseen long term consequences and learn to operate even under unpredictable circumstances. Each student was asked to reflect and name five competencies they believe are of most importance to a future oriented entrepreneur. Approximately seventy eight percent (77.8%) perceived Leadership as one of the most important competencies of a successful entrepreneur, followed by Persistence (59.6%), Responsibility (59.1%), Initiative (53.7%), and Creativity (49.3%) (see Figure 4.

FIGURE 4: Percentage of student EM reflections on skills/competencies required of a future oriented entrepreneur.

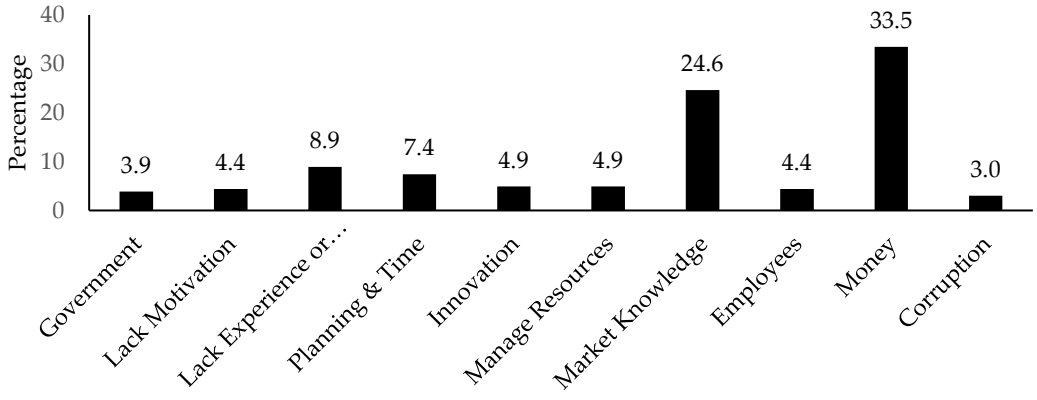


Risk Taking and Critical Thinking

In the contemporary COVID-19 context, reflecting on risk taking is highly relevant to setting up a business. In entrepreneurial behavior, risk taking refers to a person's willingness to commit to sources of opportunity with a possibility of failure. An individual disposition towards risk is considered the personality trait that determines the tendency and proclivity of the individual to take risks (Rauch & Frese, 2007).

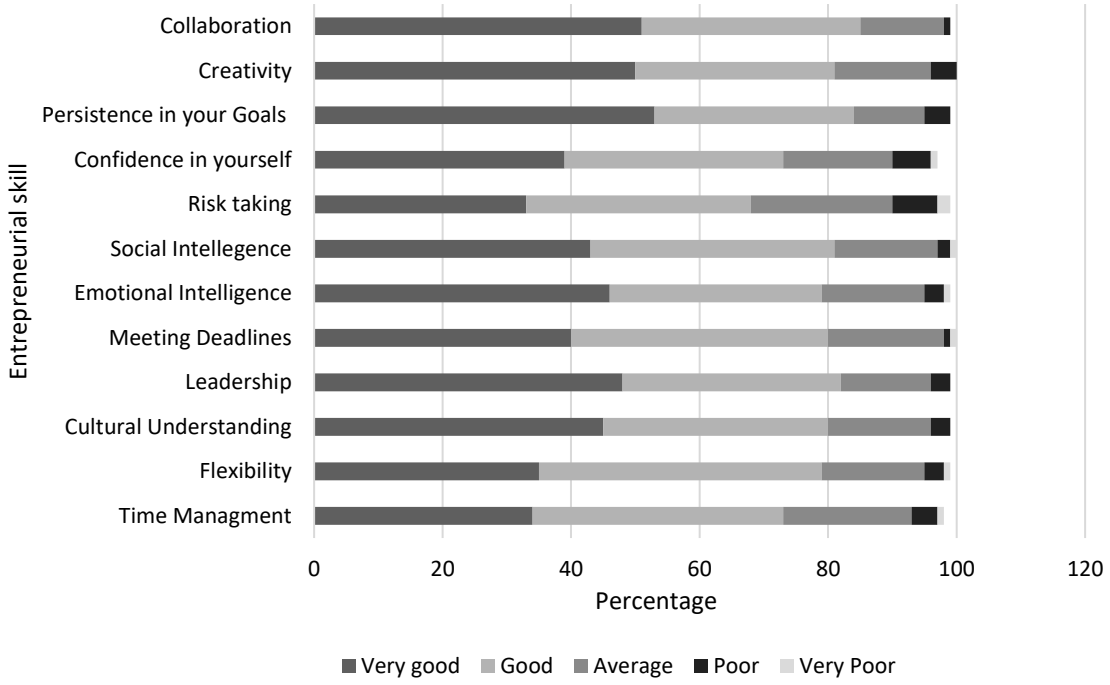
Mindset reflections on risk taking were assessed via a student's perceptions on challenges and risks associated with setting up future business activity (Figure 5). As would be expected in the current COVID context, students identified Money (33.5%) and Knowledge of the current market (24.6%) as the major risk factors.

FIGURE 5: Percentage of student EM reflections on potential risk factors in a business start-up.



Thinking of their future entrepreneurial careers, students were asked to reflect on their perceived level of familiarity (knowledge/practice) in key entrepreneurial skills on a Likert Scale ranging from 1 (very good) to 5 (very poor) (Figure 6). Overall, 73.4% perceived a very good to good level of performance in their competencies. Persistence in reaching goals (53.2%) was rated very good followed by Collaboration (50.7%), Leadership (47.8%), and 'Emotional intelligence (45.8%). It is probable that the high rating in Leadership scores is because the students are exposed to leaders in diverse businesses during their bootcamp activities and throughout class presentations that assisted them to identify the characteristics of a good leader. This exposure enables them to reflect and apply their mindset and skill sets to what will work best for their individual practice.

FIGURE 6: Percentage of student EM reflections on perceived level of familiarity in entrepreneurial skills

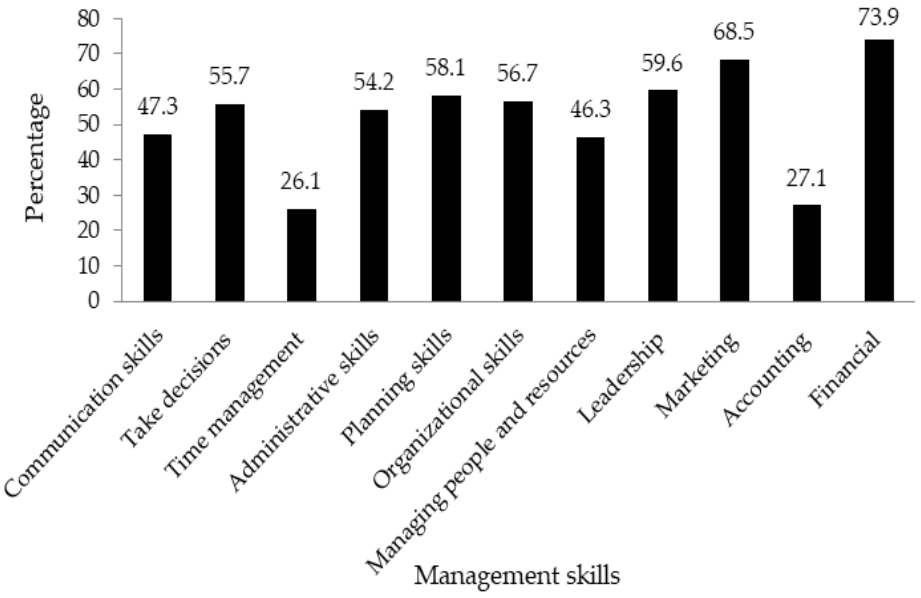


Leadership and Management

Mindset thinking on Leadership and Management skills was assessed through finance and marketing skills embedded in the course content as well as the first hand interactions with financial institutions, mentors and the entrepreneur professors to learn successful business and financial practices. Students eventually input their reflections on all of the aforementioned competencies at the final pitch event, where they present their business plan to potential (real) investors and government representatives.

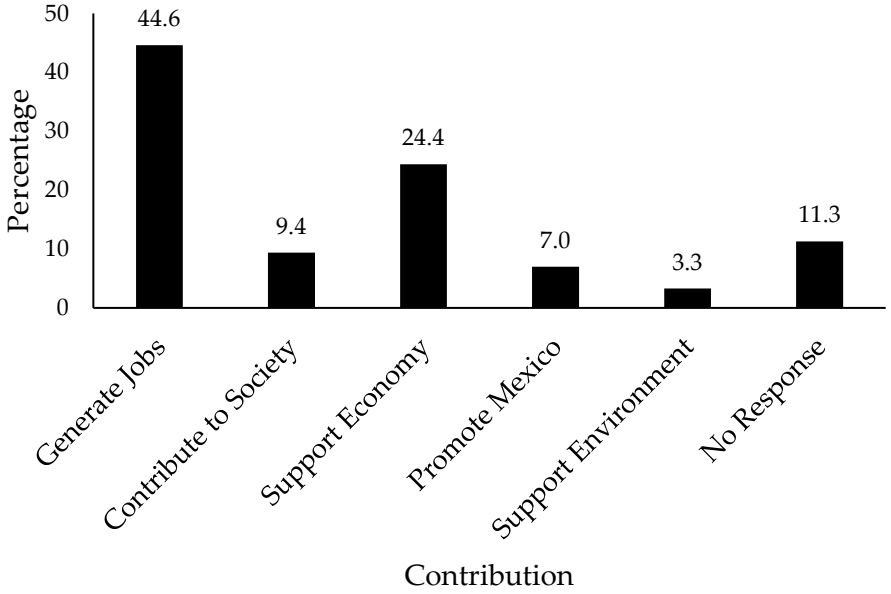
According to the survey, students perceived Financial acumen (73.9%) as of relatively high importance to business management, followed by Marketing skills (68.5%) (see Figure 7).

FIGURE 7: Percentage of student EM reflections on management skills required in a successful business.



Entrepreneurial leadership also entails mindset reflection on the different ways in which an individual will contribute to the local community and the national economy. With the adverse effects of COVID-19 on business, it is inevitable the Mexican economy will require new job replacement. As such, 44.6% reflected on Generate jobs as a priority, with a further 24.4% on Support Economy (Figure 8) as a priority.

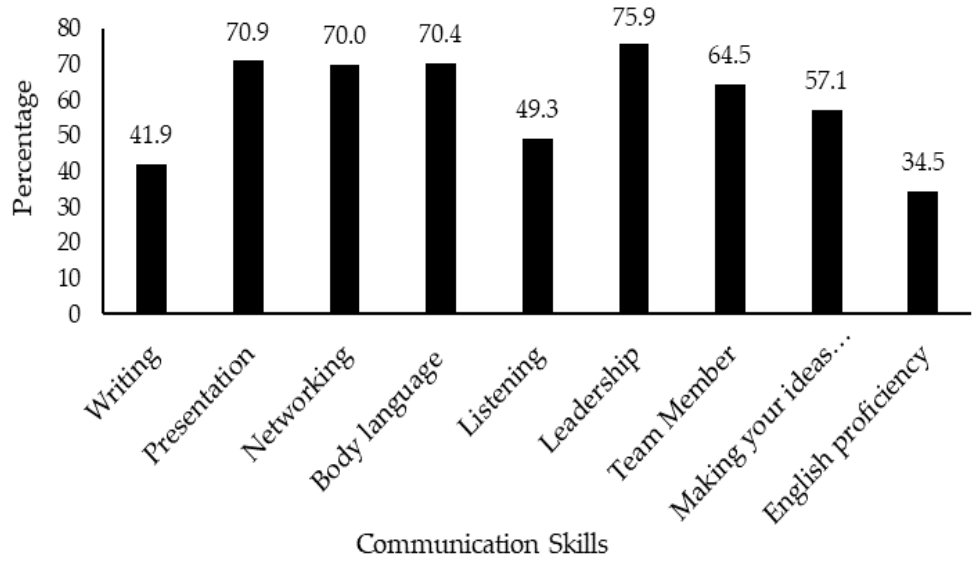
FIGURE 8: Percentage of student EM reflections on their intended contribution to the Mexican economy.



Communication and Collaboration

Mindset thinking on communication is essential in order to develop binding partnerships that foster entrepreneurial activity in marketing, networking and creating a community of practice and social capital. The majority perceived Leadership skills (75.9%), Presentation skills (70.9%), Body language (70.4%) and Networking (70.0%), as important communication skills for an entrepreneur to establish social capital. On the other-hand, they perceived Writing (41.9%) and Listening (49.3%) skills as less relevant and English proficiency least important (34.5%). The latter is not an issue in Mexico, where Spanish is the official language and English would be essential only in a tourist oriented industry (Figure 9).

FIGURE 9: Percentage of student EM reflections on communication skills required in business activity.



DISCUSSION

The Entrepreneurial Mindset (EM) model in this study, contributed successfully towards the delivery of WIL training in a non-physical workplace. Its significance to WIL pedagogy and its original contribution and variation from other research and models in entrepreneurial education is discussed below.

The basis of the EM model facilitated student engagement not only in the theoretical knowledge of entrepreneurial competencies through its clear identification of six comprehensive categories: Initiative, Creativity, Lifelong Learning, Risk Taking, Leadership and Communication, but also in its practical application via mindset reflection, in order to achieve the goal of entrepreneurial readiness.

Research on entrepreneurial readiness for business set ups have focused on specific competencies such as opportunity identification (Baron, 2004; Baringer & Ireland, 2015; Seauin & Kalsom, 2015), achievement motivation (Coduras et al., 2016; Ekpe et al., 2015; Ismail et al., 2012; Ruiz et al., 2016) resource availability (Barney, 1995; Mosakowski, 1998), entrepreneurial willingness and capability (Lau

et al., 2012, p. 155) and, prior experience in business (Sharma & Madan, 2014). However, these studies, apart from identifying competencies, did not provide experiential learning through reflection. The EM model on the other hand, used reflective practice to unlock the key components in starting a business venture.

The EM model contributed to students' entrepreneurial readiness by focussing on six comprehensive EM competencies: Initiative, Creativity, Lifelong Learning, Risk taking, Leadership and Communications and fostered the following learning outcomes:

- Sustaining Initiative and goal orientation during COVID-19 (applicable to any economic downturn/ business catastrophe) through resilience, self-efficacy, business acumen and networking with entrepreneur teaching staff, to seek new opportunities and alternatives.
- Mindset focus on Creativity in freethinking, innovative technology and new products and services to suit post-COVID markets.
- Reflecting on Lifelong Learning effects from COVID-19 and adjusting business viability, rationality and future choices by interacting with experienced professional entrepreneur teachers.
- Managing Risk Taking by reflecting on success and failure, task orientation and stoicism in adversity, through case study discussions online and incorporating the knowledge in delivering the final assessment, the Pitch.
- Leadership direction through mindset reflection on guided management and planning, social and cultural sensitivity, accountability and vision for post-COVID ventures.
- Reflecting on Communication and collaboration for networking, building social capital and trustful relationships via interaction with their role model entrepreneur peers.

The UNIVA course presented an authentic safe learning experience at a time when a physical WIL workplace was unavailable. The findings in this case study indicated that the COVID-19 curriculum at UNIVA was effective in teaching entrepreneurial competencies via the EM model and in enhancing students' knowledge to engage in an entrepreneurial career through mindset reflective thinking.

The interactive pedagogical COVID-19 online teaching strategies at UNIVA helped maintain continuity in a community centred on practice, as well as build social capital via on-campus entrepreneurial professors employed by the university. The latter inspired motivation to participate, and led to an opportunity to learn new skills and work practices. It also helped maintain a social and a professional connection with entrepreneurial networks. The professorial teaching supervision certified by university staff, firms and industry therefore enriched the pedagogical style at UNIVA.

An entrepreneurial mindset is a way of thinking about business and its opportunities that capture the benefits of uncertainty (Dhliwayo & Vuuren, 2007). The main practical implication in developing an entrepreneurial mindset is the importance of training in entrepreneurial competencies considered key to undertaking an entrepreneurial venture. The focus should not be solely on training in the knowledge and resources needed for business start-up, as traditionally considered (Murray, 1996). As Neck and Greene (2010) professed, teaching is a method, a way of thinking and acting, and more relevant than learning specific content.

The EM survey also provided the students a more realistic assessment of their preparedness in terms of their knowledge, strengths and limitations, and the level of confidence in their ability to engage in

critical tasks. It validated the mindset reflective approach by assessing the student's understanding of the EM concept and their ability to reflect on improving or setting up a business venture.

The survey also contributed to curriculum development in that it indicated areas where teaching needs to be reinforced or improve the understanding of mindset reflection. For example in assessing risk taking, the survey indicated two-thirds of the students perceived risk-taking was a necessary component of entrepreneurship, while a third of the individuals hesitated in their affirmation. Culturally (Mexican), there is a natural risk-taking fear, and it is assumed the course does not provide many opportunities to develop this skill other than through virtual simulation and case studies. In this case, more real-life scenarios could help students master this skill. While the course integrates opportunities where the students can analyze risk, there is no opportunity for them to actually test risk-taking, and see its impact on their decisions and business ventures.

In the local context of Mexico, this study was particularly useful to focus mindset reflection on ways to positively contribute to the downturn of the local economy and foster future sustainability by creating more jobs, innovation, resilience and awareness of long-term economic and social sustainability.

While traditional WIL entrepreneurial training emphasizes knowledge and resources training for a business start-up (Busenitz, 1996; Murray, 1996; Solesvick et al., 2013; Tang et al., 2012), the EM approach focused on mindset reflection prior to undertaking an entrepreneurial venture. In addition, the use of reflective practice in this study was different to other reflective models referred to above, in that it focused specifically on six comprehensive entrepreneurial competencies adapted from a validated WIL model. The six competencies in the model are adaptive to social, economic and technical change that may take place in the future.

Dweck (2006) appropriately posits that knowledge acquisition and skills training should combine with training the growth mindset. However, it is not the skills per se taught in a classroom that matter, but the ability to think and use the appropriate mindset to solve problems and adapt to change, as is with the EM model. This is what would genuinely make a difference in a business start-up. The EM model is a reflective tool, which integrates entrepreneurial pedagogy with WIL pedagogy and successfully fills the gap between entrepreneurial theory and practice.

While literature on entrepreneurial cognition, documents how entrepreneurs must think differently from others (Mitchell et al., 2007) and shape student understanding and develop thinking patterns for successful ventures (Haynie et al., 2010), it does not provide a means to achieve that goal. The EM model on the other hand, is student centred and focuses on teaching the essential competencies required in an entrepreneurial set up accompanied by mindset reflection to achieve those competencies. Some mindset models, such as the Entrepreneurially Minded Learning model (Wheadon & Duval-Couetil, 2016) focuses on developing discipline specific mindsets and skills, such as innovative problem solving in engineering.

Neneh (2012) supports the contention that business success (in South Africa) is not based on relevant skills, but people who have entrepreneurial mindsets. Research by de Villiers Scheepers et al. (2018) and Barnes and de Villiers Scheepers (2018) also refer to cultivating mindsets with particular reference to journalism and regional Australia. The EM model itself, although presented as a case study based in Mexico, has a wider application to all geographical regions affected recently by the COVID-19 pandemic. The variables built into the EM model, for example, lifelong learning and future orientation, specifically focused on mindset reflection in the current context with future projections.

Other studies are known to focus more generally on an aspect of the mindset (Basu & Goswami, 1999; Ireland et al., 2003; McGrath & MacMillan, 2000), without the reflection. EM on the other hand, focuses on both the growth mindset (Dweck, 2006) and reflective practice (Gibbs, 1988; Moon, 1999). This dual focus enables deep thinking, not just on the knowledge of entrepreneurial competencies (as in previous entrepreneurial models), but also its experiential learning in an entrepreneur venture start up.

While previous research has argued that entrepreneurship education should focus on real world experience and action to engage in authentic learning (Grisoni, 2002; Kuratko, 2005; Pittaway & Cope, 2007), this research has confirmed that mindset reflective thinking (EM) can successfully replace face-to-face interaction in a physical workplace.

Limitations

Ideally, mindset reflection using the survey tool, should be scaffolded through the course (beginning, midway and completion) or at least at the beginning and completion of the course to monitor changes in students' mindset before and after completing the course. In this study the survey was conducted only once towards the completion of the course. The COVID-19 curriculum and survey instrument being new at UNIVA, had no opportunity for feedback or to be trialed as a pilot. However, future research could use the findings of this EM survey as a pilot study and adjust the survey to suit a specific discipline or locality.

From a curriculum perspective, financial constraints in hiring entrepreneurial experienced professors and mentors could be an issue to some universities. In addition, when operating via an e-learning platform, there needs to be sufficient IT expertise to solve on the spot software issues for uninterrupted teaching and learning. Virtual and e-learning outside a physical workplace is suited to teaching the cognitive mindset, but may have issues in teaching the affective mindset, particularly social and cultural sensitivity to real clients. This could however be built into the reflective thinking, reinforced in the curriculum, and tested with the EM survey. Thus, the value of the EM template lies in its generic framework and its potential application in future entrepreneurial WIL pedagogy.

In summary, the theoretical implications of this study in its capacity to engage in entrepreneurial WIL outside a physical workplace, and its practical implications in addressing future risk and uncertainty in the labor market, makes the EM model a viable tool for future use in WIL pedagogy.

CONCLUSION

The entrepreneurial mindset reflective model enabled a pedagogical link between entrepreneurial education and WIL. The significance of this study is the use of the Entrepreneurial Mindset (EM) model paired with online instruction from professional entrepreneurs to overcome COVID-19 limitations of a physical workplace.

The value of the EM model lies in its potential use in post COVID-19 teaching and its adaptation to other disciplines, outside entrepreneurial education. The prototype of the future will likely be a country's economic restructuring post COVID-19, the shift to online modality and a *work-from-home* model. Finding physical workplaces and industry mentors or supervisors could be problematic. In lieu of these predicted post-COVID-19 changes, students must prepare themselves for a new futuristic business environment where mindset reflections could be the norm.

Unprecedented events such as COVID-19 create unforeseen radical change in the social, economic, and demographic milieu of a country. Yet, as evidenced in this research, focusing on an entrepreneurial mindset has the potential to help WIL students reflect, build resilience, creativity, and innovation and stimulate business engagement in a world of uncertainty.

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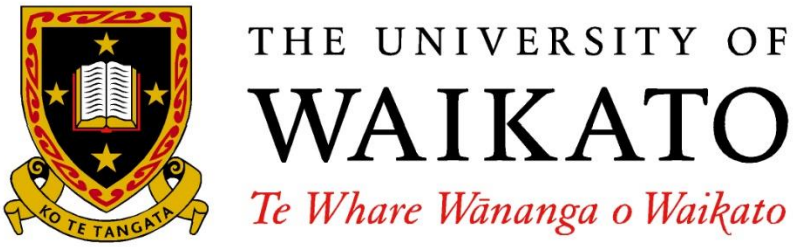

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About the Journal

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

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

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

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Types of Manuscripts Sought by the Journal

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

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

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

Best practice and program description papers. On occasions, the Journal also seeks manuscripts describing a practice of WIL as an example of best practice, however, only if it presents a particularly unique or innovative practice or was situated in an unusual context. There must be a clear contribution of new knowledge to the established literature. Manuscripts describing what is essentially 'typical', 'common' or 'known' practices will be encouraged to rewrite the focus of the manuscript to a significant educational issue or will be encouraged to publish their work via another avenue that seeks such content.

By negotiation with the Editor-in-Chief, the Journal also accepts a small number of *Book Reviews* of relevant and recently published books.

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