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What makes better career opportunities for young graduates? Examining acquired employability skills in higher education institutions

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Abstract

Purpose – The purpose of this paper is to develop a conceptual model to examine key employability skills that match workplace requirements and foster employability.

Design/methodology/approach – This research comprises a cross-sectional study from self-financing institutions in Hong Kong. The current study adopted structural equation modeling to examine key employability skills that match workplace requirements and foster employability.

Findings – Based on the empirical findings, the acquired employability skills of young graduates are entrepreneurship, professional development, work with others, self-management, communication and problem solving. Moreover, higher education institutions should work closely with industry stakeholders to get employers engaged with the work-integrating learning (WIL) programs and subsequently equip young graduates for better employability opportunities. In connection with employer engagement, employability skills of communication, problem solving and self-management would be improved. Furthermore, entrepreneurship and problem-solving skills could further be developed for young graduating students working in SME organizations during WIL.

Originality/value – As a notable gap exists in the current literature to examine young graduates' key employability skills in the context and content of Hong Kong self-financing tertiary education, this research explores key employability skills of self-financed young graduates and the relative importance of employability skills across company size using a quantitative approach.

Keywords Employability skills, Employer engagement, Structural equation modelling, Work-integrated learning (WIL), Young graduates

Paper type Research paper

Introduction

A growing awareness is observed in the Hong Kong self-financing tertiary education concerning the enhancement of young graduates' employability, which equips fresh young

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graduates to participate effectively in the workplace for better career opportunities. Young graduates' employability gains increasing attention from different key stakeholders' perspectives (i.e. industry, institutions and students). Work-integrated learning (WIL) is considered to supplement graduates' employability to improve employability opportunities for graduates (Schonell and Macklin, 2019; English *et al.*, 2021). WIL in higher education refers to learning in the workplace that includes internships, practicums, fieldwork, cooperative education and related practices. The goal of WIL is to prepare graduates for future employability, facilitating the transition from a student learner into a professional.

Hong Kong higher education context

There are two major types of institutions in Hong Kong higher education: publicly funded universities and self-financing institutions. Due to education reform by the Hong Kong government in 2000, the higher education sector shifted from elite to mass education (Wong *et al.*, 2016). One major achievement in education reform in the year 2000 was to target 60% of secondary graduates to have access to university education, almost double the existing number (Education Bureau of Hong Kong, 2013). To meet the target, the number of accredited self-financing post-secondary programs offered by self-financing institutions has grown significantly in the years following the government announcement (Ng and Galbraith, 2016, 2020). Currently, the number of publicly funded universities and self-financing institutions in Hong Kong is 8 and 29, respectively (iPASS, 2020). Compared to publicly funded universities, self-financing institutions offer flexible and diversified pathways with multiple entries and exit points through promoting the quality and sustainable development of self-financing higher education sectors. For example, self-financing institutions offer four-year degree programs, two-year sub-degree programs (i.e. equivalent to the first and second years of an associate degree or higher diploma) as well as two-year self-financed top-up degree programs (i.e. equivalent to the third and fourth years of a university degree), facilitating a more flexible study duration (Wong *et al.*, 2016). Hong Kong self-financing tertiary education institutions offered the education places of 24,300 and 24,100 in 2015 and 2016, respectively, and were foreseen to produce 24,100 graduates ready from 2016 to 2019 (Lo *et al.*, 2015). With such a large number of supplies of self-financing graduates to the workplace, considering the likely outcomes of the self-financing tertiary education sector in terms of the learning experience and employability is a timely process to sustain economic growth and development in the Hong Kong labor market. Thus, self-financing graduates' employability skills become necessary and significant in the challenging job market (see Figure 1).

Many previous studies addressed the effectiveness of WIL in enhancing graduates' employability. However, few studies examine young graduates' key employability skills in the context and content of Hong Kong self-financing tertiary education. Moreover, research scarcely concentrates on the impact of WIL on graduates' employability skills across company size.

As a notable gap exists in the current literature to examine young graduates' key employability skills in the context and content of Hong Kong self-financing tertiary education, this research explores key employability skills of self-financed young graduates and the relative importance of employability skills across company size using a quantitative approach. The outcomes of the research provide insights regarding the value of WIL into the curricula of self-financing programs as a mechanism to enhance young graduates' employability comprehensively.

Literature review

Poor employability skills may be a major cause of increasing unemployment rates among graduates. The youth unemployment rate becomes a global concern as it is generally higher than the adult unemployment rate. In Europe, the young graduates from higher education

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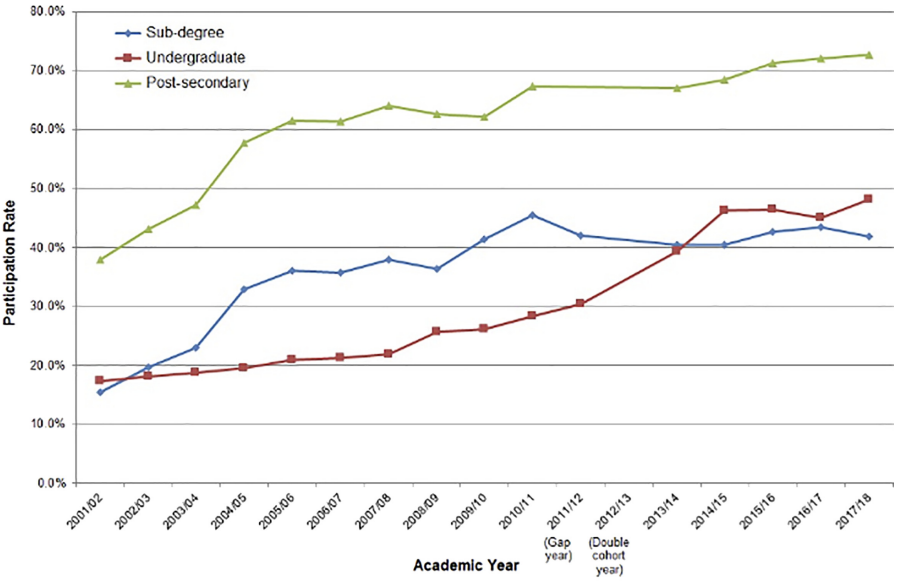

Figure 1.
Participation rate of post-secondary education

Source(s): Education Bureau (2016) accessed at: https://www.cspe.edu.hk/en/Statistics.html

have suffered a lower employment rate (Garrouste and Rodrigues, 2014; Pitan and Muller, 2020). For example, the employment rates of young graduates in Ireland, Spain, and Greece were −7.1% points, −5.7% points and − 5.1% points, respectively between the pre-crisis period (2004–2007) and the crisis period (2008–2010). The youth unemployment rate in Hong Kong faced a 5-year record low from 5.6% on average in 2015 to 9.8% in 2020 (Trading Economics, 2020). Young graduates face tough competition and low salaries as they enter Hong Kong's crowded workforce, especially during the period of economic crisis, such as the pandemic COVID-19 (Kamaruddin *et al.*, 2020; Dyki *et al.*, 2020; Ma and Bennet, 2021). While the global economic situation remains weak, the local labor market in Hong Kong deteriorated during the third quarter of 2020 under the pandemic, in which unemployment and underemployed are more common in many affected sectors, such as consumption, tourism-related industries, food and beverage services, entertainment and recreation sectors (Census and Statistics Department, 2020). Concerning overseas practices, the Hong Kong government launched the Employment Support Scheme under the Anti-Epidemic Fund to provide time-limited financial support for job retention and job creation in both public and private sectors (GovHK, 2020).

To sustain economic growth and development in the Hong Kong labor market, the Hong Kong Special Administrative Region (HKSAR) Government promotes the importance of required employability skills, such as communication and development skills, group effectiveness and influencing skills, adaptability and competency skills (Education Bureau of Hong Kong, 2014) to enhance young graduates' employability. As Hong Kong self-financing tertiary education institutions produced approximately 24,000 young graduates since 2013 (Education Bureau of Hong Kong, 2016), self-financing tertiary education institutions should design appropriate curriculum to enhance self-financing graduates' employability (Kwok *et al.*, 2014), thereby increasing their competitiveness in the Hong Kong labor market.

Many studies suggest the inclusion of WIL into the curricula for the enhancement of experiential and authentic learning for students (Helyer and Lee, 2014; Harvey, 2005; Pool and

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Sewell, 2007; Patrick *et al.*, 2008; Jackson, 2015). Discipline-based knowledge in higher education fails to meet all the needs of employers (Bennett *et al.*, 1999; Usher, 2002). Therefore, the inclusion of WIL in the development of a diverse range of employability skill sets of young graduates enhances employability in a timely strategy for institutions (Leong and Kavanagh, 2013; Jackson, 2015; Winteron and Turner, 2019). Incorporating WIL into the curricula provides opportunities for students to apply their theoretical knowledge of their disciplines to the workplace during their studies. The current research contributes to addressing this gap through an investigative analysis of the relative importance of self-financing students' employability skills via WIL from young graduating students' perspectives. The results provide a clearer picture to self-financing tertiary education institutions in considering the inclusion of WIL programs into the curricula to enhance young graduates' employability and learning outcomes, thereby creating a stronger link among employers, institutions and students toward employability development. The results will also facilitate the design and delivery of quality WIL programs for the self-financing tertiary education sector by understanding the role of organizational size to produce 'preferred graduates' (Fung and Wong, 2012) to the dynamic nature of job markets. Therefore, this study aims to examine the relative importance of self-financing young graduating students' employability skills through WIL (i.e. acquired employability skills from the supply side) and the role of organizational size on WIL effectiveness.

Theory of employability

Various theories have been used as theoretical models or frameworks to underpin the employability debate (Pool and Sewell, 2007; Clarke, 2018; Suleman, 2018). As viewed by Harvey (2005, p.15), employability is about "developing attributes, techniques or experience to enable a student to progress within a current career." Employability enhancement supports graduates from the transitional stage into employment (Cranmer, 2006). There is a consensus on the theory of employability that it is based on the "belief that human capital injects through generic skills development will ensure employability of graduates and accelerated career development" (Jonck and Van de Walt, 2015, p. 346). Identifying required and acquired employability skills and competencies is important for both higher education institutions (supply-side) and organizations (demand-side).

Kwok *et al.* (2014) argued that Hong Kong self-financing students should establish their competencies and skills to enhance the employability of these graduating students in the knowledge-intensive workplace. Besides, graduates' employability has been an essential objective for government and a performance indicator for higher education institutions (Tymon, 2013).

To sustain economic growth and development in the labor market, many institutions put extra emphasis on the WIL curriculum as part of institutional strategic directions. Many institutions value WIL as "a teaching and learning approach which has the potential to provide a rich, active and contextualized learning experience for students which contribute to their engagement in learning" (McLennan and Keating, 2008, p. 2).

Work-integrated learning (WIL)

WIL refers to types of student employment experiences (Fleming *et al.*, 2009) related to their field of study. According to Kramer and Usher (2011), WIL includes internships, coop, service learning, placement or practicum, community service, student learning and co-operative education, to name a few. WIL complements the traditional university model as it equips students to be work-ready graduates who are more adaptable to the workforce (Boahin and Hofman, 2013). A study by Lyons and Brown (2003) confirmed that the purpose of WIL is to provide students with opportunities to (1) engage in a self-reflective process with a focus on

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developing and flexible career goals, (2) engage in a range of work-place relevant to career and (3) demonstrate proficiency in generic and professional skills relevant to career goals. WIL is considered to supplement graduates' employability in different ways, such as building student's self-confidence in their professional practices (Pool and Sewell, 2007) and enhanced appreciation of the importance of employability skills with superior learning outcomes (Freudenberg *et al.*, 2011). Gamble *et al.* (2010) found that Australian WIL students become increasingly employable when they equip themselves with the required skill standards that would allow them to show their capabilities in the workplace. WIL, which enhances the understanding of values and culture of the workplace, can be an introduction to the E-workplace for fresh graduates (Jackson, 2009).

Dimensions of employability

In an intensely competitive working environment, understanding the required key employability skills of fresh graduates will help them work effectively in the workplace. The following table summarizes research on employability skills both in the Western and non-Western contexts (Table 1). Among these studies, five common employability skills are found: (1) entrepreneurship; (2) professional development; (3) self-management; (4) communication; and (5) problem-solving. Thus far, despite the prolific studies on employability skills, no research has developed an empirical model to assess the relationship between employability skills and WIL.

Entrepreneurship skill

Entrepreneurship skill is defined as the skill to create and form new innovative business enterprises by individuals or small groups (Kent, 1984; Brahma, 2020). Schelfhout *et al.* (2004) and Sánchez-Barrioluengo *et al.* (2019) suggested a learning enterprise in an entrepreneurial context, especially for higher education students to conceptualize theories and eventually commercialize a product in a stimulating environment with peer cooperation; then, they formulated entrepreneurship theory to practice, which can constitute a powerful learning environment in a business context. Graduates should be able to prepare, build and explore business plans, which can eventually turn into self-employment (Shakir, 2009). A graduate with entrepreneurship skills is a will learner with the qualities of imagination, creativity and adaptability (Pool and Sewell, 2007). The generic skills of enterprising graduates are creative, adaptive, willing to learn, entrepreneurial spiritual, autonomous, corporative, coordinative, communicative, detail-minded, responsible with excellent leadership skills, numeracy skills and time management skills, ability to work under pressure and access new technologies

Table 1.
Key employability skills

	Robinson *et al.* (2007)	Singh and Singh (2008)	Freudenberg *et al.* (2011)	Jackson (2013)	Hanna *et al.* (2015)	Jackson (2015)	Yang *et al.* (2016)	Hora *et al.* (2019)
Entrepreneurship			X	X		X		X
Professional development		X	X	X	X	X		
Self-management		X	X	X		X	X	
Communication	X	X	X	X	X	X		X
Problem-solving	X	X	X	X		X	X	
Risk-taking	X							X
Accountability					X	X		
Work with others	X	X	X	X	X	X	X	X

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(Smith *et al.*, 2006). These entrepreneurship skills are often discussed in employability literature. Jackson (2013) attested that entrepreneurship skills are promoted after participation in WIL. Thus, this study will test the following hypothesis:

H1. Entrepreneurship skill is positively associated with WIL effectiveness.

Professional development

According to Khan *et al.* (2014), professional development is defined as a process in which an individual is required to improve his/her knowledge, skills and expertise constantly throughout his/her career as a professional. Employers desire employees with high work ethics, integrity and courtesy to portray professionalism in their job role (Cameron *et al.*, 2019). Specifically, a university-wide undergraduate program should include certain employability attributes, such as professional integrity, global citizenship, ethical education, communication and teamwork and lifelong learning for the preparation of employability and personal development in the future (Shivoro *et al.*, 2017). Pursuing professional development can enhance up-to-date knowledge and skills, enabling employees to understand contemporary developments of the industry (Ragonese and Altham, 2019). Jackson (2015) investigated that a positive relationship exists between the professional development of students and WIL programs. Thus, focusing on the higher education context, this study examines the following hypothesis:

H2. Professional development is positively associated with WIL effectiveness.

Work with others

Learning how to cooperate with colleagues to achieve a common goal in the workplace is essential (Sharkir, 2009). In the professional fields, such as construction, computer engineering and accounting, employees are required to handle diplomatic cases and act as effective team members in business projects (Robles, 2012). Working effectively with others is highly important in changing technological, societal and political environments (Jackson, 2013) as most of the jobs involve interacting with others that are in the same line of profession or other professions. Therefore, Shek *et al.* (2015) further confirmed that students engage in team projects to improve their communication skill and gain confidence. Accordingly, we have the following hypothesis:

H3. Work with others is positively associated with WIL effectiveness.

Employer engagement (an employer action)

We argue that a secret exists that could enhance the relationship between employability skills and WIL (Smith and Worsford, 2015). That is, some employability skills (i.e. self-management skill, communication skill, problem-solving skill and work with others) may associate with WIL through this new attribute–employer engagement. According to Kettle (2013, p. 5), employer engagement is defined as responsive development for employee upskilling or on development dispositions and attributes to enhance employability, which is best conceptualized as a continuum. When employer engagement is not involved, these employability skills may or may not have a strong association with WIL. According to Mehreen *et al.* (2019), employer engagement is an appropriate social tie to improve employee–employer interaction, which is also perceived as important from higher education institution perspectives (Basit *et al.*, 2015). The following hypothesis is proposed:

H4. Employer engagement is positively associated with WIL effectiveness.

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Self-management skill

Self-management skill is essential in the workplace; the importance of self-management skill has been well emphasized in Western and non-Western contexts (Lee *et al.*, 2017). Fresh graduates are expected to manage themselves properly in terms of time management and task management. Self-management skill is related to career identity. If one would self-manage his or her career effectively, he or she would be able to identify and choose the best opportunities for advancement, know how long to stay in a role, know how to apply for and obtain relevant and suitable work and establish social capital by creating strategic personal and professional relationships (Bridgstock, 2009). Freudenberg *et al.* (2011) highlighted that self-management skill could be further developed in WIL for business students with the support of employer engagement. The following hypothesis is proposed:

H5. Self-management skill is positively associated with employer engagement.

Communication skill

Communication is the most important interpersonal skill in the current business environment (Robles, 2012). Houston and Lumsden (2011) corroborated that the employer selects leaders with high levels of communication skill. Shakir (2009) added that the higher education curriculum should incorporate communication skill and raise their proficiency in English and Chinese for writing business reports and letters in the workplace. Murillo-Zamorano and Montanero (2017) confirmed that clear oral communication of students in public is one of the most important generic skills that should be acquired before graduation. Furthermore, the enhancement of communication skill is necessary to develop innovative ideas and future employment prospects of students (Kwok, 2005; Oliver *et al.*, 2011). Thus, we have the following:

H6. Communication skill is positively associated with employer engagement.

Problem-solving skill

Problem-solving skill is important for higher education students to strengthen the chance of securing an internship or a work placement. Problem-solving skill is the composition of the process of problem definition, information collection regarding the problem, the definition of the obstacles that can prevent the problem-solution, and the incentive towards problem-solving behavior (D'zurilla and Goldfried, 1971). Thus, problem-solving skill determined individuals' behaviors in adversities and the level of accomplishments in the future. Students with problem-solving skill indicate the presence of the quality of resilience, establishing the ability to overcome problems. Miller (2017) validated that problem-solving skill is the most lacking generic skill of engineering graduates when handling complex problems in the workplace. Problem-solving skill helps individuals or groups effectively adapt to the working environment and easily overcome problems in their daily lives (Azmi *et al.*, 2018). We propose the following:

H7. Problem-solving skill is positively associated with employer engagement.

Role of organizational size

Organizational size must be considered as an important factor when understanding the key employability skills in the workplace (Rasul and Puvanasvaran, 2009). Company size influences entrepreneurship skill and problem-solving skill. For example, a small-sized company requires employees to be more innovative and creative when generating solutions to the company; thus, entrepreneurship skill may be highly needed (Lumpkin and Dess, 1996).

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Additionally, a small company requires employees to be proactive. Risk-taking should also be included as part of entrepreneurship skill when working in a small company.

Similarly, small firms may require sophisticated problem-solving skill given that the difficulty level to solve a problem may be extremely high. "A significant amount of research in the field of small business management has correlated small firm performance. . .more particular problem-solving skills" (Giroux, 2009, p. 167). Following our arguments, we propose the following:

H8. Entrepreneurship skill has a stronger association with WIL when working for SME than for a large company.

H9. Problem-solving skill has a stronger association with employer engagement when working for SME than for a large company.

Research model

Based on the above literature, the following research model is formulated (see Figure 2).

Methodology

This research comprises a cross-sectional study from self-financing institutions in Hong Kong. Jackson (2015) examined a range of employability skills of 131 undergraduates who completed WIL at a university located in Western Australia. The employability skills include (1) developing enterprise; (2) developing professionalism; (3) work effectively with others; (4) self-management; (5) communicating effectively; and (6) problem-solving. In addition, Basit *et al.* (2015) focused on employer engagement in work-based learning at one higher education

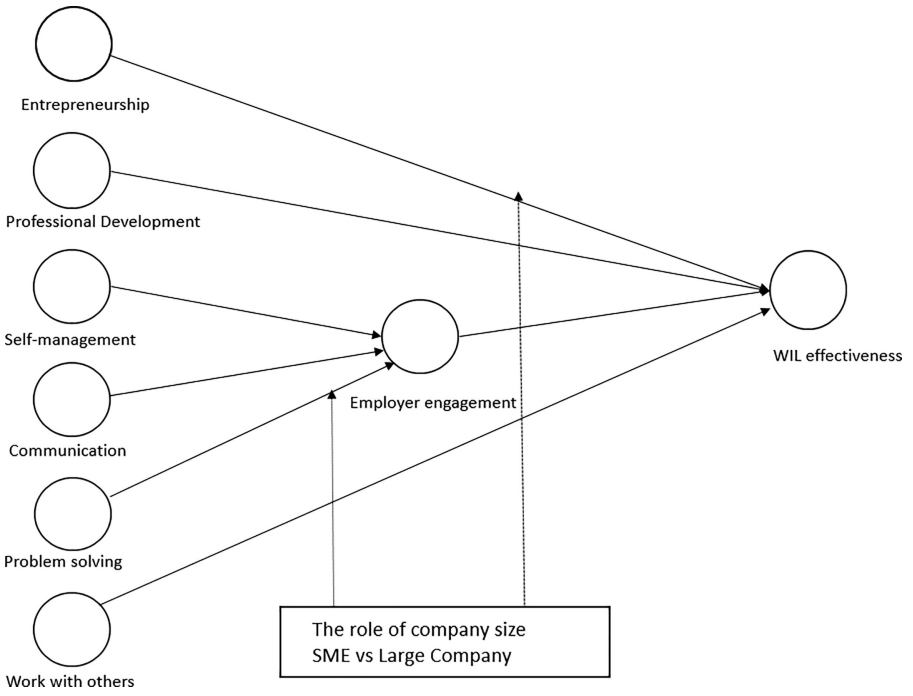

Figure 2.
Research model

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institution in the UK Based on prior studies regarding employability skills of graduates on WIL effectiveness (Jackson, 2015; Basit *et al.*, 2015; Jackson and Orrell, 2020), a five-point scale questionnaire was designed and distributed to the students from four self-financing tertiary education institutions in Hong Kong. This study was conducted through a quantitative survey method in the context of higher education in Hong Kong. Full-time undergraduate students with WIL experiences from four self-financing institutions in Hong Kong were invited to participate in the study using purposeful sampling in May 2019. A total of 236 full-time graduating students completed a self-administrated questionnaire online on a voluntary basis. Among the 236 questionnaires, 126 (53.3%) were completed by female students, and 110 (46.6%) were completed by male students (see Table 2).

Measurement instrument

The effectiveness of WIL in enhancing graduates' employability was measured. The proposed conceptual framework (Figure 1) consisted of eight focal constructs, namely, skills in entrepreneurship, self-management, professional development, problem-solving and communication; employer engagement; work with others, and effectiveness of WIL. All constructs were reflectively measured with multi-items through a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). Multi-group comparisons in partial least squares (PLS-MGA) among organizational sizes were conducted. Companies were categorized as large companies if the company size has 100 employees or more. Companies with 99 employees or less were categorized as small- to medium-sized enterprises (SME).

Data analysis and findings

To test our research model, the current study used partial least square structural equation modelling (PLS-SEM) with SmartPLS 3.0. The use of PLS-SEM is justified due to the followings: (1) this study involves a complex hypothesized interaction effect to examine the relationship between employability skills and WIL effectiveness (Hair *et al.*, 2011); (2) PLS-SEM has less stringent assumptions about normality which is a suitable tool for model development to exploratory study; and (3) this study uses latent variables as the measurement for a predictive relevance (Hair *et al.*, 2016).

Table 2. Demographic statistics (N = 236)

Characteristics	Frequency	Percentage (%)
Gender		
Male	110	46.6
Female	126	53.3
Size of company that respondents are working in WIL		
SME (<100 employees)	134	56.8
Large company (>100 employees)	102	43.2
Year of Study		
First-year	30	12.7
Second-year	42	17.8
Third-year	89	37.7
Final-year	75	31.8
Education Institute		
Thei	82	34.7
SPEED	68	28.8
HKU SPACE	52	22.0
OPEN University	34	14.5

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Measurement model. All latent variables of the measurement model were measured reflectively following non-parametric quality criteria as shown in Table 3 (Chin, 1998, 2010; Fornell and Larcker, 1981). First, the indicator loadings were examined in the reflective measurement model assessment. Loadings above 0.708 are recommended, as they can explain more than 50% of the indicator's variance and provide acceptable item reliability (Hair *et al.*, 2019). The outer loadings of all indicators were greater than 0.70, demonstrating acceptable item reliability. Second, the measurement model possessed adequate internal consistency reliability as the composite reliability and Cronbach's alpha of all constructs exceeded the 0.70 criteria. As noted by Hair *et al.* (2019), composite reliability values between 0.70 and 0.90 are classified as satisfactory to good. Third, the convergent validity of each construct was measured to explain the variance of its items. As recommended by Hair *et al.* (2019), the threshold level for AVE should be 0.50 or higher to explain at least 50% of the variances of its items. The average variance extracted (AVE) of each construct was higher than 0.50, ranging from 0.624 to 0.782, demonstrating convergent validity. Fourth, discriminant validity was assessed using the Fornell-Larcker criterion. As shown in Table 4, the square root of the AVE of each construct was greater than the construct's highest correlation with any other construct, indicating the fulfilment of the Fornell-Larcker's criterion. As the measurement model assessment was reliable and valid, the structural model was subsequently assessed. Figure 3 presents the results of the measurement model.

Structural model

One of the PLS path model criteria in assessing the structural model is the coefficient of the determination (R^2) of the endogenous latent variables (Götz *et al.*, 2010). The R^2 value for employer engagement and WIL effectiveness are 0.633 and 0.765, respectively, which can be described as substantial (Chin, 1998). Statistically, the hypothesized model explained 63.3% of the variance in employer engagement and 76.5% of the variance in WIL effectiveness.

Path coefficients and *t*-statistics are also essential criteria in PLS path models. By conducting bootstrap analysis (with 5,000 subsamples and 236 cases), path coefficients and statistics were assessed. All f^2 effect sizes of the predictor construct ranged from 0.058 to 0.184. According to Cohen (1988), the effect size f^2 values of 0.02, 0.15 and 0.35 could be interpreted as small, medium and large at the structural level, respectively. Results indicated that all latent predictors had small to medium effect on the dependent construct. Predictive relevance was assessed by calculating Q^2. Guidelines for assessing Q^2 are that values of 0, 0.25 and 0.50 respectively represent small, medium and large predictive relevance of the PLS-path model (Hair *et al.*, 2016). All Q^2 values ranged from 0.426 to 0.440, indicating a large predictive relevance of the model in this study. The SRMR value was then calculated as a measure of estimated model fit. Hu and Bentler (1998) suggested that when SRMR is less than 0.08, the study model has a good fit. As SRMR value was 0.065, this study model had a good model fit.

Having evaluated all of the key criteria for the structural model, hypotheses H1 to H7 were tested using PLS-SEM path analysis. Table 5 summarizes the results. All of our hypotheses were supported by the data at hand. Interestingly, a strong significant relationship existed between entrepreneurship and WIL ($t = 4.367$, $p < 0.001$) (H1). We also found that professional development was strongly related to WIL effectiveness ($t = 5.299$, $p < 0.001$) (H2). Work with others was also moderately related to WIL effectiveness ($t = 1.686$, $p < 0.05$) (H3).

More precisely, self-management is strongly associated with WIL ($t = 5.374$, $p < 0.001$) (H4), and communication is moderately associated with WIL ($t = 2.691$, $p < 0.01$) (H6). Furthermore, employer engagement is moderately related to WIL ($t = 2.056$, $p < 0.01$) (H5).

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Constructs and items	Loadings	AVE	Composite reliability	Cronbach's alpha
Entrepreneurship		0.753	0.902	0.895
I learnt the negotiation techniques with clients through WIL	0.777			
I learnt how to close a deal with clients through WIL	0.806			
I learnt more entrepreneurship/intrapreneurship skills through WIL	0.804			
I learnt better lateral thinking/creativity through WIL	0.796			
I learnt to become more initiative through WIL	0.820			
I learnt better change management skills in WIL	0.854			
Professional development		0.672	0.880	0.878
I learnt multi-tasking skills in WIL	0.821			
I learnt autonomy (self-governance) skills in WIL	0.805			
I learnt better time management in WIL	0.822			
I learnt to drive goal and task management in WIL	0.855			
Self-management		0.684	0.853	0.883
I become more self-efficacy/self-confidence in WIL	0.805			
I learnt stress tolerance skills in WIL	0.837			
I learnt work/life balance in WIL	0.757			
I leant to behave self-regulated in WIL	0.903			
Communication		0.689	0.801	0.778
I improved my written communication skills through WIL	0.800			
I have participated in meetings through WIL	0.833			
I give and receive feedback from others through WIL	0.857			
Problem solving		0.782	0.862	0.861
I learnt to solve problems reasonably through WIL	0.875			
I learnt to analyze and diagnose problems through WIL	0.892			
I learnt how to make better decision through WIL	0.886			
Work with others		0.682	0.886	0.883
I build up team working spirit with other organizational members through WIL	0.851			
I learnt better social intelligence skills (ability to get along well with others, and to get them to cooperate with yourselves) through WIL	0.804			
I learnt the skills on influencing others and conflict resolution through WIL	0.808			
Employer engagement		0.753	0.892	0.891
I learnt the skills and procedure from my work supervisor through WIL	0.868			
I got the support from my work supervisor through WIL	0.860			
I got clear instruction and guideline from my work supervisor through WIL	0.900			
I discussed with my work supervisor frequently through WIL	0.842			
WIL Effectiveness		0.624	0.881	0.879
WIL enhances my self-management skills	0.834			
WIL enhances my problem solving skills	0.820			
WIL develops my professionalism	0.742			
WIL improves my relationship with work supervisor	0.799			
WIL develops my initiative and entrepreneur skills	0.784			
WIL enhances my working with others skills	0.755			

Table 3.
Measurement model

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	Mean	SD	Entrepreneurship	Professional development	Self-management	Communication	Problem solving	Work with others	Employer engagement
Entrepreneurship	3.587	0.805	0.810						
Professional development	3.819	0.587	0.665	0.820					
Self-management	3.739	0.735	0.728	0.744	0.827				
Communication	3.732	0.776	0.744	0.661	0.617	0.830			
Problem solving	3.891	0.667	0.725	0.688	0.654	0.588	0.884		
Work with others	3.804	0.821	0.704	0.734	0.702	0.674	0.660	0.826	
Employer engagement	3.746	0.808	0.658	0.717	0.718	0.628	0.704	0.670	0.868

Table 4.
Discriminant validity

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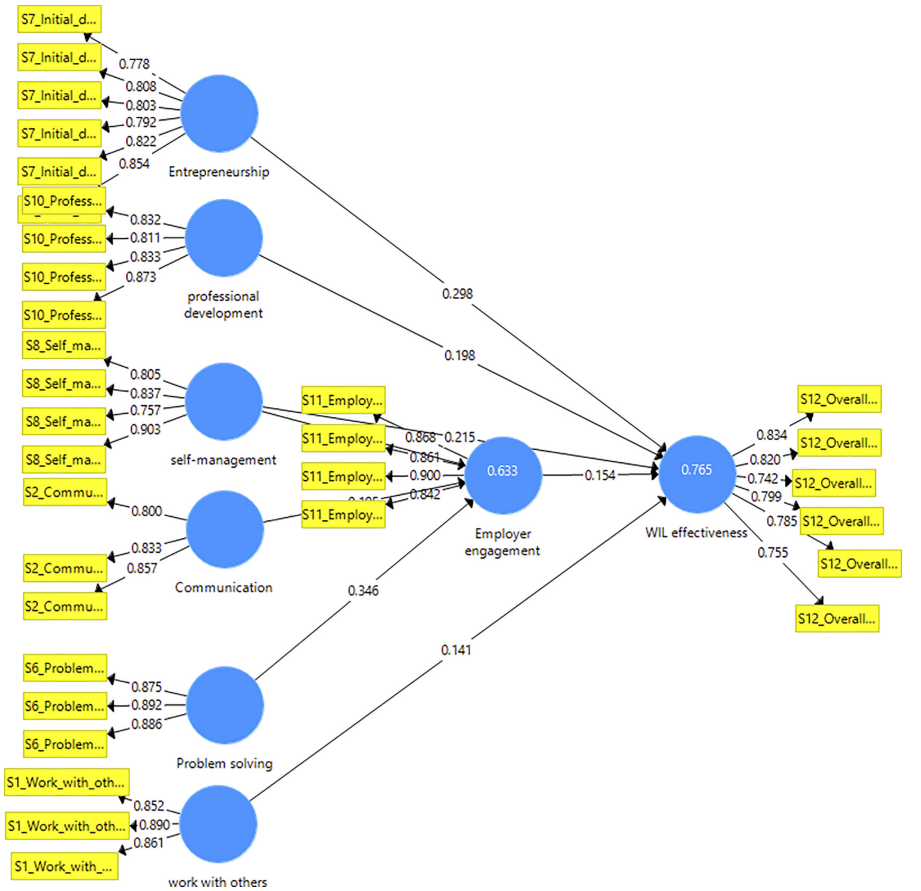

Figure 3.
Results of measurement model

Path	Hypothesis	Path coefficient (O)	*T* Statistics	*p* values	Result
Entrepreneurship → WIL effectiveness	H1	0.306	4.367	0.000***	Supported
Professional development → WIL effectiveness	H2	0.372	5.299	0.000***	Supported
Work with others → WIL effectiveness	H3	0.129	1.686	0.049*	Supported
Self-management → Employer engagement	H4	0.373	5.374	0.000***	Supported
Communication → Employer engagement	H5	0.195	2.691	0.006**	Supported
Problem solving → Employer engagement	H6	0.346	4.547	0.000***	Supported
Employer engagement → WIL effectiveness	H7	0.159	2.056	0.004**	Supported

Note(s): *$p < 0.05$; **$p < 0.01$, ***$p < 0.001$

Table 5.
Summary of PLS-SEM path analysis

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Multi-group analysis

Multi-group analysis (MGA) was conducted among two subsamples, SME ($n = 134$) and large company ($n = 102$), to investigate the effect of company size on the relationship between (1) entrepreneurship skills and WIL effectiveness; and (2) problem-solving skill and employer engagement. Working in SME company was found to possibly enhance the entrepreneurship skill of graduates ($t = 2.830$, $p = 0.005$) but not in large company ($t = 1.054$, $p = 0.304$). Similarly, working in SME company could enhance problem-solving skill of graduates ($t = 3.59$, $p = 0.000$) but not in large company ($t = 0.712$, $p = 0.477$). Therefore, the association between entrepreneurship skill and WIL effectiveness was significant among SME companies but not large companies, thereby supporting H8d. Likewise, the association between problem-solving skill and WIL effectiveness was significant among SME companies but not large companies, thereby supporting H9.

Discussion

WIL becomes a pedagogical strategy of self-financing higher education institutions for maximizing employment outcomes for their graduates (Jackson, 2013; Smith, 2012). Wong *et al.* (2017) illustrated that publicly funded universities recruited top-tier secondary school graduates, while self-financing higher education institutions are regarded as the second tier, recruiting students with less satisfactory results in the public exam. Thus, graduates of degree-awarding self-financing institutions are considered as "second-tier" or "inferior" in the local context when compared to publicly funded graduates (Wong *et al.*, 2016; Lam and Tang, 2020). To secure the first job offer of self-financing graduates, acquiring employability skills via WIL is seemingly important. Owing to the strong pressure on self-financing higher education institutions to prepare graduates for the world of work, this study empirically examines key employability skills critically developed via WIL. Six key employability skills acquired via WIL and required by employers are identified: entrepreneurship, professional development, work with others, self-management, communication and problem-solving. The results are consistent with Singh and Singh (2008), Jackson (2013) and Jackson (2015).

Following the empirical results, the proposed research model demonstrated a good explanatory power to predict employability skills and WIL effectiveness. The findings provide strong support for the proposed relationship among employability skills, employer engagement and WIL effectiveness. To enhance the employability skills of self-financing graduates via WIL, this study found that the role of employer engagement is very significant, especially improving communication, problem-solving and self-management skill. The findings are consistent with Hanna *et al.* (2015) that the inclusion of employer engagement would improve the employability skills of students, especially students who lack the necessary drive to engage with the WIL program. Barkhuizen and Schuttle (2014) proposed an integrated model of WIL by connecting links of key stakeholders in the WIL process to enhance stakeholder engagement and communication. Each stakeholder has its role and responsibilities toward the success of WIL activities. The roles of employers in the WIL are taking collaborative approaches in building WIL capability and capacity across organizations, creating WIL expertise as well as fostering the mentorship of students (Freudenberg *et al.*, 2011). The delivery of successful WIL programs in self-financing institutions should involve the active participation of faculty, academics and employers as stakeholders in the program (Abeysekera, 2006).

To prevent the mismatch between acquired and required skills, a multi-group analysis was conducted to examine the difference of employability skills with company size (SMEs vs large company). According to multi-group analysis, entrepreneurship skill and problem-solving skill could be strongly developed when working in small firms or SMEs via WIL. These two skills are essential when working for a small company in the future. The findings are consistent with Lumpkin and Dess (1996) and Giroux (2009) that applying

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entrepreneurship skill (in terms of innovativeness, risk-taking and proactiveness) in small business significantly contributes to small firm performance. Additionally, small firm employers must become aware of the importance of continually developing their problem-solving skill to ensure the survival of their firm business.

Some practical implications are suggested in this study. First, to strengthen the employability skills via WIL in self-financing institutions, employer engagement is highly encouraged. Self-financing higher education institutions and policymakers should embed employer involvement within the WIL to further enhance the employability skills of self-financing graduates. Employer engagement is an essential component in the development of WIL in which employers need to give support to students with the transition from theory to practice. This is matched with the statement of the Council on Higher Education report in 2011 that employers had the primary responsibility to monitor students' workplace activities, to ensure they remain consistent with the intended program outcomes and assessment criteria in specific items (Council on Higher Education, 2011). Second, having good coordination between different parties including students, teachers and employers in action is significant. Effective practices of facilitating WIL need the participation of different parties and the relation between the parties in a bi-directional way. Thus, the school should ensure that appropriate resourcing is provided for managing WIL activities, establishing appropriate policies and procedures and quality assurance mechanisms to ensure that WIL programs provide suitable learning opportunities for students to develop their employability skills comprehensively.

Limitations and conclusion

This study has some limitations that must be considered by further research. First, this study was conducted in self-financing institutions in Hong Kong. Future studies should replicate this study with other higher education institutions in Asian contexts. Second, mediation efforts of employer engagement can undergo further quantitative investigation from employers' perspective.

In conclusion, this study has provided insights to self-financing higher education institutions on enhancing young graduates' employability skills via WIL for better career opportunities. Senior management of self-financing higher education institutions should design proper WIL curricula to equip young graduates with key employability skills. Considering that employers have precise perceptions of the required employability skills, employer engagement is essential to transforming employability into employment. By integrating the efforts of higher education institutions and employers, the acquired and required employability skills can be in harmony with each other. In addition, company size matters. Therefore, students who wish to enhance their entrepreneurship and problem-solving skills should consider working in small firms during WIL.

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