Chapter 14
New Zealand Architectural Technology Graduates' Employability: How the Work-Integrated Learning Performance During Studies Contributes to Graduate Employment and Future Career Success

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Abstract This study examines the value of WIL performance in developing graduates of architectural technology's employability abilities in New Zealand, evaluating its impact on a range of competencies and identifying variations in outcomes specific to soft skills, academic performance, and technical capability. The model may illustrate the notion of employability to students and their parents who are new to the topic. It will benefit personal tutors, career counsellors, and other practitioners interested in employability. It will also be utilised to create an employability measuring tool. This paper aims to bridge the gap between in-depth, academic, and sophisticated articles or books on employability and relatively basic essential pieces. The model proposes ways for the various parts to interact in different ways. Anyone interested in concerns about employment will find it helpful. Our findings show that academic achievement is a strong predictor of whether a graduate would find work after graduation, a graduate with high technical capability is more likely to find a job in the architecture sector and soft skills are highly correlated to a graduate's career progression.

Keywords Work-integrated learning · Employability · Employment · Architecture · Career success

14.1 Introduction

Work-integrated learning is popular in more and more universities and colleges. This model is embedded into the curriculum by education providers in cooperation with industry, allowing students to be introduced to real work scenarios early, rather than

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just sitting in the classroom and improving graduates' employability WIL experiences link the theory you study in school with application in a genuine working setting. Undoubtedly, this is a constructive method in the field of curriculum education, which essentially makes up for the traditional teaching method that teachers and students use their mouths and ears but rarely do; more importantly, it improves students' awareness of the combination of academics and industry and creates high-skilled newcomers to the industry who can work confidently after graduation. It is worth noting that with the development of work-integrated learning, the implementation process and evaluation have also undergone some changes, resulting in some controversies in the operation process of the industry. Therefore, there is a strong demand for case analysis to track whether students improve their employability and whether they can be hired after going through the work-integrated learning process. This study investigated work-integrated learning feedback and employment destination of construction graduates in the past two years, analysed the logical relationship between the two, identified the career progression model, and provided valuable information for all parties in the industry to improve students' decisions and behaviours.

14.2 Defining Work-Integrated Learning (WIL)

The International Journal of Work-Integrated Learning (IJWIL) defines "work-integrated learning as an educational strategy that uses relevant work-based experiences to enable students to purposefully combine theory with meaningful work practice." This educational system requires students to participate in practical and relevant work-related activities, including their educational institutions, and the company or community. This collaboration enables learners to combine studying with practice in the learning process to enhance learning outcomes (Cooper et al. 2010; Cote & Emmett, 2015; McRae & Johnston, 2016). From employers' perspectives, this approach can also be a channel for them to pick the graduates with potential in advance with more convenient access to the human resources they need.

In recent years, the development of work-integrated learning has faced significant changes due to the COVID-19 pandemic, with the traditional physical workplace work-integrated learning structure being replaced by more novel forms. Over the past two decades, the work-integrated learning model has been undergoing innovation and development. The pre-2020 work-integrated learning focused on supporting graduate diversity and the transferability of work skills to adapt to new trends. However, innovative work-integrated learning models are on the way as educators look for innovative practices that move away from just providing traditional benefits and incorporate time out of the office into the work-integrated learning process (Jackson & Bridgstock, 2018; Smith et al., 2019).

Work-integrated learning's innovative development includes mini-internships, hackathons, contests and events that no longer worry about paying enormous time

costs. Short and realistic events attempt to attract a new generation of student experiencers (Kay et al., 2019). In addition, work-integrated learning organisations have integrated entrepreneurial work experience into their programs. They work with small and medium-sized start-ups to promote the growth and growth of start-ups, consultants and incubators, providing an opportunity pipeline for new types of human resources and a platform for win–win cooperation between companies and employees (Kay et al., 2019; Smith et al., 2019). As more and more work-integrated learning programmes are introduced into courses of study in different specialities, the benefit is that they can attract interdisciplinary participants. Many forms of work-integrated learning are no longer limited to the local community. The participation of the global scope dramatically increases the opportunities for the internationalisation of work-integrated learning (Bayerlein & Jeske, 2018). In addition to removing physical limitations, digital platforms facilitate online modes such as remote virtual experiences and even virtual reality work-integrated learning experiences (Al Shehri, 2012; Wood et al., 2020).

14.3 Evolution and Development of WIL

As early as the nineteenth century, educational providers in the United States provided their students with some social work educational resources, including institutional visits, industry lectures, and internships. This is an early form of work-integrated learning (Larkin, 2018). In the 1920s, work-integrated learning was operated and developed in education as internships (Reeders, 2000). However, this work practice-based curriculum was not valued in the era of theoretical academic achievement. In the 80 s, work-integrated learning was starting to gain traction among education providers, with increasing emphasis on the need for human resources to improve employability and not just gaining qualification on paper (Agnew et al., 2017, 2021; Ferns & Zegwaard, 2014; Orrell, 2011; Smith, 2016). As governments increasingly understood that the ultimate purpose of education is to train people to join the workforce, it was essential to ensure that graduates have industry-matched attributes and experiences. As a result, work-integrated learning has developed rapidly in educational providers, especially universities and colleges. Programmes such as internships, community projects, cooperative education, and work placements have been successively introduced and operated in educational practice (Agnew et al., 2017).

Studies found that the operation and development of work-integrated learning over the years have had significant advantages for all parties. From a learner's perspective, work-integrated learning has been increasingly standardised in its operation and development over the years, positively contributing to students' career planning and employability (Jackson & Collings, 2018; Oliver, 2015; Yorke, 2006). Singapore Institute of Technology has done research showing that when programmes are matched to the market's needs, students who engage with employers during their studies have a substantial positive impact on confidence, motivation, and access to

job opportunities. After all, students with real-world experience can turn their theoretical knowledge into learning resources for job-related skills development. Most importantly, the operation of work-integrated learning not only enriches students' understanding and awareness to improve their employability. The process also allows industry practitioners to express their opinions on workforce expectations in quality and quantity. Through the maintenance of corporate and institutional relationships, providers of higher education and vocational education providers updated labour market needs and expectations of vocational skills of new entrants (Jackson, 2014). An expected positive outcome of work-integrated learning is to develop graduates' job skills and allow all providers to continuously review the curriculum and improve teaching quality (Rowe & Zegwaard, 2017). Additionally, WIL's positive impact is creating a pipeline for the industry to cope with the industry demand. There is no doubt that before and after the COVID-19 pandemic, most organisations face common challenges in identifying, attracting, retaining and developing human resources (Gallardo-Gallardo et al., 2018). An essential aspect of the operation of this system is to identify and attract talents from other organisations and assign them to the correct positions to contribute to the industry and meet the skill shortage demand (Cappelli & Keller, 2014). The work-integrated learning process provides an excellent place to replenish their talent pool.

At the same time, some literature on work-integrated learning has expressed concerns about this model. A 2021 study by Fleming & Hay expressed cautious optimism about work-integrated education. The report examines a range of risk perceptions and definitions of existing work-integrated study programmes at eight New Zealand higher education institutes. Compared to the on-campus learning experience, workplace study has financial, reputational and legal consequences for all parties. This includes exploiting the emergence of high-risk behaviours and safety. These possibilities will affect the reputation of universities and institutions. Finally, the report recommends that all parties have a clear understanding and awareness of such risks and conduct risk management and control in the project design and implementation of the risks. The risks faced by participants in work-integrated learning are summarised in the following scenarios. The first is that the work scene is more uncertain than the campus environment. The campus environment is largely predictable, with more structural options depending on the course (Smith et al., 2019). All aspects of the work-integrated learning experience are fluid. For example, work-integrated learning can be paid or unpaid, with or without overtime. Different majors also lead to significant differences in the organisation's work-study integration.

Furthermore, work-integrated learning in the education and health industries is primarily in the government or public sector, while other industries may be mainly in the private sector (Fleming & Hay, 2021). The study's findings also detail the risks for different groups. For students, physical and psychological traumas were the respondents' most identified risks, including trauma, injury, anxiety and even death. Especially in industries such as catering, engineering, medicine, and agriculture, personal safety risks are considered a priority. For example, when working in the kitchen of a restaurant, it is easy to slip and burn the hot pot. The risk of exploitation was also highlighted in the report. The form of exploitation is gratuitous rather

than a realistic demand, and this power imbalance is seen as a challenge. It is also evident from the literature that the work-integrated learning process poses risks to employers, and participation can be very reactive and passive, posing a potential danger to institutions. For example, their improper attitude towards customers or patients can cause losses and delays. As mentioned above, combining work and study without the participation of high-quality students brings high maintenance costs to the employer and risks to the reputation of educational institutions.

14.4 Relationship Between WIL on Graduate Employability and Actual Employment

An investigation of business students from thirty-eight UK higher education providers compared their learning process with career data for the first four years after graduation. The effects achieved in the work environment are inconsistent. "Contributing to the greater achievement of graduate-level employment on one measure and not on another" (Wilton, 2012). A survey of UK graduates in 2009 and 2010 showed no clear, logical link between their employability and employment outcomes, meaning that high employability does not mean being employed more efficiently (Okay-Somerville & Scholarios, 2017). This result contradicts people's stereotypes. Conventional wisdom holds that the accumulation of work experience provided by work-integrated learning can enable students to acquire more positive professional behaviours, thereby improving their employability and being more popular with employers.

However, the report showed that this option has no obvious advantage in the situation of "graduation is then unemployment". Similar results came from a set of data from Australia (Jackson, 2014). The respondents were 28,000 college students in 2011 and 2012. The results showed no significant positive correlation between taking a new job in the last year of a college course and subsequent employment status (Jackson, 2014, p.147). Certainly, there is an argument that the final year of previous work experience does not equate to participation in work-integrated learning. Some literature suggests that the benefits of reducing unemployment through internships are not evident among business or management graduates, which leads corollary that any positive gains in employability through work experience decline rapidly after graduation (Wilton, 2012).

A report from 2017 noted that education and training institutions generally attach importance to students' employability. To this end, they have incorporated many professional skills into the curriculum, promoting the popularity and development of work-integrated learning as a symbol of their positive work. However, these responses do not address or identify the broader factors affecting graduate employment. The literature presents a graduate employability model, which includes human capital (including WIL) and personal, behavioural and social resources. Although the study is more theoretical, many results based on survey data have identified some factors

that influence employability outcomes. (Clarke, 2017). Divan and McBurney (2016) found in a survey of postgraduation alternative career development survey of graduate science students. Despite the low response rate, more people chose the option of not selecting the employment same as their majors. This uncertainty of career planning harms the employment status of graduates. Conversely, students who focus on their career development actively participate in work-integrated learning or other internship programs during college, and their career development results are often positively related to their career plans (Bridgstock, 2009).

Some literature also expresses the concern of the graduate labour market about graduation ability. This is a change from students' perspective (for example, knowledge, skills, emotional intelligence and other attributes), where the demand-side view is also important. Some studies have found that in the relatively fixed number and structure of the graduate labour market, the level of employability does not necessarily increase the probability of successful employment (Artess et al., 2017). Australia's national census shows that the number of engineering graduates exceeds the demand for professional jobs. There are also some external factors influencing this result, such as employment agencies or employers. These factors are very subjective than neutral. Some employers even have a negative attitude towards work-integrated learning feedback. Negative thoughts also included their attempts to understand students' involvement in the workplace and their self-perceptions of their ability to graduate. As a result, these experiences are likely to privilege well-resourced middle-class students, increasing the risk that students will experience racial and gender discrimination. This is confirmed in another interview report based on the internship managers of the undergraduate study industry; that is, among the students applying for internship programmes, there is indeed an indirect discrimination phenomenon (Wilton, 2014).

Undoubtedly, the definition of core words is required before delineating the scope of any research. The concepts of employability in many kinds of literature are controversial, developed, weakened and differentiated (Artess et al., 2017; Stott et al., 2014). The key is whether it can be standardised and the measurement method. More macroscopically, how to operate different definitions, the simple unity of multiple coexistences and various definitions for employability are dazzling (Harvey, 2001; Stott et al., 2014; Mason et al., 2003). The employability criteria can be clearly defined in the literature in the following categories regarding operability. Some, known as graduate career fitness, have four suggested elements—attention, control, curiosity and confidence (Savickas & Porfeli, 2012). The tool is used in the UK as an indicator of students' employability. The other set of criteria specifies six employability dimensions, writing preparation, lifelong learning, effective decision making, professional practice and the combination of theory and practice (Smith et al., 2014).

Most educational providers separate the encouragement of improving employability from the employment outcome of graduates and always emphasise the individual attribute of employability (Clarke, 2017). This situation has led to a greater focus on the educational process. This type of statistic is often better than realistic graduate employment statistics. Nevertheless, the possibility of employment and then

unemployment remains. The ability of students to get a full-time job in their major is very important (Jackson, 2014).

The internship has shown some relationship with graduate employability. A 2014 report from the Graduate Careers Association of Australia showed an increase in graduate employment between six months and three years after course completion (Graduate Careers Australia, 2015). Data from the UK shows that among 192 graduates six months after graduation, students who took part in an internship were more likely to be still working and to enter a higher learning stage. The results became less apparent as the timeline was stretched to one to three years (Mason et al., 2003). In summary, all employability benefits due to WIL will diminish over time, and the time interval is important (Wilton, 2012).

14.5 Controversy and Research Gap

Some pieces of literature specifically discuss the role of work-integrated learning in employability and employability. What is clear is that graduate employability is now recognised as a core strategic concern of higher education worldwide (Divan & McBurney, 2016). Many universities and colleges add work-study integration to their curriculums to enhance employability (Artess et al., 2017). Moreover, WIL offers a range of benefits to students, including improved academic performance, better employability and an increased likelihood of immediate employment upon graduation. All this has pushed work-integrated learning to the position of faith (Surridge, 2009; Wilton, 2012; Artess et al., 2017). What interests the authors is that the potential contribution of the three aspects, especially the latter two outcomes to work-integrated learning versus the actual situation of architecture graduates in New Zealand, will produce positive or negative factors that will be the focus of the study. The concept of employability is understood differently and even controversially from political, academic and professional perspectives. They pointed out that employability and successful employment is not the same thing. In other words, high employability but still unemployment is a reality. Some reports match work-integrated learning experience with graduate employment status on a specific geographic scale, and the literature results are optimistic (Artess et al., 2017).

This study critically reviewed the literature on work-integrated learning. Still, it failed to provide a clear analysis of the interaction between New Zealand architecture graduates and social resources and their employment status. This also brings the possibility of risk to work-integrated learning's operation. This paper will draw on the review of the above literature to recognise the differences in terms used by different researchers and formulate a basic principle of the relationship between the graduate employment status of New Zealand architecture students and their work-integrated learning experiences.

Many researchers who have studied the intrinsic relationship between employability and graduation status believe that more research is needed to understand better the complex role of different types of employability in leading to outcomes. Another

motivation for additional research is understanding the industry context and local environment. The relationship between employability and employment status across periods and locations may lead to opposite results. This is also a notable gap in the literature review.

14.6 Research Significance and Questions

Recent graduates' earnings and job prospects have received much attention in the growing literature. More importantly, these investigations were conducted in a very different institutional setting than in New Zealand. Using a freshly obtained unique dataset from the 2019/2020 and 2020/2021 periods, the research contributes to the body of knowledge by examining architectural technology graduate employment and career challenges in the New Zealand context, thus devising different strategies for career development.

1. How is WIL performance related to employability?
2. How is WIL performance related to the career prospects of graduates?

We also address a gap in the literature by undertaking an empirical investigation into how WIL performance influences where new graduates sit on the career development continuum. As a result, our piece serves five goals. To begin, we look at the link between WIL performance success and job prospects for graduates. Second, we look at the connection between WIL performance and contribution to narrowing the skill shortage gap in the market. Third, we look at the link between WIL performance and WIL providers. Fourth, we look at how WIL's performance affects its position in the company. Finally, we look at how a good career start determines career progression after graduation.

14.7 Methodology

The study's target audience is Architectural Technology graduates with Work-integrated learning from the 2019/2020 and 2020/2021 academic years. Currently, only two polytechnics are offering Architectural technology programmes with Work-integrated learnings. This study looks at 31 respondents from a Polytechnic in South Island, accounting for more than 65% of the Architectural Technology graduates with Work-integrated learning in New Zealand in 2019/2020 and 2020/2021. 31 out of 47 have been identified, representing over 65% of the graduates in the polytechnic. Their performances during their WIL are also recognised.

The research method is a combination of quantitative and qualitative analysis. It collects data in the form of questionnaires collected after their placement and a short interview on the phone to track their current employment. The author used uniformly designed questionnaires to learn about the situation or seek opinions of how well the

learners performed during their placements from selected respondents who were the work-integrated learning providers.

Through the literature review and national graduate profile by New Zealand Qualification Authority (NZQA), relevant persons engaged in the architecture industry were interviewed separately and asked to conduct a preliminary analysis. The requirements of the relevant architectural technology graduate's competencies in the table are analysed and evaluated. Afterwards, the questionnaire's content was adjusted according to the interview results to generate a formal questionnaire. The standard questionnaire consists of two main parts. The first part is the respondent's feedback on learners' competencies demonstrated in the workplace. The second part is on how well a learner performs academically fulfilling the graduate profile. Both parts use the Likert scale to score the requirements of the architectural technology graduates' competencies. (1 point: below the expectation; 2 points: meet the expectation; 3 points: exceed expectation). The data is only for restricted use due to privacy.

The binary logit model and the ordinary least-squares (OLS) model are the two models described in this article to satisfy the five research goals. The primary goal of this research is to use a binary logit model to assess the marginal effects of students' performance during WIL on graduates' chances of finding jobs six months after graduation. Graduates with higher performance are thought to have a better chance of finding a job (Hypothesis 1). The binary logit model is used to regress the graduates' actual employment outcome (y) on a vector of explanatory variables (X), with $y = Xb + c$ and c as the intercept, which is the vector of error, b being the slope. X is an n x k matrix containing k explanatory variables and n observations. The dependent variable y is a binary variable with the value of 1 for employment and 0 for unemployment (Soon et al., 2020). We characterise the three outcomes of full-time, part-time employment, or self-employment as "employment." The number of graduates who work for themselves is minimal. We think this is partly due to the New Zealand License builder professional framework, where graduates must have at least two years of relevant work experience before establishing their own companies and working in the architectural technology/design field. Soft skills, technical capability, and academic performance are relevant explanatory variables in the binary logit model. These variables are also used as explanatory variables in the next two models. Indeed, this paper aims to calculate WIL performance's marginal impacts on the dependent variables in each of the two models.

The second goal is to assess the marginal effects of students' WIL performance on graduates' chances of finding related jobs after graduation. Graduates with higher performance are thought to have a better chance of finding a job related to the study (Hypothesis 2). The binary logit model is used to regress the graduates' actual employment outcome (y) on a vector of explanatory variables (X), with $y = Xb + 1$ and the dependent variable y is a binary variable with a value of 1 for relevant work and 0 for unrelated work (Soon et al., 2020). This reflects the effectiveness of learning to meet the expectation of the industry by providing graduates with the competencies they are looking for. We think this has been a skill shortage issue in New Zealand for many years, where graduates cannot find related work after graduation, and employers cannot find suitable graduates to fill the skill gaps due

to the mismatch between the graduate profile and expected competencies of the architectural technician.

The third objective of this study is to assess the marginal effects of students' performance during WIL on graduates' chances of being employed in the same WIL company after graduation. Graduates with higher performance are more likely to be hired by the same WIL company (Hypothesis 3). The dependent variable y is a binary variable with a value of 1 for working in the same WIL provider company and 0 for other companies. Students always do their best to impress their future potential employers, hoping they can secure a job offer before graduation or start working immediately after graduation without searching again in the market for other opportunities, which is quite a mind-draining experience for job seekers.

We use an OLS model with the dependent variable (y) being the pay received by employed graduates to achieve the fourth goal of this study. The OLS model $y = Xb + 1$ estimates the conditional mean function of the dependent variable, i.e., $E[y|X] = Xb$. 0 means jobless, 1 lower rank than the technician, 2 average ranks as Architectural technician, 3 is leadership or managerial position. The marginal effect of WIL performance on the position of recruited graduates is calculated using this model. A better performance average, we hypothesised, would have a positive marginal influence on the position and, thus, the salary (Hypothesis 4).

The OLS model is also used to assess the marginal effect of a good starting point (working in a related job, preferably in the same WIL provider within six months after graduation) on the career progression (position) of recruited graduates. A better career start, we hypothesised, would have a positive marginal influence on career progression (Hypothesis 5).

14.8 Findings and Discussion

14.8.1 Discussion of Findings I, II and III: Effects of WIL Performance on Employability, Being in a Related Job, Employment in the Same WIL Provider

Table 14.1 shows the marginal impact of WIL performance on the chance of employment. In our analysis, we employ one logit model (M1). The M1 criterion considers the impacts of variables—soft skills (C1), technical capability (C2) and academic performance (C3) in WIL performance on the dependent variables (i.e., probability of being employed).

Table 14.1 presents the marginal effects on the probability of being employed. Academic performance exhibits the highest marginal effect of 1.55 on employability, and soft skills have a positive effect of 0.58. It is interesting to note that technical capability—drawing skills has a negative effect of −0.60 on employability (see Table 14.2).

Table 14.1 The marginal effects of WIL performance on the likelihood of finding a job within six months

Dependent variables	Soft skills	Technical capability	Academic performance
Being employed within six months	(C1)	(C2)	(C3)
M2	0.58	(0.60)	1.55

Table 14.2 The marginal effects of WIL performance on the likelihood of finding a related job

Dependent variables	Soft skills	Technical capability	Academic performance
Being employed in a related job	(C1)	(C2)	(C3)
M3	1.56	0.42	1.94

All three capabilities positively affect the probability of being employed in a related job. Particularly, Academic performance exhibits the highest marginal effect of 1.94 on employability, with soft skills of 1.56. Technical capability also plays an important role, but not as much as the other two. It is interesting to note that soft skills have three times marginal effect on whether graduates can find a related job than just finding a job.

Table 14.3's statistically significant marginal effects (4.90) indicate that graduates with superior academic performance have higher employment probabilities in the same WIL providers. The marginal effects on soft skills—communication skills and technical capability—drawing, on the other hand, are only 1.64 and negative 2.93. Most WIL providers are academically connected to the education institute and participate in the consultation of graduate profiles and curriculum. Since the academic graduate profile is designed based on this curriculum, this could be explained why more emphasis is being placed on the academic performance of WIL providers. They also favour technical training capability such as drawings where different companies may have different styles after joining the company because they believe it is easier to train the graduates according to individual company requirements than someone with previous practice.

Our findings are consistent with previous research. According to Pinto and Ramalheira (2017), graduates with superior academic credentials and a diverse range of

Table 14.3 The effects (4.90) indicate that graduates with superior technical capability have higher employment probabilities in the same WIL providers

Dependent variables	Soft skills	Technical capability	Academic performance
Being employed in the same WIL company	(C1)	(C2)	(C3)
M4	1.64	−2.93	4.90

extracurricular activities are more employable (Pinto & Ramalheira, 2017). Furthermore, perceived employability was linked to soft skills rather than subject-matter expertise (Jayasingam et al., 2018).

Interpersonal qualities, a nice attitude, a good work ethic, and job competency were more essential to employers than sophisticated software (Hogan et al., 2013). Graduates believe their university degrees do not equip them with the skills necessary for the labour market (Figueiredo et al., 2017). Graduates with exceptional academic achievement were statistically considerably more likely to get interview call backs if they had internship experience; good technical application skills had no statistically significant influence on job opportunities. This might also be explained by graduates who utilise their technical talents more successfully being choosier in their employment searches. Piróg (2016) obtained similar results, noting no statistically significant association between graduates' final grades and career opportunities (Piróg, 2016). The results of previous research back up the claims we make in this section.

14.8.2 Discussion of Findings IV and V: Effects of WIL Performance on Ranking and Effects of Good Career Start Related to Career Path (OLS)

Table 14.4 displays the OLS estimate results, which demonstrate statistically significant marginal effects of WIL performance on the ranking and thus earnings. The natural logarithm of recent graduates' ranking is the dependent variable. A 1.0-unit improvement in soft skills may escalate the position from technician to leadership level, depending on the model design. The model demonstrates that soft skills could be the key to promotion. Technical skills such as drawing skills are a supplement to leading and mentoring junior staff. Academic performance does not have much effect on the promotion since it is more relevant to the graduate profile, not the leadership role.

The three control criteria differ from those mentioned in the previous section on logit estimation. M5 comprises employment within six months in a related field and starting their career in the same WIL provider. Most people think that career advancement could be more promising if they start their career with the same WIL provider. We are challenging this hypothesis. Table 14.5 demonstrated that regardless of whether one gets employed by the WIL provider and stays in the same company during their first or second year of career, they are used. It shows that a one-unit

Table 14.4 The effects of WIL performance on the ranking and thus earnings

Dependent variables	Soft skills	Technical capability	Academic performance
Ranking after graduation	(C1)	(C2)	(C3)
M5	0.61	0.28	0.02

Table 14.5 The effects of WIL performance on career progression

Dependent variables	Within six months	Related works	Same Company as WIL
Career progression	(C1)	(C2)	(C3)
M6	0.58	1.62	−0.56

increase in whether they work in a relevant field is associated with a large 1.62 times more likely to be promoted to a managerial position within one or two years after graduation. Table 14.5 also shows what happens when one gets employed in the same WIL provider after graduation so-called very lucky one with a good career start, their future career progression would be negatively impacted. They are 50% less likely to be promoted in the same company than others who graduated working in other companies. It also demonstrates that employment within six months is crucial to one's future career development. The discovery of the importance of employment that drives the results was made possible by further classifying them into with job, is it related or same WIL company.

14.9 Conclusion and Suggestion

This study looks at a sample of 31 newly graduated university students from Polytechnics in New Zealand during the 2019/2020/2021 academic years with an over 65% response rate. The research focuses on the marginal effects of the dependent variable—academic success as evaluated by their performances—(i) the chance of finding related work after WIL, (ii) the chance of being employed in a related job, (iii) the effect of employment in the same WIL provider (iv) effects of WIL performance on ranking and (v) the effects of good career start related to career path (OLS). By examining graduate career prospects in a New Zealand institutional setting, this research contributes to the core of knowledge. We address a gap in the literature by conducting an empirical study of the association between WIL performance and where new graduates lie in the income distribution; such studies are often overlooked in the literature.

The following are the paper's main results: (i) A strong academic performance or qualification achievement significantly influences the likelihood of employment. (ii) Academic performance exhibits the highest marginal effect of 1.94 on employability, with soft skills of 1.55. (iii) Based on the marginal effects of academic performance, having a higher academic performance score is most beneficial for graduates who want to continue working in the same WIL provider after graduation. (iv) A 1.0-unit improvement in soft skills may result in an escalation of position from technician to leadership level, depending on the model design. (vi) Working in the same WIL provider negatively affects future career progression.

Our findings show that academic achievement is a strong predictor of whether a graduate would find work after graduation. The graduation from the programme

demonstrates to companies persistence. Companies assess applicants on various factors, including their communication skills, ability to express their ideas effectively, exposure to real-world circumstances, work ethics, professional attitude, and academic performance. Based on academic accomplishment, the existing academic performance system does not adequately handle these attributes. The findings also show that employment in the related industry and application of what they learnt is highly correlated with their soft skills. To help the sector grow sustainably, career progression with job satisfaction offers graduates motivation to stay in the industry. Moreover, soft skills play a crucial role in career progression. To solve the skill shortage in the construction industry in New Zealand, a dynamic approach is required to ensure graduates can be employed in a related sector and develop their careers gradually.

ROVE—reform of vocational education, on the other hand, is now changing the way how the curriculum is designed. Work development councils are established to improve industry results by reshaping the vocational education and training system to produce more appropriate education and skills, guaranteeing national uniformity in graduate outcomes, and solving skills shortages. It also works with their respective industries to develop and maintain a long-term view of the skills that their companies will need in the future. They convert these criteria into expectations for vocational education. Te Pukenga, Private Training Establishments (PTEs), and te Wananga, the education and training providers, will be expected to satisfy these standards. Indeed, as stated in the New Zealand Construction Sector Accord, One of the objectives is to increase capacity or to have a competent workforce capable of meeting New Zealand's growing housing and infrastructure demands. The Accord established a framework for companies and the government to collaborate on some of the industry's most urgent concerns. These difficulties include a shortage of qualified and competent people, imprecise regulations, disorganised leadership, an unreliable career pipeline, and a risk-shifting culture.

The Accord also set a framework for resolving some of the industry's most critical concerns. The building and construction business is an ecosystem, and the Accord brings all interested parties together to collaborate in favour of a common goal. The first programme of action that the government committed to implementing as part of the Accord to improve the sector's performance included a Construction Skills Action Plan, a new Infrastructure Commission, and revised Construction Procurement Guidelines for government agencies. Along with addressing the building industry's skills shortfall in New Zealand. Our findings have political ramifications, notably in terms of study link loan repayment. Since its launch in 2009, it has been the most often utilised education loan among New Zealand students seeking higher education at neighbouring public institutions.

Graduates with strong soft skills and academic performance can achieve higher positions within the first and second years compared to academic performance alone, thus having higher resilience in loan repayment. This outcome may unwittingly steer students toward soft skills achievement and academic brilliance. Given that our findings indicate a strong statistical link between academic performance, non-academic performance, and employment, it may be time for the Ministry of Education

to change the weights and put a higher value on non-academic achievements. Our results might be used to fuel legislative debates over the undue emphasis on academic achievement in higher education curriculum development.

Using normal OLS estimation, we find that the effects of working in the same WIL company are not positively correlated with career development. According to the computation, though very strong academic performance can help students go to the same WIL company after graduation, it harms one's career development. It is less likely to promote within the same company compared to others working in different companies after graduation. Employment in a related industry within six months had a stronger impact on future positions and thus income for graduates. This is understandable, given that they are most likely entry-level jobs for recent graduates. Academic brilliance is only advantageous up to a point since higher entry-level or technical level salary jobs need more than academic knowledge. Soft and specialised skill sets are often required for employment in a management or leadership role.

From this vantage point, educational practices might be tweaked to include related soft skills in architectural technology programmes. On the other hand, graduates with professional degrees with excellent soft skills would be more suited for management and leadership roles that can improve the sustainability of the construction industry workforce ecosystem. By the objectives of the New Zealand Education Blueprint, graduates should also develop entrepreneurial skills to become proactive job creators as opposed to passive job seekers.

Combining the data conclusions and the analysis of the results obtained in this paper, the authors strongly recommend that graduates, especially newcomers to the construction industry, can develop the employability skills identified to meet the increasingly fierce industry challenges to stand out from the many candidates. Undoubtedly, employability skills are an integration of the many skills required to make graduates "employable". It contains the applicant's academic knowledge, technical capability, soft skills, job experience, and attitude. These can be understood as the core behaviours and competencies for the job. They are seen as crucial to successfully winning job opportunities and career development. Especially in the construction industry, job seekers must demonstrate the qualities and attitudes of being part of the project team during the WIL process. Such as building and developing relationships, solving problems, taking initiative to achieve team goals, etc. How a graduate will demonstrate their experience to an employer who believes they can be a good fit for the organisation to benefit from.

The results show that the excellence of technical and soft skills is a very important in the whole WIL evaluation results. How graduates use technical knowledge and soft skills to deal with and solve problems is a core need for employers. As a newcomer in the industry, a sufficient level of technical expertise learnt from academic and technical capability are the key factors to reflect the ability to solve problems. Employers want to see that they can use them to tackle challenges and problems and expect several different ways to overcome them. At the same time, excellent academic performance can be regarded as a talent with good learning ability. Whether graduates are keen to learn new things, or even learn from failures and adapt better, is crucial for talent-seekers. This can also fully reflect the positive attitude and initiative

of the graduates. Good learners can think independently without always being told what to do next, an important quality for newcomers to the workplace. This is seen as a core benefit throughout the WIL process. Evaluators want to see that students are not afraid to come up with new ideas, solve and approach challenges differently, and get results even if it's not optimal.

Soft skills and teamwork skills are also good qualities that architecture students should demonstrate at WIL, even the core qualities. This directly contributes to improving WIL evaluation. Through the data research in this paper, the authors found that the gap in soft skills is an important part of students' WIL evaluation. Communication plays a key role in any job. Co-workers are eager to know that their co-workers can listen, execute, and articulate ideas, even challenging their ideas for positive outcomes. Talk to customers, collaborate competently, and more. Most construction projects require teamwork to complete the work results according to the plan. Good communication skills can greatly solve the time cost and increase work results. Effective teamwork is critical to the success of the project, so in WIL, how can you demonstrate that the student can execute positively to support the organisation in achieving its goals and demonstrate their willingness to work closely with team members, delegate and listen and Taking responsibility for the shared workload directly affects the evaluation of WIL. Furthermore, balancing one's wishes with the ideas of others and ending negotiations and communication with a positive and steady attitude is a challenge and an excellent option for all graduates during the WIL period.

Going a step further, the study results show that if students can demonstrate stronger soft skills during the WIL, it will undoubtedly become a plus. Senior employers also want to crave the leadership skills of staff, even if they are only entry-level. This is a good indicator that students are looking for progress in the business and can motivate team members, complete tasks to a high standard and be a positive factor in the team. And these abilities can indicate that students can effectively organise and plan workload and self-required to complete tasks on time and quantity, even complete their responsibilities under certain intensity and pressure, and handle project challenges calmly and objectively.

All contents above are some suggestions given from the perspective of the participating subjects of WIL, which can easily be understood as taking the initiative and winning. However, the authors also found from the data research process that the organiser of WIL, the education provider, also has some thoughts. From the perspective of WIL's organisation and managers, WIL is undoubtedly a high-quality solution that benefits all parties. In the WIL environment, theoretical information obtained by school teachers is verified and examined, and feedback and data are obtained from students and enterprises to strengthen teaching quality management. For example, this study found that in addition to professional academic background and industry skills, soft skills such as communication skills are also strongly concerned by employers. How to increase the involvement of this content in relevant professional courses has become a new topic for teachers. For example, adding assignments such as classroom interaction and student teamwork can be beneficial attempts to improve this skill. In addition, education providers need to examine the WIL program and

reflect on it. For example, during the placement process, ask yourself: Are you clear and understand the learning goals of students participating in WIL? Can constructive feedback be added to the WIL experience? Has the set goal been achieved after the entire WIL is over? And does WIL provide students with new technology or skills? Is it necessary to improve the goals or themes of student participation in WIL? Undoubtedly, as the organiser of WIL, properly coordinating and managing the relationship and potential risks between students, enterprises, and schools is also a major challenge in the implementation of WIL. For example, the occupational health and safety of the participants will directly lead to the quality and reputation of WIL. Critical thinking has always been critical in improving the efficient operation of WIL.

Our findings complement the Te Pukenga Consultation, a comprehensive nationwide survey of industry graduates conducted by the Ministry of Education. To make better judgments about upcoming educational initiatives, ministry officials may review our outcomes.

Limitations of study

The study's modest sample size is one of its flaws; It would be ideal if it included recent graduates from more public and private colleges. Another restriction is the sample's cross-sectional character; an ideal benchmark would be a dataset that tracks graduates throughout time.

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