

Navigating the clinical environment: A qualitative exploration of clinical technology students' coping strategies during work-integrated learning

DORCAS ROSALEY PRAKASCHANDRA¹

Durban University of Technology, Durban, South Africa

RHODA MEYER

Stellenbosch University, Cape Town, South Africa

The work-integrated learning (WIL) environment can precipitate additional mental and psychological stress, with possible deleterious effects for health science students and patients. The dearth of information for clinical technology students who are also affected by the demands of academic learning tasks and the clinical environment, warrants an exploration of the challenges and possible coping strategies of these students during WIL. A qualitative approach was employed using purposive sampling. Thirteen students were recruited from different clinical sites. Data was generated using in-depth, semi-structured interviews, underpinned by the literature. Findings highlighted the complexity of the WIL environment on the wellbeing of students, the support mechanisms available, and personal strategies employed by students to cope. This study underscores the need for change to the culture across WIL environments to focus on student wellbeing. Congruence between organizational support, curriculum structure, and the nurturing of graduate attributes like adaptability and resilience is necessary.

Keywords: Mental wellbeing, clinical technology, clinical environment, student wellness, work-integrated learning.

The importance of higher education institutions (HEIs) in promoting graduate employability has received growing attention (Rowe & Zegwaard, 2017). Exposure to the workplace can improve a graduate's employability by helping them build professional networks and social, professional, and interpersonal skill sets. A work-based or work-integrated learning (WIL) prescribed outcome, informed by and planned in partnership with industry (Aprile & Knight, 2020) would capacitate students to handle the practical and emotional demands of their chosen profession. The anticipated benefits have driven the international push to actively promote the vocationalization of education through the adoption of a range of WIL approaches to achieve this aim (Grant-Smith & Feldman, 2023).

The *International Journal of Work-Integrated Learning* defines WIL as "an educational approach that uses relevant work-based experiences to allow students to integrate theory with the meaningful practice of work as an intentional component of the curriculum. Defining elements of this educational approach require that students engage in authentic and meaningful work-related tasks, and must involve three stakeholders: the student, the university, and the workplace/community" (International Journal of Work-Integrated Learning, 2020, para 2). In South Africa, although WIL takes different formats across higher education institutions, the Council on Higher Education (2000), identifies four main curricular modalities of WIL which are, work-directed theoretical learning, problem-based or oriented learning, project-based learning, and workplace learning.

In health sciences, most programs incorporate a clinical component in the form of WIL since practical pedagogical approaches to ensure students' competencies in clinical training have been recommended (Venketsamy et al., 2022). In clinical technology (CT), students must acquire the necessary knowledge

¹ Corresponding author: Dorcas Prakaschandra, rosaleypra@dut.ac.za

and abilities to be able to work as graduates after four years of undergraduate study. Students spend the latter two years at an HPCSA (Health Professions Council of South Africa)-accredited training site, where they are expected to acquire the relevant clinical skills, as well as develop such attributes as critical thinking, effective communication, and teamwork, to name a few (Sattar et al., 2022). While the literature abounds with WIL research, it is mostly concentrated on employability outcomes and skills development, which has, in recent years, become contested (Aprile & Knight, 2020). There is evidence that some students struggle to transition from theoretical studies to clinical practice, perpetuating the stress and anxiety associated with clinical training, since student economic wellbeing and resilience are important for a positive WIL experience (Drysdales et al., 2021). Recent studies acknowledge the limited explorations of student wellbeing experiences at WIL (Gillett-Swan & Grant-Smith, 2018) and the current literature highlights the drawbacks of engaging in WIL, such as financial and psychological stress, social isolation (particularly during the COVID-19 pandemic), an unbalanced study/life schedule, and exposure to unethical or exploitative work practices (McDonald & Grant-Smith, 2020).

This is particularly important in the CT context since it is established that context impacts students' wellbeing during WIL (Gillett-Swan & Grant-Smith, 2018). Since WIL is a critical component of CT, the purpose of this study was to explore the perceptions of clinical technology students regarding factors that influence their overall wellbeing during WIL. There is currently no data that focuses on CT student experiences of how WIL affects their wellbeing. This study will highlight the challenges students face when undertaking WIL and explore strategies to address the pressures and conflicts which impact on their wellness.

LITERATURE REVIEW

Introduction

A consequence of the massification of higher education (HE) has led to increasing student numbers with diverse needs, which has spotlighted the growing challenge of supporting the wellbeing of HE students (Konstantinou et al., 2023). Students in HE experience additional challenges when compared to the normal populace (Neves & Stephenson, 2023), including limited financial resources, and the transition from a controlled learning environment to a more independent one, which may impact the wellbeing of these students. While the HE environment may itself be a significant contributing factor to the development of mental health problems (Winzer et al., 2018), over the last four years, these problems have been exacerbated by the COVID-19 pandemic. Of relevance are the educational disparities across international, national, and local HE contexts. Unequal access to online learning opportunities, lack of specialized support and training for online education (Meyer et al., 2023), lack of physical resources like computers and data, internet connectivity in WIL spaces, as well as a suitable workspace for online learning may have intensified mental health problems (Ibarra-Mejia et al., 2022) which are known to adversely impact less advantaged students more strongly (Xu & Jaggars, 2014). In addition, students, who may already be vulnerable in terms of their development, and who faced additional challenges posed by COVID-19, developed increased mental health concerns (Hamza et al., 2021). This is not different in South Africa where the wellbeing of South African university students who, by virtue of our socio-economic history, defines them as a 'very high-risk population' for mental disorders and psychological distress (de Jager & Steyn, 2023).

The knowledge economy is developing, characterized by a concurrent demand for rising technical capabilities, and a competent, creative, and competitive labor force. Education is an important mechanism for ensuring that the populace is ready to fulfill the expectations of the global economy in

the twenty-first century (Ferns et al., 2014). Higher education institutions are ever more expected to engage with the challenges of the contemporary world and to provide graduates who can function effectively within the evolving contexts and trends. As such, graduate employability, development of 'generic' skills, or the lack thereof, and employer satisfaction have driven the focus in HE to address these challenges. A possible strategy is to include WIL as a mandatory component for the professional accreditation of university program offerings (Billett, 2015). Despite the benefits of WIL in integrating academic learning with practical work experiences, wellbeing challenges that may differ from traditional courses of study may also arise, particularly during intense periods of WIL placements, those associated with unpaid WIL and practicums (Grant-Smith et al., 2017).

Wellbeing in Work-Integrated Learning

Within the context of WIL, the concept of wellbeing is described in various ways across the literature. Gillett-Swan and Grant-Smith (2018) offer a model highlighting the various interrelated dimensions of wellbeing, including cognitive, economic/environmental, social, physical, psychological, and spiritual. These interrelated dimensions are subject to the influence of contextual factors inherent to the WIL environment. The dynamic nature of WIL experiences, coupled with the unique challenges and demands of the clinical setting, can profoundly shape an individual's cognitive, social, physical, and psychological states, consequently impacting their overall sense of wellbeing. Adverse stressors resulting from WIL placements may be ascribed to either students, host organizations and educational institutions or a combination thereof. For example, the changes to work-life balance, where students need to accommodate additional workplace commitments and pressures may lead to stress fatigue and a sense of being overwhelmed (Grant-Smith & Feldman, 2023). In addition, the transitioning from a classroom to a professional work environment can induce feelings of anxiety, inadequacy and even imposter syndrome. Furthermore, students may experience the negative effects from a toxic workplace culture, lack of support from colleagues or supervisors. In fact, a recent study highlighted the stressors during students' work placement and found that physical health, peers, colleagues, and COVID-19 were common sources of stress (Hay, 2023). It is important to understand these wellbeing issues so that educational institutions, employers, and students themselves can formulate strategies to navigate the challenges of WIL placements while promoting their overall wellbeing and learning outcomes.

Work-Integrated Learning in Health Sciences

In the health sciences literature, student wellbeing is often described as a positively experienced balance of different life factors, including health (such as elements of mental, physical, and emotional health), academic performance, personal circumstances, attitudes to self, and ability to cope with stress (Byrnes et al., 2020). The effects of stress on the mental health and wellbeing of health science students are reflected in the significantly higher anxiety and depression rates than those in the same age cohort of the general population (Hope & Henderson, 2014). This may have dire implications for both the student and the patient during WIL. The WIL environment in which students perform or observe duties related to their profession is also characterized by its unique social norms, culture, and characteristics (Litmanen et al., 2014). While the focus of WIL is on preparing students for clinical work by reducing the knowledge gap between pre-clinical and clinical students (Atherley et al., 2019), this environment may be stressful and unpredictable as students regularly encounter a range of challenges, including, confronting illness and death, a negative learning climate, unprofessional behaviour of staff and high workloads (Prakaschandra et al., 2023). As with other students in HE, there is also evidence that the recent COVID-19 pandemic exacerbated the stress levels amongst health sciences students, both at the university (Cao et al., 2020), and in the clinical environment (Prakaschandra et al., 2023), where WIL is

required. Thus, there has been an urgent call for investigation into the health and wellbeing of today's health science students (Lanza et al., 2022), particularly in this post-COVID-19 era. In addition, additional research is needed to determine the factors that contribute to a conducive clinical environment that would nurture students' professional development while enhancing their wellbeing (Litmanen et al., 2014).

The Clinical Technology Program

The Clinical Technology (CT) program has recently undergone rearticulation, with the inclusion of general education modules to promote the development of graduate attributes such as adaptability, resilience, and self-regulated learning. This program comprises two years preclinical and two years of clinical exposure, which is different to the previous offering. Recent data indicates that CT students experienced challenges in transitioning as well as adapting to the clinical environment during WIL (Meyer et al., 2023). These challenges seemed to have contributed to the decline in mental wellbeing, which students alluded to. Although there is an increased interest in the integration of wellbeing into the curricula in undergraduate medical education and more widely in health education (Taylor et al., 2022), the focus seems to be on medical students, with a dearth of data available for allied medical professions, like CT. Briefly, the CT program is one of two programs in the Department of Biomedical and Clinical Technology. The profile of students reflects a predominantly female and Black African composition, with a smaller proportion of students from the Indian ethnic group. The Durban University of Technology is regarded as a previously disadvantaged HEI, and the university is known to attract students from diverse backgrounds, many of whom are 'first-generation' learners (Strydom et al., 2010) and may not have adequate preparation for the transition into the HE spaces.

Clinical Technology students, like other health science students in WIL, are affected simultaneously by the challenges of academic learning tasks as well as the demands of real working-life situation, and it is known that the clinical experience is a key influence on their professional development. It was envisaged that the results will help inform curricular revision which will address student wellbeing and provide tailored strategies for the areas identified in this program. Therefore, the focus of this article is to present issues related to student wellbeing during WIL in the CT program. The research question was: What are the perceptions of CT students regarding factors that influence their overall wellbeing during work-integrated learning?

METHODOLOGY

Research Design

As part of a qualitative exploratory study, data was collected by means of individual interviews from 3rd and 4th year students completing the Degree in Clinical Technology (CT) in the Department of Biomedical and Clinical Technology, Faculty of Health Sciences, Durban University of Technology. A detailed methodology has been previously discussed (Meyer et al., 2023).

Participants and Recruitment

Data was collected from a population of 82 3rd and 4th year students with 13 students being recruited using a non-probability, purposeful sampling strategy. Students from these senior groups were selected to ensure that participants had sufficient exposure to the clinical environment. This strategy also enabled the researchers to target participants who could contribute to an understanding of wellbeing and coping strategies during WIL. There are a total of 17 clinical departments where these

students are allocated for WIL. Purposive sampling allowed the selection of one student from each of these departments. At the time of data collection only 13 clinical departments had students undertaking WIL. The interviews stopped when data saturation was reached, in other words, when no new information was generated.

Data Collection

All 13 students agreed to participate. The purpose and the process of the study was explained to participants and all those willing participants signed an informed consent form. Data was gathered using in-depth, semi-structured interviews, conducted virtually on Microsoft Teams, and done in English. The questions were underpinned by the findings from the literature review and modified specifically to the context of this study. The semi-structured interview schedule included questions such as: "What were the challenges in the clinical environment and what prohibited you from learning?" and "How did you have to adapt in terms of yourself to make sure that you meet the requirements for your qualification in the face of COVID-19? What changes did you have to make within yourself?" For in-depth, rich data, interviews ranged from 30–60 minutes and included open-ended questions.

Data Analysis

The audio-recorded data was transcribed verbatim. To ensure quality control, both researchers independently reviewed the transcripts against the audio recording for potential discrepancies or incomplete data. Thematic analysis (TA) was used to analyze the data for significant ideas inherent in the data by the two researchers. This was done, first independently, and then jointly to enhance the validity of the data, using Braun and Clark's (Braun & Clarke, 2006) six-phase framework of thematic analysis. During analysis, the data was first arranged into smaller parts called "descriptors". These descriptors were then condensed, and codes were created. The WIL wellbeing model framed secondary analysis, allowing the researchers to consider the relationship between the dimensions of wellbeing and the WIL environment. Similar codes were then grouped into categories and themes. Both researchers then reviewed, discussed, and deliberated the themes before consensus was reached.

Ethical Considerations

The study received institutional ethics committee approval (IREC 046/21). The principles of beneficence, respect for human dignity, and justice, were observed to safeguard study participants. Before data collection, participants were required to read and sign an informed consent form. They were also reminded that participation is completely voluntary, and that they had a right to withdraw from the study at any time.

Privacy and confidentiality were maintained by ensuring that transcripts were stored in a password-protected computer, available to the researchers only. Furthermore, pseudonyms were used to protect the identity of participants.

Trustworthiness

To establish trustworthiness, four criteria were considered, namely, credibility, transferability, dependability, and confirmability (Graneheim & Lundman, 2004). Credibility was safeguarded by inviting participants who had personally experienced the issues with wellbeing. Transferability was initiated by providing a detailed description of the context being studied. Dependability and

confirmability were sought by remaining reflexive and having regular team meetings during the data analysis process and maintaining an audit trail.

Limitations of the Study

Several limitations should be noted in the current study. Firstly, health behaviors were based on participants' self-reports, which may be impacted by recall bias. Secondly, the data was collected during the time of the COVID-19 pandemic, which could have influenced the challenges that students were facing, and thus the level of stress.

RESULTS

Three major themes emerged, relating to the factors which students perceived to impact their wellbeing during WIL, namely 'educational', 'institutional' and 'social'. These themes highlight the complexity of the WIL environment on the wellbeing of students, the different support mechanisms utilized, and the personal strategies employed by students to cope with the negative effects of this environment. The themes are supported by participant quotes, and participants are identified by their unique identifying letters.

Theme 1: Educational

This theme delves into the educational support during WIL, including the quality of instruction, the educational climate students encountered, the effects of the supervision received, and the educational responsibilities, on students' wellbeing.

Educational support

Placement in a clinical environment is a fundamental component of the curriculum for health science undergraduate students. In this environment, students encounter various role-players, who may or may not offer the necessary educational support. Students in this study associated various challenges related to the lack of support for their learning, with feelings of despondency, anxiety, disinterest, and a sense of being overwhelmed. Some of these feelings were linked to clinical staff either being unable to or unwilling to teach them effectively "So I guess it's not like they're willing to teach you... They just there if you have any questions, but only if you ask them" [P4] and "then we kind of just picked up how to do pacemaker checks on the go and by watching that other seniors and employees do it" [P3]. Where training was available, it was not appropriately aimed at CT students, and students felt a sense of neglect. As expressed by another student:

The doctors have all the interns, and they all come in, and they have a huge program that you are welcome to join. But we had nothing like that...So we barely had any workshops or anything to help us grow. [P12]

The lack of support from staff at some clinical sites, who did not adhere to the structured guideline on teaching and learning at the institution, also featured as a barrier to learning and the consequent feelings of anxiety "I think I was failing almost every test... I feel like at work, they were not supportive enough to maybe give me space to do my schoolwork" [P13].

Supervisory influence

Supervisory influence highlights the significant role that supervisors and mentors played, either positively or negatively, in shaping students' experiences, which impacted on student wellbeing. One student voiced her lack of engagement due to the sporadic absence of her supervisor. This absenteeism

created uncertainty and inconsistency in the WIL environment, leading to diminished motivation and disinterest in her work "You know my supervisor doesn't even show up some days at work. So, I don't see any reason why we must be there" [P12]. Another expressed a sense of disillusionment at the behavior of the supervisor, which had a negative influence on his experience "I would say, their behavior around us, is sometimes discouraging, because, you know, they're supposed to be supporting us and looking out for us but was not really that" [P2].

Conversely, another suggested that her experience was positive due to the flexibility and availability offered by her supervisor:

The supervisor I had last year used to do everything from theory, having lectures, after work, and he used to ask us if you have problems with assignments, with just anything related to school, and practicals. He used to teach us differently. [P5]

Likewise, one student recounted how the willingness of her supervisors to teach stimulated her interest in the subject, thereby creating a positive learning experience for her: "They played a huge role because they're always willing to teach me. Yeah. So, if it wasn't for them, I don't think I'd have this much interest that I have in my category that I'm doing" [P4].

Meeting educational responsibilities

To make the requisite clinical logs from time lost due to the national lockdown (because of the COVID-19 pandemic) and the halt in clinical services, extra hours had to be invested into meeting the prescribed clinical learning objectives. This resulted in students experiencing sheer exhaustion, which impacted negatively on their functioning: "Because we were away from the actual clinical training, you know we missed out a big chunk of that" [P10] and "when I came home today, I just passed out because I was so tired" [P5].

As a result of pressures to meet the requirements of the clinical logs, some students experienced mental turmoil in the form of paranoia, with the majority expressing some degree of anxiety and health deterioration "... it did make me a bit paranoid ..." [P9]. It appeared that the COVID-19 pandemic was also directly related to the poor mental health of some students:

You know, it's a big stress for we had a lot of COVID patients when we were on call, it was stressful. Also being alone when you were called out and you did have a COVID patient, and I think overall they put a lot of strain on you...[P11] and

So it was difficult especially when we were going to COVID wards and, you're standing next to a positive patient that mental game of like, did I touch something, did I touch my phone, or did I touch my pen, making sure everything was sanitized [P8].

Despite the overwhelmingly negative experiences during WIL, some students developed several attributes that could be described as a sense of empowerment. Students explained how they gained a higher level of adaptability and self-confidence as they had to often speak up for themselves or their peers if they wanted to achieve their learning goals.

So, I think you develop a lot of resilience throughout your degree because you always must keep pushing and I mean it is challenging ... it's just that you must work out to overcome the challenges. I think with me, my confidence grew being in the working environment because you

realize that if you don't speak up and if you just sit you tend to get forgotten in the background. [P4]

Ultimately overcoming adversity during the most challenging times contributed to this sense of empowerment: "there was a lot of things that I really had to put up with but at the end of the day, I've gotten past all of that, and I'm able to work quite well now" [P11].

Theme 2: Institutional Factors

This theme encompasses factors related to the overall organizational and structural elements, including policies, systems, and procedures that influenced students' learning experiences and ultimately their wellbeing.

Organizational and structural

Students in both private and public sectors experienced the challenge of a low-staffed department, which meant that they had to carry out duties that were beyond their level of expertise. This led to a sense of being overwhelmed and at times, hopelessness: "Where I was practicing it was busy and understaffed. So, we were treated less like students, and you didn't have time to do your assignments or your learning" [P7]. Some students also expressed frustration and anxiety at the university systems and administrative processes regarding the national lockdown, which unfolded during this time, as they felt that it could have been faster and more effective: "We hadn't received any directive from our university. So, there was a bit of absent communication there" [P3]. However, in all fairness to the university, these decisions had to be made after the required consultation with all affected stakeholders was undertaken.

Physical factors

Students also described the physical aspects of the WIL environment that influenced their learning. Some commented on the lack of access and connectivity to online platforms, which limited their ability to engage with study material or on learning platforms during WIL. This seemed to have caused a high level of frustration: "I found that at work, we didn't really have dedicated Wi-Fi. The signal at the hospital where we were, was awful. You could never use your own data because you just couldn't find good signal" [P13]. The pandemic also paused clinic and non-emergency services in many healthcare institutions, disrupting both clinical training and service delivery. Notwithstanding the sudden transition to the virtual platform for academic activities and the accompanying challenges which have been previously reported (Meyer et al., 2023), a broad sentiment expressed by students was one of social isolation: "It was hard, because there's a lot of quarantining and self-isolation that was done. It's basically a life of being indoors and people dying, and you just sit in front of the computer trying to get your work done" [P8]. While this in some way relates to the physical factors that influence their learning experiences, it also had implications for their mental health.

There was also a sense that the pandemic posed a disruption to their clinical training, since there were fewer patients, which limited the development of essential clinical skills and prevented them from meeting their learning objectives:

Because we had fewer patients, they would say... okay, you do this one, we've only got two patients. So, we found in terms of making up our logbooks, we had to really fit in more patients to make up our quotas. [P4]

While the literature on wellbeing suggests that economic factors impact student wellbeing (Gillett-Swan & Grant-Smith, 2018), only one student in this study alluded to the financial constraints that may have affected their wellbeing: "it's difficult when you aren't earning, and you need to set yourself up" [P13]. This isolated comment might be attributed to the stigma around communicating financial struggles, leading students to underreport or avoid discussing such challenges openly. There is also a possibility that these students have become accustomed to long-term financial struggles and therefore did not think it necessary to report this.

Theme 3: Social Factors

Social factors in the context of this study include aspects such as interpersonal relationships and social support networks, all of which students perceived as significant factors which impacted their overall wellbeing.

Interpersonal relationships

In terms of interpersonal relationships, there were various challenges expressed by students including the lack of engagement, and effective communication between students, the clinical staff, and other members of the healthcare team. This stemmed from situations where students perceived certain individuals, such as doctors, as difficult to approach or communicate with, as expressed by one student "even with the doctors, you don't have the most access to them. They're not the most approachable" [P6]. This perception could be the result of a variety of factors, including perceived authority, lack of empathy, or other communication barriers. When students find someone unapproachable, it can hinder their ability to ask questions, or engage effectively in academic or social settings.

The ability to communicate effectively with other team members with different personalities also posed a challenge, reflecting the complexity of interpersonal dynamics within this setting: "Emotional stability suffered as we had to work with different people who obviously had different personalities, and some even had feelings of not liking us, even though we didn't give them a reason" [P9].

Conversely, students indicated that the open communication and availability of their lecturers contributed positively to reducing the stress associated with learning during WIL: "I think we're getting support, and I never really had an issue in terms of communicating with the lecturers in the department. It was always very fast, and they were very helpful" [P12].

Support systems

Supportive structures facilitated by positive interpersonal relationships emerged dominantly in this theme. When prompted about how they managed to overcome the challenges in the WIL environment, students revealed that support from family, peers, clinical staff, and lecturers in the clinical environment all assisted in them attaining the success that they did. Even during the pandemic, one student said: "I was living with my friend, so, we encouraged each other. But if I was alone, I don't think I would cope" [P1]. Another student indicated: "My family were supportive because I'm out in the clinical field and they were worried about me, and then having to come home and learn and do assessments. They were very supportive in that aspect" [P4].

The support from the clinical staff was cited as a factor which promoted a sense of wellbeing. Students who were able to cope with challenges were assisted and supported by clinical staff, even for building an interest in the chosen sub-specialty. While some students voiced feelings of despondency due to boredom, one student credited their strong interest in their specialty to the support provided by the clinical staff:

The staff, they play a huge role, because they're always willing to show me, assist me and teach me stuff. If it wasn't for them, I don't think I'd have this much interest that I have in my category that I'm doing. [P9]

The involvement of senior clinical staff was also instrumental in promoting wellbeing “the Cardiologist from Cape Town came through. He taught us and helped us with assignments. If we didn't understand something he would explain to us” [P1].

DISCUSSION

Health sciences education is considered to be one of the most academically and emotionally demanding programs and such demands may result in a negative effect on the students' mental wellbeing (Pienaar et al., 2022). Despite the abundance of literature around WIL, a clear understanding of the specific needs of undergraduate students in health sciences is called for. In Clinical Technology (CT), students are placed in their 3rd and 4th year of study in accredited clinical training sites, as part of the WIL component, and are expected to simultaneously complete theoretical modules while undertaking practical training. The academic load pressure, individual factors, as well as exposure to human sickness and death, while simultaneously adjusting to the clinical environment may precipitate negative mental wellbeing.

While some stress is desirable, high-stress levels are associated with poor academic performance and declining empathy (Thomas et al., 2007). It is particularly relevant for the CT profession since there is a high theory and clinical load. This was shown in our study, where students experienced many challenges which were related to lack of preparation for the clinical environment, poor quality relationships with clinical staff, and anxiety due to the COVID-19 pandemic. Other stressors included a lack of educational support during WIL, as well as physical, organizational, and structural impediments, comparable to those reported by Rook (2017), and Adams-Hutcheson and Zegwaard (2023). Like Forbes (2011), factors which promoted a sense of wellbeing included strong support from family, peers, clinical and academic staff, which in turn, appeared to encourage the development of coping strategies reflected by adaptability, and a growth mindset. Our study further adds to the discourse, highlighting the additional impact of the COVID-19 pandemic on student wellbeing, and the additional burden of a resource-constrained setting. Our study also highlights the importance of adaptability, particularly in the post-COVID-19 era, which requires students to become far more self-sufficient, self-directed, and autonomous (Bowen, 2020).

It is established that a student's ability to prevent psychological distress is closely related to their individual factors, specifically to the development and use of coping strategies (Salami, 2010). This author reported that students with effective coping strategies were more likely to be intrinsically motivated to learn and were more disciplined with their academic activities. This was evident in our study, where students who actively managed their stress demonstrated adaptability, and a growth mindset. The outcomes of this were that these students experienced a sense of empowerment and were able to uplift themselves from a challenging environment while thriving in the clinical environment. These coping strategies propelled their personal development in terms of their graduate attributes in their profession, with this quality of work experience also being associated with positive outcomes for student performance at work (Drewery & Pretti, 2021).

The responsibility of creating quality WIL experiences should be a collaborative effort between students, educators, and employers (Drewery & Pretti, 2021). This is supported by a recent meta-analysis by Cant et al. (2021) who indicated that the supervisory relationship was key to students'

learning. The students in our study were able to thrive and overcome challenges in the clinical environment when there was a supportive and conducive environment; furthermore, students were challenged to develop their skills and 'think on their feet' while supervised. This is also supported by the work of Birks et al. (2017), who found that the best placements were those which challenged students to make clinical decisions and acquire new skills. Satisfaction with the learning environment and support from peers and other members of the healthcare team have been reported to assist students in achieving higher academic performance, protecting them from stress and exhaustion (Abdulghani et al., 2014). This may be attributed to the satisfaction that a student may derive due to the compatibility of the actual tasks and the culture in the organization with their career goals (Drewery & Pretti, 2021).

The dissatisfaction with the WIL environment, influenced by organizational factors like high workload, poor attitudes of supervisors and other members of the healthcare team, and lack of structure of the clinical environment, as well as lack of suitable infrastructure, impacted wellbeing. This manifested as frustration, anxiety, exhaustion, and lack of motivation. These findings are consistent with those of Pienaar et al. (2022) in a recent systematic review. These stressors, when uncontrolled by clinical staff, may transfer to the students under their care, with similar deleterious consequences. Furthermore, what is undisputed is the interrelatedness between academic performance and mental wellbeing (Dekker et al., 2020), and the need for strategies to address these. A determining factor of wellbeing in WIL is the extent to which the student is motivated to learn and succeed. Mäkinen et al. (2004) report that a loss of interest in studying is associated with lower grades and slower study progress. Although our study did not examine grades per se, students who lost motivation and interest expressed anxiety over their prospects in the profession. It has been reported that diminished interest combined with feelings of exhaustion may result in burnout, which develops over a longer period (Shanafelt et al., 2012). The danger and impact of burnout in making correct diagnoses and delivering quality patient care have been well established.

Finally, implications for students not seeking assistance for their poor mental wellbeing have been reported previously (Dyrbye et al., 2012), with far-reaching impacts on the students in terms of declining academic performance, and clinical skill acquisition in the WIL environment. When these students graduate, they may be less competent in both technical and soft skills, thus negatively impacting the quality of patientcare (Khuwaja et al., 2004).

RECOMMENDATIONS

While students' level of motivation and resilience are important enablers of learning during WIL, the responsibility of both the university and clinical environments to create conducive and appropriate learning environments cannot be ignored. Increased engagement between universities and clinical environments through the establishment of clear communication channels between students, academic supervisors, and clinical staff should be established to ensure that any concerns faced by students during their placements can be promptly addressed (Billett, 2015). Equipping academic and clinical supervisors to support students during WIL placements is crucial, and faculty development programs play a vital role in this process. Both universities and clinical environments should prioritize faculty development initiatives to ensure that supervisors have the necessary knowledge, skills, and resources to support the wellbeing of students undertaking WIL.

In addition, universities should ensure that students are adequately prepared for WIL, through the provision of comprehensive orientation programs. These programs should equip students with coping strategies, time management skills, and stress management skills so that they can navigate the demands

of WIL placements more effectively. In addition, students need to be supported during and after their placements at their respective WIL environments (Rowe & Winchester-Seeto, 2022). These support mechanisms should be supplemented with regular check-ins and monitoring of students' wellbeing by academic and clinical supervisors which can assist in early detection of potential issues and enable the provision of timely support (Patrick et al., 2008). Clinical environments should foster a supportive and inclusive workplace culture that promotes open communication, respect, and acceptance of diverse perspectives (Billett, 2015). Clinical supervisors should ensure that students are not subjected to excessive work demands or unrealistic expectations but have adequate access to learning opportunities.

While there are several resources on student mental health, for example, the inclusion of wellbeing in the curriculum (Houghton & Anderson, 2017), a counseling service, or a student mental health adviser, there is a perception of weakness among students in those who seek help for mental illness or poor wellbeing (Chew-Graham et al., 2003). Therefore, the effort to destigmatize help-seeking behavior for anxiety, and mental health issues in general, should be encouraged in the early university years. These activities should be incorporated into the curriculum and both clinical and academic supervisors should work with student mental health advisers to provide targeted support for affected students.

Furthermore, there needs to be a change in the culture across teaching and learning environments related to wellbeing. It is critical to recognize student experiences as complex and prioritize the development of attributes such as adaptability, resilience, and effective communication. While the wellbeing of the patient is central to any healthcare professional, students and staff in the WIL space need to be educated on how to identify stressful situations, and how to deal with these, by harnessing adaptive coping strategies (Sattar et al., 2022).

The results from this study highlight the lack of alignment between the formal and hidden curriculum. For example, while the renewed curriculum has introduced a new module on general education, those in the clinical environment may not necessarily align their teaching with this. Thus, it is necessary to make the teaching of student wellness (e.g. adaptability and resilience) more explicit so that values and behaviors that are role-modelled by lecturers, supervisors and clinical staff are aligned with the formal curriculum.

CONCLUSION

It is known that students' wellbeing is strongly linked to their connections with themselves, their families, peers, and the learning environment. The transition to the WIL environment and its effects, are the result of a longitudinal process of interrelated individual and environmental factors (Dekker et al., 2020). Our study shows that students who adopted a positive mindset and were motivated and adaptable, were able to thrive in all spheres of their academic life, even during a pandemic. Unfortunately, students who did not possess these attributes or who were placed in WIL environments that were not conducive to development, manifested with traits indicative of poor mental wellbeing. These findings highlight the need for HEIs as well as clinical training sites to recognize student adversities as complex and prioritize the development of such attributes, refine and monitor clinical site guidelines, improve clinical site monitoring, and introduce curricular change that supports adaptability, resilience, and effective communication.

This study heeds the call by Lanza et al. (2022) to consider the broad health effects of the recent pandemic and offer opportunities to tailor university services to improve student wellbeing and outcomes. Our study, therefore, recommends a holistic approach that assists students in effective planning for WIL, self-discipline in studying, and easy access to mental health support; in so doing,

this would support students in navigating the challenges of the WIL environment while balancing their academic work, social life, and health efficiently.

REFERENCES

- Abdulghani, H. M., Al-Drees, A. A., Khalil, M. S., Ahmad, F., Ponnampuruma, G. G., & Amin, Z. (2014). What factors determine academic achievement in high achieving undergraduate medical students? A qualitative study. *Medical Teacher*, 36(Sup1), S43-S48.
- Adams-Hutcheson, G., & Zegwaard, K. E. (2023). Wellbeing challenges students encounter during work placement. In K. E. Zegwaard, P. Lucas, K. Hay & J. Fleming (Eds.), *Work-Integrated Learning New Zealand 2023 refereed conference proceedings* (pp. 8-12). Work-Integrated Learning New Zealand.
- Aprile, K. T., & Knight, B. A. (2020). The WIL to learn: Students' perspectives on the impact of work-integrated learning placements on their professional readiness. *Higher Education Research & Development*, 39(5), 869-882.
- Atherley, A., Dolmans, D., Hu, W., Hegazi, I., Alexander, S., & Teunissen, P. W. (2019). Beyond the struggles: A scoping review on the transition to undergraduate clinical training. *Medical Education*, 53(6), 559-570.
- Billett, S. (2015). *Integrating practice-based experiences into higher education*. Springer.
- Birks, M., Bagley, T., Park, T., Burkot, C., & Mills, J. (2017). The impact of clinical placement model on learning in nursing: A descriptive exploratory study. *Australian Journal of Advanced Nursing*, 34(3), 16-23.
- Bowen, T. (2020). Work-integrated learning placements and remote working: Experiential learning online. *International Journal of Work-Integrated Learning*, 21(4), 377-386.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Byrnes, C., Ganapathy, V. A., Lam, M., Mogensen, L., & Hu, W. (2020). Medical student perceptions of curricular influences on their wellbeing: A qualitative study. *BMC Medical Education*, 20(1), Article 288. <https://doi.org/10.1186/s12909-020-02203-4>
- Cant, R., Ryan, C., Hughes, L., Luders, E., & Cooper, S. (2021). What helps, what hinders? Undergraduate nursing students' perceptions of clinical placements based on a thematic synthesis of literature. *SAGE Open Nursing*, Article 7. <https://doi.org/10.1177/23779608211035845>
- Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, 287, Article 112934.
- Chew-Graham, C. A., Rogers, A., & Yassin, N. (2003). 'I wouldn't want it on my CV or their records': Medical students' experiences of help-seeking for mental health problems. *Medical Education*, 37(10), 873-880.
- Council on Higher Education. (2000). *Towards a new higher education landscape: Meeting the equity, quality and social development imperatives of South Africa in the 21st century*. (Report of the Size and Shape of Higher Education Task Team).
- de Jager, S., & Steyn, R. (2023). Desperate times call for desperate measures: Student well-being versus academic integrity during and post the COVID-19 Pandemic in South Africa. *OIDA International Journal of Sustainable Development*, 16(12), 195-206.
- Dekker, I., De Jong, E. M., Schippers, M. C., De Bruijn-Smolters, M., Alexiou, A., & Giesbers, B. (2020). Optimizing students' mental health and academic performance: AI-Enhanced life crafting. *Frontiers in Psychology*, 11 Article . 1063. <https://doi.org/10.3389/fpsyg.2020.01063>
- Drewery, D., & Pretti, T. J. (2021). The building blocks of relevant work experiences. *International Journal of Work-Integrated Learning*, 22(2), 241-251.
- Drysdale, M. T., Twyford, K., Glenn, B., & Callaghan, S. A. (2021). Work, resilience and wellbeing: The long game of work-integrated learning. In S. J. Ferns, A. D. Rowe & K. E. Zegwaard (Eds.), *Advances in research, theory and practice in work-integrated learning* (pp. 75-84). Routledge.
- Dyrbye, L. N., Harper, W., Moutier, C., Durning, S. J., Power, D. V., Massie, F. S., Eacker, A., Thomas, M. R., Satele, D., Sloan, J. A., & Shanafelt, T. D. (2012). A multi-institutional study exploring the impact of positive mental health on medical students' professionalism in an era of high burnout. *Academic Medicine*, 87(8), 1024-1031. <https://doi.org/10.1097/ACM.0b013e31825cfa35>
- Ferns, S., Campbell, M., & Zegwaard, K. E. (2014). Work integrated learning. In S. Ferns (Ed.), *Work integrated learning in the curriculum* (pp. 1-6). Higher Education and Development Society of Australia..
- Forbes, D. L. (2011). Toward a unified model of human motivation. *Review of General Psychology*, 15(2), 85-98. <https://doi.org/10.1037/a0023483>
- Gillett-Swan, J., & Grant-Smith, D. (2018). A framework for managing the impacts of work-integrated learning on student quality of life. *International Journal of Work-Integrated Learning*, 19(2), 129-140.
- Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24(2), 105-112.

- Grant-Smith, D., & Feldman, A. (2023). Delivering quality WIL without compromising wellbeing: Exploring staff and student wellbeing in a WIL context through the lens of organisational health. *Student Success*, 14(3), 78-91. <https://doi.org/10.5204/ssj.2812>
- Grant-Smith, D., Gillett-Swan, J., & Chapman, R. (2017). *WIL wellbeing: Exploring the impacts of unpaid practicum on student wellbeing*. National Centre for Student Equity in Higher Education (NCSEHE) Australia..
- Hamza, C. A., Ewing, L., Heath, N. L., & Goldstein, A. L. (2021). When social isolation is nothing new: A longitudinal study on psychological distress during COVID-19 among university students with and without preexisting mental health concerns. *Canadian Psychology/Psychologie Canadienne*, 62(1), 20-30.
- Hay, K. (2023). *Work-Integrated Learning New Zealand 2023 refereed conference proceedings*. Work-Integrated Learning New Zealand
- Hope, V., & Henderson, M. (2014). Medical student depression, anxiety and distress outside North America: A systematic review. *Medical Education*, 48(10), 963-979.
- Houghton, A.-M., & Anderson, J. (2017). Embedding mental wellbeing in the curriculum: Maximising success in higher education. *Higher Education Academy*, 68, 1-44.
- Ibarra-Mejia, G., Lusk, M., & Jeon, S. (2022). Stress, anxiety, and depression among Latinx university students during the COVID-19 pandemic. *Social Development Issues*, 43(1). <https://doi.org/10.3998/sdi.1815>
- International Journal of Work-Integrated Learning. (2020). *Home/Articles*. WILNZ. <https://www.ijwil.org/>
- Khuwaja, A. K., Qureshi, R., & Azam, S. (2004). Prevalence and factors associated with anxiety and depression among family practitioners in Karachi, Pakistan. *Journal of Pakistan Medical Association*, 54(2), 45.
- Konstantinou, I., Gerhardt, T., & Miller, E. (2023). Supporting the wellbeing of students: A framework for work-integrated learning programs. In K. E. Zegwaard & T. J. Pretti (Eds.), *Routledge international handbook of work-integrated learning* (pp. 533-547). Routledge.
- Lanza, S. T., Whetzel, C. A., Linden-Carmichael, A. N., & Newschaffer, C. J. (2022). Change in college student health and well-being profiles as a function of the COVID-19 pandemic. *PLoS ONE*, 17(5), Article e0267724.
- Litmanen, T., Loyens, S. M., Sjöblom, K., & Lonka, K. (2014). Medical students' perceptions of their learning environment, well-being and academic self-concept. *Creative Education*, 5, 856-1868.
- Mäkinen, J., Olkinuora, E., & Lonka, K. (2004). Students at risk: Students' general study orientations and abandoning/prolonging the course of studies. *Higher Education*, 48, 173-188.
- McDonald, P., & Grant-Smith, D. (2020). Unpaid work experience and internships: A growing and contested feature of the future of work. In A. Wilkinson & M. Barry (Eds.), *The future of work and employment* (pp. 33-48). Edward Elgar Publishing.
- Meyer, R., Prakaschandra, D. R., & Bhagwan, R. (2023). Clinical technology students' and academics' perceptions of clinical work-integrated learning to inform curricular change. *International Journal of Work-Integrated Learning*, 24(3), 371-385.
- Neves, J., & Stephenson, R. (2023). *Student academic experience survey, 2023*. Higher Education Policy Institute.
- Patrick, C.-j., Peach, D., Pocknee, C., Webb, F., Fletcher, M., & Pretto, G. (2008). *The WIL (Work Integrated Learning) report: A national scoping study*. Australian Learning and Teaching Council.
- Pienaar, M., Orton, A. M., & Botma, Y. (2022). A supportive clinical learning environment for undergraduate students in health sciences: An integrative review. *Nurse Education Today*, 119. Article 105572.
- Prakaschandra, D. R., Meyer, R., & Bhagwan, R. (2023). An exploratory study of the clinical technology undergraduate program in South Africa: Preparedness of students for clinical practice. *Journal of Education and Health Promotion*, 12(1), Article 20
- Rook, L. (2017). Challenges implementing work-integrated learning in human resource management university courses. *Asia-Pacific Journal of Cooperative Education*, 18(3), 199-212.
- Rowe, A. D., & Winchester-Seeto, T. (2022). Support for student learning in work-integrated learning: A holistic framework. In S. J. Ferns, A. D. Rowe & K. E. Zegwaard (Eds.), *Advances in research, theory and practice in work-integrated learning* (pp. 96-106). Routledge.
- Rowe, A. D., & Zegwaard, K. E. (2017). Developing graduate employability skills and attributes: Curriculum enhancement through work-integrated learning. *Asia-Pacific Journal of Cooperative Education*, 18(2), 87-99.
- Salami, S. O. (2010). Emotional intelligence, self-efficacy, psychological well-being and students attitudes: Implications for quality education. *European Journal of Educational Studies*, 2(3), 247-257.
- Sattar, K., Yusoff, M. S. B., Arifin, W. N., Yasin, M. A. M., & Nor, M. Z. M. (2022). Effective coping strategies utilised by medical students for mental health disorders during undergraduate medical education-a scoping review. *BMC Medical Education*, 3(1), Article 121. <https://doi.org/10.1186/s12909-022-03185-1>
- Shanafelt, T. D., Boone, S., Tan, L., Dyrbye, L. N., Sotile, W., Satele, D., West, C. P., Sloan, J., & Oreskovich, M. R. (2012). Burnout and satisfaction with work-life balance among US physicians relative to the general US population. *Archives of Internal Medicine*, 172(18), 1377-1385.
- Strydom, F., Kuh, G., & Mentz, M. (2010). Enhancing success in South Africa's higher education: Measuring student engagement. *Acta Academica*, 42(1), 259-278.

- Taylor, C. E., Scott, E. J., & Owen, K. (2022). Physical activity, burnout and quality of life in medical students: A systematic review. *The Clinical Teacher*, 19(6), Article e13525.
- Thomas, M. R., Dyrbye, L. N., Huntington, J. L., Lawson, K. L., Novotny, P. J., Sloan, J. A., & Shanafelt, T. D. (2007). How do distress and well-being relate to medical student empathy? A multicenter study. *Journal of General Internal Medicine*, 22, 177-183.
- Venketsamy, R., Hu, Z., & Razlog, R. (2022). Exploring students' experiences of interprofessional education to improve quality learning outcomes. *Journal for the Education of Gifted Young Scientists*, 10(3), 385-398.
- Winzer, R., Lindberg, L., Guldbrandsson, K., & Sidorchuk, A. (2018). Effects of mental health interventions for students in higher education are sustainable over time: A systematic review and meta-analysis of randomized controlled trials. *PeerJ*, 6, Article e4598. <https://doi.org/10.7717/peerj.4598>
- Xu, D., & Jaggars, S. S. (2014). Performance gaps between online and face-to-face courses: Differences across types of students and academic subject areas. *The Journal of Higher Education*, 85(5), 633-659.



International Journal of Work-Integrated Learning

ISSN: 2538-1032

www.ijwil.org

About the Journal

The International Journal of Work-Integrated Learning (IJWIL) publishes double-blind peer-reviewed original research and topical issues related to Work-Integrated Learning (WIL). IJWIL first published in 2000 under the name of Asia-Pacific Journal of Cooperative Education (APJCE).

In this Journal, WIL is defined as:

An educational approach involving three parties – the student, educational institution, and an external stakeholder – consisting of authentic work-focused experiences as an intentional component of the curriculum. Students learn through active engagement in purposeful work tasks, which enable the integration of theory with meaningful practice that is relevant to the students' discipline of study and/or professional development (Zegwaard et al., 2023, p. 38).*

Examples of practice include off-campus workplace immersion activities such as work placements, internships, practicum, service learning, and cooperative education (co-op), and on-campus activities such as work-related projects/competitions, entrepreneurship, student-led enterprise, student consultancies, etc. WIL is related to, and overlaps with, the fields of experiential learning, work-based learning, and vocational education and training.

The Journal's aim is to enable specialists working in WIL to disseminate research findings and share knowledge to the benefit of institutions, students, WIL practitioners, curricular designers, and researchers. The Journal encourages quality research and explorative critical discussion that leads to the advancement of quality practices, development of further understanding of WIL, and promote further research.

The Journal is financially supported by the Work-Integrated Learning New Zealand (WILNZ; www.wilnz.nz), and the University of Waikato, New Zealand.

Types of Manuscripts Sought by the Journal

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

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

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

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

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

Reference

Zegwaard, K. E., Pretti, T. J., Rowe, A. D., & Ferns, S. J. (2023). Defining work-integrated learning. In K. E. Zegwaard & T. J. Pretti (Eds.), *The Routledge international handbook of work-integrated learning* (3rd ed., pp. 29-48). Routledge. <https://doi.org/10.4324/9781003156420-4>



International Journal of Work-Integrated Learning

ISSN: 2538-1032

www.ijwil.org

EDITORIAL BOARD

Editor-in-Chief

Assoc. Prof. Karsten Zegwaard

University of Waikato, New Zealand

Associate Editors

Assoc. Prof. Bonnie Dean

University of Wollongong, Australia

Dr. David Drewery

University of Waterloo, Canada

Assoc. Prof. Jenny Fleming

Auckland University of Technology, New Zealand

Assoc. Prof. Sonia Ferns

Curtin University, Australia

Dr. Judene Pretti

University of Waterloo, Canada

Dr. Anna Rowe

University of New South Wales, Australia

Senior Editorial Board Members

Dr. Craig Cameron

University of the Sunshine Coast, Australia

Dr. Phil Gardner

Michigan State University, United States

Assoc. Prof. Kathryn Hay

Massey University, New Zealand

Prof. Denise Jackson

Edith Cowan University, Australia

Assoc. Prof. Ashly Stirling

University of Toronto, Canada

Emeritus Prof. Janice Orrell

Flinders University, Australia

Emeritus Prof. Neil I. Ward

University of Surrey, United Kingdom

Dr. Theresa Winchester-Seeto

University of New South Wales, Australia

Copy Editor

Diana Bushell

International Journal of Work-Integrated Learning

IT Support

Erik van der Gaag

International Journal of Work-Integrated Learning

REVIEW BOARD

Assoc. Prof. Erik Alanson, University of Cincinnati, United States

Assoc. Prof. Martin Andrew, Otago Polytechnic, New Zealand

Prof. Dawn Bennett, Curtin University, Australia

Dr. Roelien Brink, Tshwane University of Technology, South Africa

Mr. Matthew Campbell, University of Queensland, Australia

Assoc. Prof. Clare Dannenberg, University of Canterbury, New Zealand

Dr. Julia Caldicott, Southern Cross University, Australia

Prof. Leigh Deves, Charles Darwin University, Australia

Prof. Michelle Eady, University of Wollongong, Australia

Dr. Alon Eisenstein, University of British Columbia, Canada

Assoc. Prof. Chris Eames, University of Waikato, New Zealand

Assoc. Prof. Wendy Fox-Turnbull, University of Waikato, New Zealand

Dr. Nigel Gribble, Curtin University, Australia

Prof. Rachael Hains-Wesson, RMIT University, Australia

Dr. Lynette Hodges, Massey University, New Zealand

Dr. Katharine Hoskyn, Auckland University of Technology, New Zealand

Dr. Nancy Johnston, Simon Fraser University, Canada

Dr. Julian Lee, RMIT University, Australia

Dr. Patricia Lucas, Auckland University of Technology, New Zealand

Dr. Jaqueline Mackaway, Macquarie University, Australia

Prof. Andy Martin, Massey University, New Zealand

Dr. Norah McRae, University of Waterloo, Canada

Dr. Katheryn Margaret Pascoe, University of Otago, New Zealand

Dr. Laura Rook, University of Wollongong, Australia

Assoc. Prof. Philip Rose, Hannam University, South Korea

Dr. Leoni Russell, RMIT, Australia

Dr. Jen Ruskin, Macquarie University, Australia

Dr. Andrea Sator, Simon Fraser University, Canada

Dr. David Skelton, Eastern Institute of Technology, New Zealand

Assoc. Prof. Calvin Smith, University of Queensland, Australia

Assoc. Prof. Judith Smith, Queensland University of Technology, Australia

Dr. Raymond Smith, Griffith University, Australia

Prof. Roger Strasser, Simon Fraser University, Canada

Dr. Kylie Taffard, University of Canterbury, New Zealand

Prof. Yasushi Tanaka, Kyoto Sangyo University, Japan

Dr. Raewyn Tudor, University of Canterbury, New Zealand

Dr. Faith Valencia-Forrester, Charles Sturt University, Australia

Dr. Thai Vu, Curtin University, Australia

Ms. Genevieve Watson, Elysium Associates Pty, Australia

Dr. Nick Wempe, Primary Industry Training Organization, New Zealand

Prof. Chris Winberg, Cape Peninsula University of Technology, South Africa

Dr. Karen Young, Deakin University, Australia

Publisher: Work-Integrated Learning New Zealand (WILNZ)

www.wilnz.nz

Copyright: CC BY 4.0