

Applying universal design for learning to work-integrated learning: Designing for inclusion and equity

KAVITA RAO

University of Hawai'i, Honolulu, United States of America

EMILY GARANT-JONES¹

University of Wollongong, Wollongong, Australia

Toronto Metropolitan University, Toronto, Canada

BONNIE AMELIA DEAN

MICHELLE J. EADY

University of Wollongong, Wollongong, Australia

Work-integrated learning (WIL) is crucial for the development of employability skills and has an influence on employment outcomes. Given the significance of WIL pedagogies for graduate preparedness and transitions into work, concerns have been raised on the barriers to access and participation in WIL for some cohorts of learners. Equity and inclusion in WIL, that is, considerations for diverse learners once enrolled into a subject or course with varying WIL components, is not a new concept with some guidelines purported over a decade ago. Designing WIL to accommodate for equity and inclusion, however, has presented challenges with few studies offering navigation for curriculum design. This paper draws on empirically sound curriculum design principles for inclusion for learner variability through Universal Design for Learning (UDL), to offer the UDL for WIL design framework. The paper presents conceptual and practical contributions for educators of WIL experiences to reduce barriers and integrate student voice to support all graduates' career transitions.

Keywords: Higher education, equity, inclusion, access, universal design

In the last decade, governments and higher education institutions have paid increasing attention to work-integrated learning (WIL) incentives and strategies as a solution to developing positive graduate outcomes (Bell et al., 2021). WIL is broadly recognized as effective in developing work-ready competencies amongst students of higher education (Jackson & Dean, 2022; Keen & Eady, 2022; Zegwaard & Rowe, 2019). While research demonstrates clear links between WIL participation and favorable post-graduation employment outcomes (Jackson & Dean, 2022), it has also shown that WIL is not experienced in the same way across various cohorts of students (Harvey et al., 2017; Itano-Boase et al., 2021; Jackson et al., 2023). WIL programs, when designed without consideration of equity and inclusion, can perpetuate social inequities by replicating systems that reward students who hold greater social and cultural capitals (Jackson & Dean, 2022). To facilitate WIL in a way that is beneficial to all stakeholders, WIL must be inclusive and designed with diversity of student groups as well as individual learner variability in mind.

Drawing on principles of Universal Design for Learning (UDL), this paper demonstrates how equitable and inclusive WIL can be designed in higher education. UDL is a scientifically-based framework for addressing learner variability through proactive design (Meyer et al., 2014). UDL has three main principles - engagement, representation, and action and expression - with specific guidelines to consider when designing educational experiences and environments for diverse learners. Specifically, this paper illustrates how higher education faculty working with industry/community partners can use inclusive instructional design practices, grounded in principles of UDL, to reduce barriers and create experiences that allow students to thrive in WIL. While access to WIL is a significant concern and

¹ Corresponding author: Emily Jones, ej182@uowmail.edu.au

addressed elsewhere (Dollinger et al., 2023; Itano-Boase et al., 2021), this paper focuses on inequities that exist once a student is enrolled into WIL. Considering students' strengths, backgrounds, preferences, and needs, this UDL for WIL design process allows faculty to consider the varied identities of their students – including the cultural and linguistic backgrounds of learners - and to integrate student voice and agency (Rao, 2019; Tobin & Behling, 2018). Using a proactive and intentional design process, educators can create customized and unique WIL experiences that honor students' abilities and needs (Rao, 2021) and support the career-readiness of all university graduates. To unpack these ideas, the paper first provides an overview of how higher education and WIL pedagogies have evolved to seek inclusion of all learners. Next, fundamental design principles of UDL are introduced before a conceptual model applying UDL-aligned strategies in WIL are presented. The paper closes with considerations for future directions for inclusivity in WIL.

HIGHER EDUCATION: ACCOMMODATING ALL LEARNERS

Participation in higher education has increased around the world due to government and institutional initiatives to widen participation in under-represented groups. The need for universities to accommodate more diverse groups of learners was initiated 40 years ago, with early responses seen as policy ambitions rather than operational plans (H. O'Shea, 1986). These concerns highlighted that widening participation was fraught, targeting admission schemes and resources not adequately addressing the needs of all groups of students in equitable ways. At the time it was said that “unless institutions fully accept the principle of equity, neither this nor any similar policy will be successfully implemented” (H. O'Shea, 1986, p. 67). Radical transformation of higher education policy in decades since, has seen equity and inclusion as centerpieces to access and transition efforts, curriculum design and support services.

Stemming from these policy initiatives, there is greater access to higher education institutions today for diverse groups of learners. For example, over half of Australian students are first-in-family at university, and often belong to one or more equity groups (S. O'Shea, 2020). Students with disabilities are also enrolling in universities at higher rates, with support provided by disability support services on campus. There is recognition that program and course offerings should also support students from culturally and linguistically diverse backgrounds. Many institutions have engaged in efforts towards reconciliation with local Indigenous communities to enable greater inclusion of Indigenous students (e.g. Toronto Metropolitan University, 2021; University of Wollongong, 2022). Inclusivity has become a strategic question for a number of universities and higher education institutions, impacting learning and teaching, research and institutional cultures. These institutions have taken action to find new ways to enable people from traditionally less-represented backgrounds to find their place in higher education (Claeys-Kulik et al., 2019). Core success factors for fostering equity, diversity, and inclusion among students, academic and non-academic staff have been recognized as: institutional leadership, involvement of target groups in developing and implementing initiatives, resourcing and, to a much lesser extent, providing “diverse learning environments improving the students experience” (Claeys-Kulik et al., 2019, p.31). Interestingly, the role of learning for diverse learners within the learning environment and curriculum is seen as less important to their success and perhaps requires more attention.

Students from under-represented groups often experience systematic and sociocultural barriers throughout their university studies. A recent Australian study of over 80,000 graduates found students from under-represented groups - particularly Indigenous students, students from a lower socioeconomic status (SES) and students from non-English speaking backgrounds - are outperformed

academically by their more privileged counterparts (Li et al., 2023). Recent research demonstrates that students' social and economic environments play a key role in their educational outcomes, whereas social, cultural, and to a lesser extent economic environments predict employment outcomes (Hosein et al., 2023). While some research shows there is a definitive pattern of employment outcomes for marginalized identities in general (Hosein et al., 2023), elsewhere other research demonstrates that there are differences in employment outcomes for students from different equity groups (Jackson et al., 2023). With the COVID-19 pandemic exacerbating student equity issues (S. O'Shea et al., 2021), greater attention is needed on both institutional strategies, but also curriculum-based approaches to support students transitioning through higher education and into future careers.

EQUITY AND INCLUSION IN WIL

WIL is crucial to supporting learners to develop key employability skills that prepare them for career possibilities, however access and support for WIL is not experienced equally by all student groups (Jackson et al., 2023). Equity is about "providing students with the supports they need to participate – it is about removing barriers, redressing disadvantage and creating a level playing field" (Crawford, 2022, p.1). This differs from equality, where all are given the same supports or opportunities. Equity cohorts, or equity groups, therefore, are students who face barriers to full participation and inclusion, and experience forms of systemic disadvantage. Sourcing WIL opportunities can be contentious for students from equity cohorts with recruitment practices privileging those with higher social capital and networks to arrange placement experiences (Jackson et al., 2023; Lloyd et al., 2019). Vulnerabilities are exposed in self-sourcing models where systematic prejudices or biases on students' capabilities and motivations have been observed (Lloyd et al., 2019). Inequalities in sourcing WIL is highlighted for international students, who actively seek work-based opportunities, yet report difficulties in sourcing opportunities when compared to their domestic peers (Gribble & McRae, 2017). For students with disabilities, while motivated to participate in placements, some have concerns about how their disclosure and accommodations will be facilitated (Dollinger et al., 2023). Concerns highlight how their work might impact on their health and whether they will be accepted without judgment in the workplace.

Students from equity groups have also disclosed barriers to participating in WIL placements, such as balancing WIL with paid work and caring commitments (Hoskyn et al., 2020; Peach et al., 2016). Students have raised concerns around their wellbeing and financial stress (Grant-Smith et al., 2017), particularly those from a remote or regional area or from a low socioeconomic background, who may struggle with travel, accommodation or time pressures (Lloyd et al., 2019). In an Australian study, Indigenous students were found to have low self-perceptions of employability as well as low participation in university-organized internships, despite reporting high rates of employment (Keen & Eady, 2022).

Non-placement models of WIL are endorsed as alternative approaches to placements that have potential for enabling greater access and flexibility for all stakeholders (Dean et al., 2020). Bell and colleagues (2021) recently explored the multiple benefits of online WIL that can potentially reduce some barriers for equity groups. They found that students with health risks and who may belong to one or more equity groups, benefit from online WIL and affordances of flexibility, engaging in meaningful work and skill development. Yet, barriers are still experienced in online modes, such as digital capabilities, access to effective internet and fatigue from being online (Bell et al., 2021).

A recent national study of Australian graduates, reporting on the perceptions of employability and employment outcomes across different equity groups, found that access to WIL varies for students from different backgrounds (Jackson et al., 2023). However, all forms of WIL were reported as helpful, with work-based WIL closely followed by non-placement and global WIL, found to have significant impact on feelings of work preparation for all student groups. When access is prioritized, students experience positive outcomes in their reported employability and employment outcomes, reinforcing the necessity for inclusivity in WIL. Overall, of those studies investigating equity and inclusion in WIL, there is a unified message that the design and implementation of WIL is not adequately supporting diverse student cohorts (Dollinger et al., 2023). Studies echo a recommendation advocating for change in policy and practice and greater institutional awareness and support (Dollinger et al., 2023; Grant-Smith et al., 2017; Jackson et al., 2023; Lloyd et al., 2019; Peach et al., 2016).

However, there is no agreed-upon definition of access or inclusion that spans the multiple stakeholders involved in WIL: students, industry and community partners and institutions of higher education. Gidley and colleagues, in discussing social inclusion in Australia, note that “[a]ccess is about numbers and percentages and does not necessarily reflect student participation or success, nor does it reveal anything about the quality of the education that is accessed” (Gidley et al., 2010, p. 132). They propose that inclusion “aims to enable all [...] to participate fully in society with respect for their human dignity” (Gidley et al., 2010, p. 134). Applied to WIL, genuine inclusion would allow students equitable opportunities to experience success in WIL, regardless of the barriers that they may face. There are various factors involved in creating equitable WIL environments, including institutional considerations, organizational capacity, and stakeholder perspectives. In this paper, we focus on one aspect that is essential to addressing equity in WIL – intentional and proactive design of WIL experiences centering equity and inclusion as a focus.

While the benefits of WIL are extensive, these benefits are not experienced by all students (Bell et al., 2021; Itano-Boase et al., 2021; Pham et al., 2018). Students who do not have access to social and cultural capitals held by dominant sociocultural groups are especially disadvantaged when engaging in WIL (Felton & Harrison, 2017). With increasingly diverse student populations in higher education (Bell et al., 2021; Valencia-Forrester et al., 2019), and the reliance on WIL to meet employability and economic outcomes, it is imperative that WIL be designed to benefit all students. The importance of proactively supporting an increasingly diverse population of post-secondary students is at the forefront of higher education policy globally (Tavares et al., 2022; Tobin & Behling, 2018).

UNIVERSAL DESIGN LEARNING PRACTICES IN HIGHER EDUCATION

Universal Design for Learning (UDL) is a framework that has gained traction in post-secondary efforts at inclusivity over the past decade (Bracken & Novak, 2019). The UDL framework, developed by CAST (Meyer et al., 2014) has three main principles – engagement, representation, and action and expression. These principles are defined by nine guidelines and 31 checkpoints (see Appendix A). The guidelines and checkpoints delineate strategies and practices that can be utilized by educators as they design inclusive learning environments. Details on each guideline and checkpoint can be found on CAST’s website (CAST, 2018). These UDL guidelines can be used by educators and instructional designers to consider the needs of learners and to proactively build in supports that provide flexible and engaging ways for all learners to thrive (Meyer et al., 2014).

When UDL gained popularity as a framework for inclusion, in the late 1990s and early 2000s, it was often associated with inclusion for students with disabilities (Rao et al., 2023). In the past two decades,

the promise of UDL as a framework to address inclusion in a broader sense – for example, supporting the needs of culturally and linguistically diverse students, first generation learners, international students – and to address the intersectional identities of students has emerged (Waitoller & King Thorius, 2016). CAST is currently in the process of engaging varied stakeholders to re-envision and re-define how the UDL guidelines can address systemic inequities and be used to address social justice in educational environments (Rao et al., 2023; Rose et al., 2021).

The UDL framework can be used to intentionally and proactively design inclusive learning environments. UDL can be applied to the development of various types of experiences that students have during their post-secondary journey. Faculty, administrators, and instructional designers can use a UDL-based design process and the UDL guidelines as they develop courses, programs, and experiences. Below, essential UDL design practices that can be used by educators who are seeking to design inclusive learning experiences are outlined. These practices include: (a) identifying learner variability, (b) reducing barriers and integrating supports/scaffolds and (c) designing and implementing inclusive learning experiences.

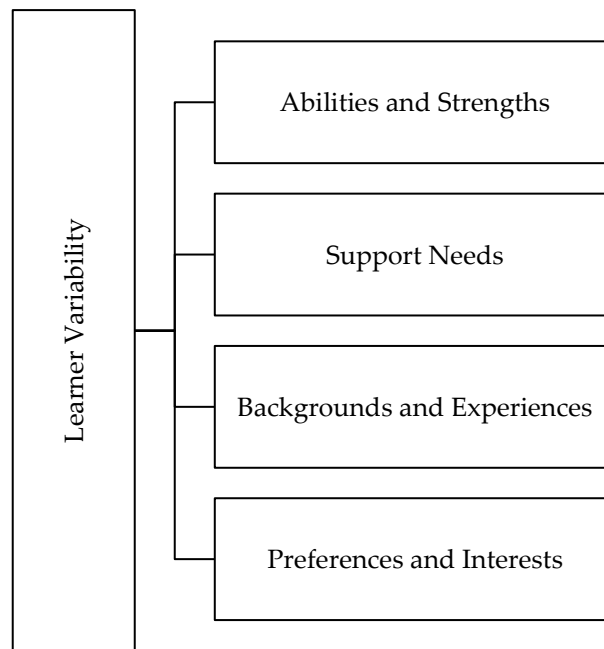
Identify Learner Variability

UDL-based design begins by identifying and addressing learner variability (Figure 1). Learner variability acknowledges that each individual brings a constellation of personal characteristics – abilities/strengths, preferences/interests, backgrounds/experiences and support needs – to their learning journey, impacting how they experience their schooling. In contrast to diversity, which connotes ways in which students vary from the dominant group, variability does not focus on specific groups of students, but is applicable to all learners. For UDL-based design practices, it is essential to take learner variability into account from the outset and design proactively to create an optimal learning experience for all. Learner variability is systematic and predictable, which allows educators to begin designing based on what they know about the characteristics of their students.

When planning a course or learning experience, educators can begin by considering the variability of the students they typically teach. Once educators are working with students, they can undertake practices to further understand the variability factors of the students in their classes. For example, in a small class, faculty can engage in discussions or activities to find out what their students' needs, preferences, and backgrounds are. In larger classes, faculty may use a learner inventory to learn more about the backgrounds, preferences, strengths, and needs of their students. UDL-based design also takes an assets-based approach, acknowledging that educational experiences should leverage on the strengths, interests, and experiences of learners. Asset-based pedagogies view the diversity students bring to educational settings as strengths, rather than deficits that must be overcome by engaging in education (Mein, 2018).

Taking an assets-based approach, educators can consider where the strengths/abilities, backgrounds/experiences, and preferences/interests of students can be addressed in the learning experience to leverage the assets that students bring to the classroom.

FIGURE 1: Components of learner variability.



Note. From "Inclusive Instructional Design: Applying UDL to Online Learning," by K. Rao, 2021, *Journal of Applied Instructional Design*, 10(1), p. 85 (https://edtechbooks.org/jaid_10_1/preparing_teachers_f). CC BY 4.0.

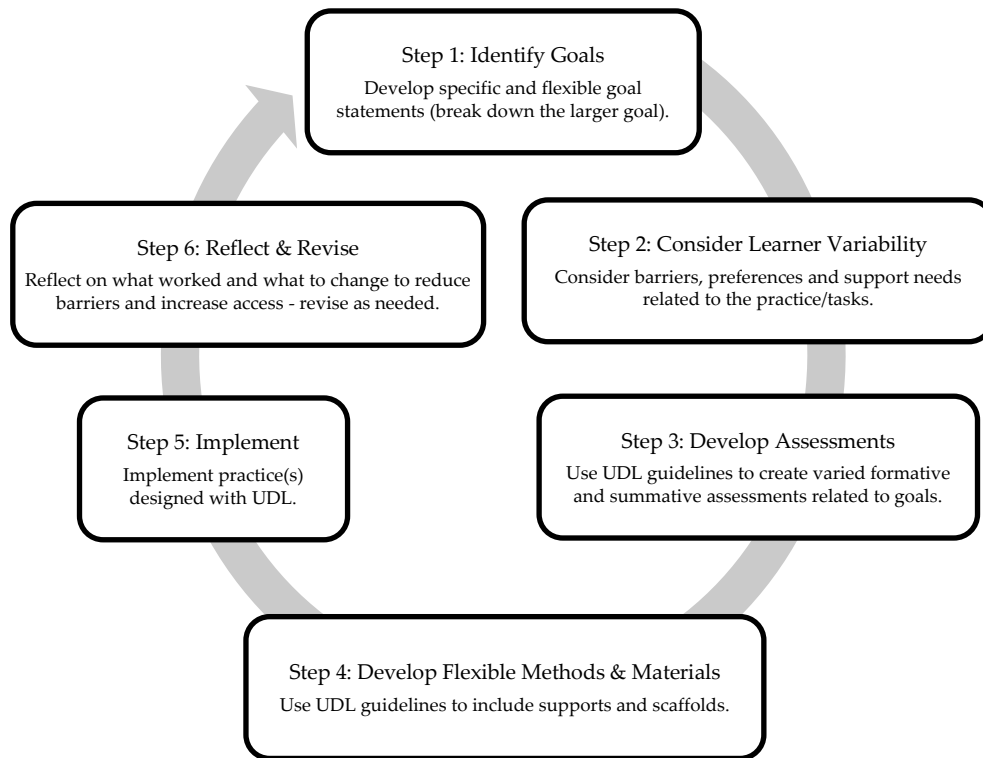
Reduce Barriers and Integrate Supports/Scaffolds

A key premise of UDL is that barriers exist in the curriculum, not in the individual (Meyer & Rose, 2005). UDL focuses on proactively anticipating and reducing barriers as we design learning experiences, emphasizing the need to integrate supports that provide flexibility and choice and enhance engagement for students. By first identifying learner variability factors, educators can begin the design process with an intentional consideration of their learners' needs, preferences, abilities, and backgrounds. They can take this information to inform instructional design decisions that reduce barriers and integrate supports and instructional scaffolds aligned to their learners' needs. Taking an assets-based lens, educators should also consider what students bring to their learning experience and what they want from their experiences, integrating ways to support learners' strengths/abilities and honor their backgrounds/experiences. For example, students who have moved extensively may have developed resilience, cultural competence, or multilingual skills as a result of their life experiences, assets that can be integrated into the learning experience.

Design and Implement Inclusive Learning Experiences

The UDL Design Cycle (Rao & Meo, 2016; Torres & Rao, 2019) integrates the concepts of identifying learner variability, reducing barriers, and providing supports through a step-by-step process. The UDL Design Cycle provides a structure for instructional design, allowing educators to integrate inclusive practices with forethought and intentionality. This UDL Design Cycle (Figure 2), begins with identifying clear goals, considering learner variability and anticipating ways to reduce barriers/integrate supports, and then strategically designing learning experiences. As part of the UDL Design Cycle, educators can refer to the UDL guidelines to consider appropriate supports related to the three principles of UDL: engagement, representation, and action and expression.

FIGURE 2: Universal Design for Learning design cycle.



Note. Adapted from “Using Universal Design for Learning to Design Standards-Based Lessons,” by K. Rao and G. Meo, 2016, *SAGE Open*, 6(4) (<https://doi.org/10.1177/2158244016680688>). CC BY 3.0 and from *UDL for Language Learners* (p. 10), by C. Torres and K. Rao, 2019, CAST Publishing (<https://publishing.cast.org/catalog/books-products/udl-language-learners-torres-rao>). Copyright 2024 by CAST, Inc. Used with permission.

UNIVERSAL DESIGN FOR LEARNING FOR WORK-INTEGRATED LEARNING STRATEGIES

To ensure that all stakeholders, and especially students, experience the benefits of WIL, both WIL educators and professional staff must account for learner variability, reduce barriers, and implement inclusive learning environments. Just as every learner possesses a range of personal characteristics that impact how they learn, all WIL participants bring differing strengths, preferences and lived experiences to WIL. It is necessary to account for this variability in designing WIL for all students. WIL design without an acknowledgement that learner variability exists within all learners risks perpetuating inequities and providing access to success only for those students who more easily understand and navigate dominant social norms. In Table 1 below, the UDL for WIL process are delineated into the three areas. A full set of the UDL guidelines can be found on CAST’s website (CAST, 2018). These strategies can be used by faculty who are part of designing and implementing a WIL experience, while engaging students and industry/community partners in the process.

The essential UDL design practices and the strategies denoted in Table 1 can be applied to the stages of WIL, to proactively support students and engage faculty members and industry/community partners from the pre-planning to the post-placement stages. In the next section, we illustrate how UDL design practices and some of the specific strategies listed in Table 1 can be integrated at each stage.

TABLE 1: UDL for WIL strategies for designing inclusive WIL experiences.

UDL Principles	UDL-aligned strategies for inclusive WIL experiences
Engagement	<p>Guideline 7. Options for Recruiting interest</p> <ul style="list-style-type: none"> ● Proactively create safe and welcoming spaces ● Engage students to understand how they would like their cultural perspectives and backgrounds to be reflected in their WIL experience ● Anticipate and reduce threats and distractions for students <p>Guideline 8. Options for Sustaining effort and persistence</p> <ul style="list-style-type: none"> ● Engage students in discussions about their specific needs, abilities/strengths, interests/preferences and backgrounds/experiences and co-plan the WIL experience taking student preferences into account ● Facilitate dialogue around students career interests to seek alignment with WIL host organizations ● Let students know that there are open lines of communication if they encounter challenges or have questions during experience ● Create pathways ongoing and iterative interaction and communication (e.g., peer to peer, faculty mentor to student, group of students with faculty guidance) <p>Guideline 9. Options for self-regulation</p> <ul style="list-style-type: none"> ● Provide opportunities for ongoing reflection before, during and after WIL experiences ● Create opportunities to provide just-in-time guidance and mentorship ● Arrange for check in's with students and supervisors to gather feedback on the work, engagement and well-being ● Create opportunities for students to receive formative and summative feedback to act on and shape future practice
Representation	<p>Guideline 1. Options for perception</p> <ul style="list-style-type: none"> ● Use varied formats to communicate/represent information. For example, consider when students may need or benefit from auditory information or text-based information. <p>Guideline 2. Options for language, mathematical expressions, and symbols</p> <ul style="list-style-type: none"> ● Engage with industry/community partner to provide information on field-specific vocabulary or language that students may encounter in WIL experiences <p>Guideline 3. Options for comprehension</p> <ul style="list-style-type: none"> ● Ensure that expectations are clear and comprehensible for all stakeholders, for example develop a learning contract outlining expectations, project or role scope and any due dates ● Highlight key aspects that students need to know for their WIL experiences ● Consider how to make explicit “hidden curriculum” (implied expectations, norms, behaviors of the dominant culture (Boston University Teaching Writing, 2021, para. 1) and soft skills that students need to succeed
Action & Expression	<p>UDL Guideline 4. Options for physical action</p> <ul style="list-style-type: none"> ● Consider when students may benefit from using digital tools and assistive tools (e.g., text to speech, speech to text) <p>UDL Guideline 5. Options for expression and communication</p> <ul style="list-style-type: none"> ● Give students options for how to articulate their ideas and hopes for their WIL experiences. ● Provide options for communication formats during the WIL experience.

- Provide options for professional and critical reflection formats to honor varied preference.
- UDL Guideline 6. Options for executive functions
- Support students with goal setting and planning for WIL experiences.
 - Support students with strategy development to make the most of their experiences.
 - Provide guidance to help students monitor progress during the WIL experience.
-

APPLYING UDL FOR WIL DESIGN

Because WIL experiences are individualized and specific to the student's program or course of study, the UDL-aligned practices can be an intentional and interactive planning process. UDL for WIL includes four stages of a typical WIL experience: 1. design, 2. pre-placement, 3. during placement, and 4. post-placement (organized by stages of WIL identified by Billett, 2015; Campbell et al., 2019). These phases apply to the designer of the WIL program or experiences which is led by Faculty at the university. There is opportunity to engage students and industry/community partners in each stage of this design process to ensure multiple perspectives are heard and the program meets the needs of all stakeholders.

Stage 1: Design Phase

UDL for WIL design practices: Establish shared values around inclusion and equity

This first phase focuses on designing the context for WIL in degree programs. In this phase, it is essential to involve all the stakeholders (faculty, students, and industry/community partners) and establish the value of inclusion and equity in this context. Stakeholders typically need to discuss and constructively align learning outcomes, assessments and activities (Benson & Hooton, 2014; Campbell et al., 2019; Carmody et al., 2020). In addition, stakeholders should discuss and articulate values around inclusion and equity in order to establish a shared understanding of why these are essential values and contexts to ensure success for all students (Agnew et al., 2017; Campbell et al., 2019; Keen & Eady, 2022). This may take different shapes depending on the teams/groups involved. Some teams may want to talk about and understand what student diversity is and what learner variability factors are typical for students who are from under-served or marginalized groups. Some teams may need to discuss the importance of proactive and meaningful inclusion, looking more deeply at what it means to embed supports that can help students persist and get the most from their WIL experiences. Faculty can refer to the UDL guidelines, especially those related to engagement, to consider ways to create relevant and authentic experiences (UDL Guideline 7), create safe and welcoming environments (UDL Guideline 7), foster persistence (UDL Guideline 8), and support self-regulation (UDL Guideline 9).

Stage 2: Pre-placement Phase

UDL for WIL design practices: Consider learner variability, reduce barriers, and integrate supports

The pre-placement phase involves specialized student preparation (based on student needs); clear accommodations process; supervisor training on cultural competence and diversity; supervisor training on inclusive assessment and feedback processes (Lee et al., 2021; Pham et al., 2018; Zegwaard & Rowe, 2019). In this phase, it is important to use the essentials of UDL-based design identified in the section above. Faculty members can begin by understanding the learner variability factors of specific individuals. This can be done by intentional efforts to incorporate student voice in the process.

Faculty can inquire into a student's needs, hopes, and desires for a WIL experience. Figure 1, Learner variability, highlights some areas that faculty can ask their students about: strengths/abilities, backgrounds/experiences, preferences/interests, and support needs. It is important to create a safe and welcoming space for this interaction. Some students may not be comfortable sharing openly about themselves and faculty should establish how they can solicit this information in ways that are comfortable for the student. For example, some students may prefer to have a one-on-one conversation while others may prefer responding to questions in writing (e.g., via email or on a document) or through a video/audio recording. It is useful to give students options and also make it clear that they are free to make choices about what to share and which questions to answer.

After giving the student an opportunity to share the characteristics as they would like, the faculty member can consider where barriers may arise in the WIL environment or experience. Even before the actual experience may be determined, faculty can use their general knowledge of industry/community partners and possible scenarios to anticipate barriers. Then, with the knowledge of the student that they have gained, the faculty mentor can reflect on the challenges that may arise. Concurrently, faculty members can consider where a students' strengths/abilities, backgrounds/experiences and preferences/interests can be addressed in the design of the WIL experience. Faculty members can have a conversation with the student to discuss these considerations and make determinations together of how to craft an experience that reduces barriers and leverages on the students' assets and abilities. The UDL guidelines can be used as a framework to discuss a plan of action, considering where and how the WIL experience can be made relevant, supportive, and engaging for the student. It can be useful to document this plan of action co-created by the student and faculty. The university partner can communicate the plan to the industry/community partner and encourage the student to discuss aspects directly with their placement supervisor. It is essential to ascertain what the student is willing to share with the industry/community partners and give students space to keep aspects confidential if preferred.

Stage 3: During Placement

UDL for WIL design practices: Provide structures for reflection and interaction

Once students are in their WIL placements, faculty can set up structures to communicate, reflect, and discuss what is working well and what challenges arise. By proactively creating opportunities for connection and communication, faculty can proactively support students and provide professional guidance during the WIL placement. Faculty can develop structures for communication such as periodic check-ins (one-to-one or in small groups or cohorts), being clear that students can reach out for advice when faced with challenges and providing opportunities to reflect on key issues through seminars led by students who have had prior WIL experiences, industry/community partners, or community members. Faculty can develop communities of practice (Lave & Wenger, 1991) that enable guided reflection; these can be seminars in which students discuss their experiences together, guided by faculty members. These structures can be kept flexible and nimble, for example, seminars held online and of short durations, to make them less of a burden on already busy student schedules. By providing supports proactively in these ways, faculty can create a safe space for students to reach out and process issues and challenge and devise solutions that can optimize their experience during their placements. These structures provide ways to integrate formative assessments in inclusive and supportive ways during the placement. Using these practices, students also gain invaluable skills, such as negotiation, communication and self-advocacy, that they can use once they graduate and approach future employment scenarios.

*Stage 4: Post-placement**UDL for WIL design practices: Use inclusive reflection and assessment strategies*

After the student has completed the placement, faculty can provide students with opportunities to reflect on the entirety of the WIL experience (summative assessment) and identify takeaways and learnings that can be applied to students' future work experiences. Extending on the methods recommended in the during placement phase above, inclusive reflective practices can be used. For example, students should have choices of ways to express themselves. Some students may not feel comfortable sharing negative or challenging experiences, so providing varied ways for students to reflect and communicate can be helpful. Some students may be comfortable sharing in writing anonymously while others may be okay with sharing with their advisors. It is also important to leverage on student's own interests and engagement, discussing with them how they can learn from their WIL experiences to shape future job experiences.

FUTURE DIRECTIONS OF UNIVERSAL DESIGN IN WORK-INTEGRATED LEARNING

Underpinning the UDL for WIL process is a need for educators and industry/community partners to recognize the many ways in which student diversity may present itself, and to value that diversity in ways that broadens existing notions of employability, professional development and professionalism. This builds on previous research (e.g., Harvey et al., 2017) that calls for expanding on these notions to account for equity in WIL. This can happen through reconsideration of how higher education-industry/community partners are developed, investing in and incentivizing models of WIL that are inclusive of all students.

This paper has presented a framework and strategies for UDL for WIL curriculum design. It has outlined strategies and examples across four stages of: design, pre-placement, placement, and post-placement. This is not an exhaustive list and educators are encouraged to use these as prompts for further reflection. While the model outlined in this paper features numerous strengths and benefits, several limitations may arise. These limitations could include faculty member's time to plan and design curricular resources, faculty support for implementing new ideas, and time to learn and apply the principles themselves. However, with this upfront investment, the implementation of UDL for WIL will benefit students and provide a solid platform for iterative improvement over time.

The need for reflexivity and intentionality at each stage of the WIL design process is supported through the consideration of UDL strategies. Educators who incorporate WIL and liaise with industry/community partners can use these strategies to explore constructs that inform modern WIL design and consider how these can be expanded for more inclusive WIL experiences. The strategies in this paper focus on placement-based WIL, however the principles and many of the strategies are also applicable to non-placement WIL experiences.

Reconsidering WIL design practices can be more resource intensive as new design approaches are explored by institutions and educators whose resources are already limited (Dean et al., 2023). Practical guidelines, frameworks and training for inclusive WIL design should be offered to support those implementing UDL for WIL. Communities of practice of educators invested in inclusive WIL can also be established to offer peer knowledge and support.

CONCLUSION

Ensuring that WIL experiences are inclusive of all learners is critical. It comes at a time when there is increasing pressure on institutions of higher education to produce employment-ready graduates from student cohorts that are more diverse, by many measures, when compared to previous generations. However, much of the discourse around WIL has focused on increasing access with little consideration afforded to inclusion once students are enrolled to participate in the WIL experience. Inclusive WIL activities allow students equitable opportunities to experience success and increase self-efficacy, regardless of the obstacles and barriers that they may face.

The conceptual and practical considerations for designing inclusive WIL, using established principles and strategies of Universal Design for Learning, in this paper, are intended to engage WIL educators in a conversation that expands currently held ideals of WIL and employability. Future research must explore pragmatic implications and student perceptions of participating in a course designed for inclusivity. This is a growing area of interest and research in the field of WIL that requires urgent attention. There is a need to explore and understand experiences of diverse cohorts of learners embarking on WIL experiences if WIL is to deliver on its promise of creating pathways to meaningful employment for all students.

REFERENCES

- Agnew, D., Pill, S., & Orrell, J. (2017). Applying a conceptual model in sport sector work-integrated learning contexts. *Asia-Pacific Journal of Cooperative Education*, 18(3), 185-198.
- Bell, A., Bartimote, K., Mercer-Mapstone, L., Moran, G., Tohnloli, J., & Dempsey, N. (2021). *Exploring benefits and challenges of online work integrated learning for equity students*. National Centre for Student Equity in Higher Education. <https://www.ncsehe.edu.au/publications/online-work-integrated-learning-equity-students/>
- Benson, F., & Hooton, K. (2014). A decade of evolution in the practice teaching component of a Canadian teacher education program: What drove change, what insights were gleaned and what challenges lie ahead. *Global Education Review*, 1(3), 7-62.
- Billett, S. (2015). Pedagogic practices supporting the integration of experiences. In S. Billett (Ed.), *Integrating practice-based experiences into higher education* (pp. 195-223). Springer.
- Boston University Teaching Writing. (2021). *Teaching the hidden curriculum*. Boston University. <https://www.bu.edu/teaching-writing/resources/teaching-the-hidden-curriculum/>
- Bracken, S., & Novak, K. (2019). *Transforming higher education through universal design for learning: An international perspective*. Routledge.
- Campbell, M., Russell, L., McAllister, L., Smith, L., Tunny, R., Thomson, K., & Barrett, M. (2019). *A framework to support assurance of institution-wide quality in work integrated learning*. Australian Collaborative Education Network. <https://research.qut.edu.au/wilquality/wp-content/uploads/sites/261/2019/12/FINAL-FRAMEWORK-DEC-2019.pdf>
- Carmody, C., Duffy, S., Brown, L., & Del Fabbro, L. (2020). Preparing for work-integrated learning during COVID-19: How a new virtual orientation tool facilitated access for all. *International Journal of Work-Integrated Learning*, 21(5), 545-557.
- CAST. (2018). *Universal design for learning: Guidelines version 2.2*. <https://udlguidelines.cast.org/>
- Claeys-Kulik, A.-L., Jørgensen, T. E., & Stöber, H. (2019). *Diversity, equity and inclusion in European higher education institutions*. European University Association.
- Crawford, N. (2022). *Equity in higher education: What does this term mean and what are the practical implications? Guide for staff*. National Centre for Student Equity in Higher Education, Curtin University.
- Dean, B. A., Eady, M. J., & Yanamandram, V. (2020). Advancing non-placement work-integrated learning across the degree. *Journal of University Teaching & Learning Practice*, 17(4), 1-6. <https://ro.uow.edu.au/jutlp/vol17/iss4/1/>
- Dean, B. A., Mundy, T., Price, O., Kennedy, M., Wheeler, G., Sheridan, L., & Iskra, L. (2023). Resourcing and recognition: Academics' perceptions of challenges experienced embedding work-integrated learning in the curriculum. *International Journal of Work Integrated Learning*, 24(1), 141-156.
- Dollinger, M., Finneran, R., & Ajjawi, R. (2023). Exploring the experiences of students with disabilities in work-integrated learning. *Journal of Higher Education Policy and Management*, 45(1), 3-18. <https://doi.org/10.1080/1360080X.2022.2129317>
- Felton, K., & Harrison, G. (2017). Supporting inclusive practicum experiences for international students across the social sciences: Building industry capacity. *Higher Education Research & Development*, 36(1), 88-101. <https://doi.org/10.1080/07294360.2016.1170766>

- Gidley, J. M., Hampson, G. P., Wheeler, L., & Bereded-Samuel, E. (2010). From access to success: An integrated approach to quality higher education informed by social inclusion theory and practice. *Higher Education Policy*, 23, 123-147.
- 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. https://www.ncsehe.edu.au/wp-content/uploads/2017/07/GrantSmith_WIL.pdf
- Gribble, G., & McRae, N. (2017). Creating a climate for global WIL: Barriers to participation and strategies for enhancing international students' involvement in WIL in Canada and Australia. In G. Barton & K. Hartwig (Eds.), *Professional learning in the work place for international students: Exploring theory and practice* (pp. 35-55). Springer. https://doi.org/10.1007/978-3-319-60058-1_3
- Harvey, A., Andrewartha, L., Edwards, D., Clarke, J., & Reyes, K. (2017). *Student equity and employability in higher education*. Centre for Higher Education Equity and Diversity Research, La Trobe University.
- Hosein, A., Balloo, K., Byrom, N., & Essau, C. A. (2023). The role of the university environment in shaping education and employment inequalities. *Journal of Higher Education Policy and Management*, 42(2), 223-242. <https://doi.org/10.1080/1360080X.2023.2180170>
- Hoskyn, K., Eady, M., Caocchiano, H., Lucas, P., Rae, S., Trede, F., & Yuen, L. (2020). GoodWIL placements: How COVID-19 shifts the conversation about unpaid placements. *International Journal of Work-Integrated Learning*, 21(4), 439-450.
- Itano-Boase, M., Wijesingha, R., Cukier, W., Latif, R., & Hon, H. (2021). Exploring diversity and inclusion in work-integrated learning: An ecological model approach. *International Journal of Work Integrated Learning*, 22(3), 253-269.
- Jackson, D., & Dean, B. A. (2022). The contribution of different types of work integrated learning to graduate employability. *Higher Education Research & Development*, 42(1), 93-110. <https://doi.org/10.1080/07294360.2022.2048638>
- Jackson, D., Dean, B. A., & Eady, M. J. (2023). Equity and inclusion in work-integrated learning: Participation and outcomes for diverse student groups. *Educational Review*. <https://doi.org/10.1080/00131911.2023.2182764>
- Keen, J., & Eady, M. J. (2022). Amplifying Indigenous student voice in work-integrated learning. *International Journal of Work Integrated Learning*, 23(2), 219-235.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.
- Lee, D.-C. A., Newton, F., Yu, M.-L., Morphet, J., Kidman, G., Maloney, S., Grieve, A., Shlonsky, A., & Haines, T. P. (2021). Supervisors' experiences in supervising higher education students from culturally and linguistically diverse backgrounds during work-integrated learning of health and non-health courses. *Higher Education*, 81(4), 665-683. <https://doi.org/10.1007/s10734-020-00567-6>
- Li, I. W., Jackson, D., & Carroll, D. R. (2023). Influence of equity group status and entry pathway on academic outcomes in higher education. *Journal of Higher Education Policy and Management*, <https://doi.org/10.1080/1360080X.2023.2180163>
- Lloyd, N., Paull, M., Clerke, T., & Male, S. (2019). *Access, quality and wellbeing in engineering work-integrated learning placements: Implications for equity and diversity*. http://www.ncsehe.edu.au/wp-content/uploads/2019/12/Lloyd_UTS_FINAL.pdf
- Mein, E. L. (2018). *Asset-based teaching and learning with diverse learners in postsecondary settings*. Departmental Technical Reports (CS). https://scholarworks.utep.edu/cs_techrep/1271
- Meyer, A., & Rose, D. H. (2005). The future is in the margins: The role of technology and disability in educational reform. In D. H. Rose, A. Meyer & C. Hitchcock (Eds.), *The universally designed classroom: Accessible curriculum and digital technologies* (pp. 13-35). Harvard Education Press.
- Meyer, A., Rose, D. H., & Gordon, D. T. (2014). *Universal design for learning: Theory and practice*. CAST Publishing.
- O'Shea, H. (1986). Achieving wider access to tertiary education. *Journal of Tertiary Education Administration*, 8(1), 59-68. <https://doi.org/10.1080/0157603860080105>
- O'Shea, S. (2020). Crossing boundaries: Rethinking the ways that first-in-family students navigate 'barriers' to higher education. *British Journal of Sociology of Education*, 41(1), 95-110. <https://doi.org/10.1080/01425692.2019.1668746>
- O'Shea, S., Koshy, P., & Drane, C. (2021). The implications of COVID-19 for student equity in Australian higher education. *Journal of Higher Education Policy and Management*, 43(6), 576-591. <https://doi.org/10.1080/1360080X.2021.1933305>
- Peach, D., Moore, K., Campbell, M., Winchester-Seeto, T., Ferns, S., Mackaway, J., & Groundwater, L. (2016). *Building institutional capacity to enhance access participation and progression in WIL :Final report*. Australian Government Office for Teaching and Learning.
- Pham, T. S., Eisuke, B. D., & Chowdhury, R. (2018). Employability of international students: Strategies to enhance their experience on work-integrated learning (WIL) programs. *Journal of Teaching and Learning for Graduate Employability*, 9(1), 62-83.
- Rao, K. (2019). Instructional design with UDL: Addressing learner variability in college courses. In S. Bracken & K. Novak (Eds.), *Transforming higher education through universal design for learning: An international perspective* (pp. 116-130). Routledge.
- Rao, K. (2021). Inclusive instructional design: Applying UDL to online learning. *Journal of Applied Instructional Design*, 10(1), 83-95. https://edtechbooks.org/jaid_10_1/preparing_teachers_f
- Rao, K., Gravel, J. W., Rose, D. H., & Tucker-Smith, T. N. (2023). Universal design for learning in its 3rd decade: A focus on equity, inclusion, and design. In R. J. Tierney, F. Rizvi, & K. Erkican (Eds.), *International encyclopedia of education* (4th ed., pp. 712-720). Elsevier. <https://dx.doi.org/10.1016/B978-0-12-818630-5.14079-5>

- Rao, K., & Meo, G. (2016). Using universal design for learning to design standards-based lessons. *SAGE Open*, 6(4).
<https://doi.org/10.1177/2158244016680688>
- Rose, D., Gravel, J., & Tucker-Smith, N. (2021). *Cracks in the foundation: Personal reflections on the past and future of the UDL guidelines*. CAST. www.cast.org/binaries/content/assets/common/news/cracks-foundation-whitepaper-20211029-a11y.pdf
- Tavares, O., Sá, C., Sin, C., & Amaral, A. (2022). *Equity policies in global higher education: Reducing inequality and increasing participation and attainment*. Springer Nature. <https://link.springer.com/book/10.1007/978-3-030-69691-7>
- Tobin, T., & Behling, K. (2018). *Reach everyone, teach everyone: Universal design for learning in higher education*. West Virginia University Press.
- Toronto Metropolitan University. (2021). *Standing strong task force report and recommendations*.
https://www.torontomu.ca/content/dam/next-chapter/Report/SSTF-report-and-recommendations-Aug_24_FINAL.pdf
- Torres, C., & Rao, K. (2019). *UDL for language learners*. CAST Publishing. <https://publishing.cast.org/catalog/books-products/udl-language-learners-torres-rao>
- University of Wollongong. (2022). *Reconciliation action plan*.
<https://documents.uow.edu.au/content/groups/public/@web/documents/doc/uow259418.pdf>
- Valencia-Forrester, F., Carol-Joy, P., Webb, F., & Backhaus, B. (2019). Practical aspects of service learning make work-integrated learning wise practice for inclusive education in Australia. *International Journal of Work-Integrated Learning*, 20(1), 31-42.
- Waitoller, F. R., & King Thorius, K. A. (2016). Cross-pollinating culturally sustaining pedagogy and universal design for learning: Toward an inclusive pedagogy that accounts for dis/ability. *Harvard Educational Review*, 86(3), 366-389.
<http://dx.doi.org/10.17763/1943-5045-86.3.366>
- Zegwaard, K. E., & Rowe, A. D. (2019). Research-informed curriculum and advancing innovative practices in work-integrated learning. *International Journal of Work-Integrated Learning*, 20(4), 323-334.

APPENDIX A: Universal design for learning guidelines graphic organizer.



Note. From *UDL for Language Learners* (appendix), by C. Torres and K. Rao, 2019, CAST Publishing (<https://publishing.cast.org/catalog/books-products/udl-language-learners-torres-rao>). Copyright 2024 by CAST, Inc. Used with permission.



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, and receives periodic sponsorship from the Australian Collaborative Education Network (ACEN), University of Waterloo, and the World Association of Cooperative Education (WACE).

Types of Manuscripts Sought by the Journal

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

*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.



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

Assoc. Prof. Bonnie Dean

University of Wollongong, 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

REVIEW BOARD

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

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

Prof. Dawn Bennett, Curtin University, Australia

Dr. Leoni Russell, RMIT, Australia

Mr. Matthew Campbell, University of Queensland, Australia

Dr. Jen Ruskin, Macquarie University, Australia

Prof. Leigh Deves, Charles Darwin University, Australia

Dr. Andrea Sator, Simon Fraser University, Canada

Assoc. Prof. Michelle Eady, University of Wollongong, Australia

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

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

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

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

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

Dr. Nigel Gribble, Curtin University, Australia

Dr. Raymond Smith, Griffith University, Australia

Dr. Thomas Groenewald, University of South Africa, South Africa

Prof. Sally Smith, Edinburgh Napier University, United Kingdom

Dr. Lynette Hodges, Massey University, New Zealand

Prof. Roger Strasser, Simon Fraser University, Canada

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

Prof. Yasushi Tanaka, Kyoto Sangyo University, Japan

Dr. Nancy Johnston, Simon Fraser University, Canada

Prof. Neil Taylor, University of New England, Australia

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

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

Dr. Jaqueline Mackaway, Macquarie University, Australia

Dr. Thai Vu, Curtin University, Australia

Prof. Andy Martin, Massey University, New Zealand

Ms. Genevieve Watson, Elysium Associates Pty, Australia

Dr. Norah McRae, University of Waterloo, Canada

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

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

Dr. Karen Young, Deakin University, Australia

Dr. Laura Rook, University of Wollongong, Australia

Publisher: Work-Integrated Learning New Zealand (WILNZ)

www.wilnz.nz

Copyright: CC BY 4.0