A toolkit to enhance work-integrated learning coordinators' understanding of practical problems

MARIA SPANTE
University West, Trollhätten, Sweden
JAMES GARRAWAY[1]
CHRISTINE WINBERG
Cape Peninsula University of Technology, Cape Town, South Africa
FUNDISWA NOFEMELA
THULILE PRINCESS DUMA
Mangosuthu University of Technology, Durban, South Africa

This study is located in the area of university work-integrated learning (WIL) management, in particular the implementation of both placement and non-placement WIL. The focus of the study is on enhancing WIL coordinators' understanding of WIL as a system, using activity theory as a framework, and to mobilize this understanding to address challenges in practice. To this end WIL coordinators at two South African universities attended WIL challenge workshops in which an activity system-derived diagnostic toolkit was introduced. The verbal discussions and diagrams presented by the coordinators were analyzed for evidence of systematic understanding of WIL, challenges and future possibilities. Findings from the study revealed that WIL coordinators successfully used the toolkit to identify system-level constraints and were inspired to engage in further investigations. The authors thus argue that the diagnostic toolkit could be used with WIL coordinators at other universities as a useful approach to understanding and optimizing their WIL practices.

Keywords: Work-integrated learning challenges, activity theory, systematic analysis

This article reports on the use of a theoretical tool, developed from activity theory, to assist work-integrated learning (WIL) coordinators in gaining a systematic understanding of challenges they encounter in practice. Approaching issues in this way is important as institutions may tend to assign blame to individuals, rather than engaging in more in-depth analysis. As Mohaghegh and Furlan (2020, p. 1048) argue, in an analysis of organizational problem-solving approaches: "the tendency of managers to blame employees for their mistakes creates a context where employees, instead of exposing their problems, find immediate solutions or quick workarounds that mask the underlying system weaknesses."

This research was conducted in WIL challenge workshops in which participants, the WIL coordinators, were tasked with raising challenges they encountered in their practices. In order to do this the WIL coordinators were asked, firstly, to identify why they are working in WIL and how they are performing their tasks related to WIL. They were then asked to identify who else was involved in WIL and what their roles were and what rules were in place that influenced how the work could be done. Thereafter they were asked to position their challenges within the system and share their understandings with colleagues. Raising challenges in this way constituted what the authors have referred to as a 'diagnostic toolkit,' derived from activity theory's depiction of practice as an activity system as shown in Figure 1. The use of an activity system-derived diagnostic toolkit has been used before in organizational studies. For example, Dinh and Sannino (2024) used a diagnostic toolkit to highlight teachers' working difficulties, and to chart the beginnings of possible new ways forward. However, in Dinh and Sannino's

[1] Corresponding author: James Garraway, garrawayj@cput.ac.za

2024 study, the toolkit was used by the researchers to analyze research data rather than as an enabling tool for practitioners to raise their own difficulties, as was the case in this study.

Challenges in implementing WIL have been outlined by authors such as Jackson, Rowbottom et al. (2017) and Asplund and Flening (2022), as well as other authors as discussed below. However, as far as the authors are aware, there is no literature reporting on the use of a diagnostic toolkit to enable practitioners to raise and discuss such challenges.

Defining Work-Integrated Learning

WIL constitutes a number of key elements identified in the WIL literature (Zegwaard et al., 2023). WIL must involve the participation of external stakeholders, even where it does not involve physical placement at work (e.g., such as described by Asplund & Flening, 2022). The role of the partners is to provide students with relevant, up-to-date and authentic learning experiences, and to contribute to evaluating tasks performed by students (e.g., McNamara, 2013). Furthermore, WIL should be embedded in curriculum and integrated with the content and outcomes of disciplines. In a sense WIL should act as a bridging device (Asplund & Flening, 2022) between the aims of the curriculum and the future career of the student. In providing this link, WIL should ideally be understood as a meaningful exercise by students. Being integrated within the curriculum requires that WIL is assessed, ideally by both the workplace representatives and university staff (McNamara, 2013). In summary WIL is an educational approach constituted by a three-way relationship between workplaces, educational institutions and students, in which students engage in authentic and meaningful tasks relevant to their field of study (Zegwaard et al., 2023).

In accordance with this definition WIL can be enacted in different forms, for example as a work placement, as some form of community outreach/service learning or as a work/community relevant project conducted within the university (Scholtz & Bester, 2018). These different forms of WIL can be broadly classified as placement or non-placement types. Authentic co-designed projects between universities and workplaces may be more suitable for smaller workplaces that lack the resources to adequately supervise students on placement and support learning (Jackson, Rowbottom et al., 2017). Furthermore, some forms of work exposure such as shadowing (observing) in the workplace or site visits, extracurricular work experience, and a case study teaching approach do not constitute WIL (Zegwaard et al., 2023). Kaider et al. (2017) have developed a useful classification for WIL using the dimensions of authenticity and proximity. Placements are high in proximity and authenticity whereas work-designed projects conducted at university score lower on proximity but high on authenticity. Learning experiences such as site visits are high in proximity but do not constitute an authentic learning experience, so are excluded from the WIL definition.

WIL has been shown to benefit students' employability prospects, technical and social skills, sense of well-being and self-empowerment (Cullen, 2007; Zegwaard et al., 2023). Through promoting partnerships between the university and workplaces it can also provide the university with up-to-date information on current work practices which can enrich the curriculum. Jackson, Rowbottom et al. (2017) highlight the affordance of WIL for students' work readiness but also for its potential benefits for the economy through improving employability skills of new entrants to the workplace and subsequently strengthening workforce productivity. Placements may also provide a useful means for employers to assess the suitability of students as future employees. In many disciplines (e.g., health education) WIL is a necessary component of the curriculum so students can be accredited as professionals upon completion of the degree (Horstmanshof & Moore, 2016).

Challenges in Work-Integrated Learning Management

Although WIL is often seen as an important and necessary component of professional and technical education there are many challenges to its successful implementation in practice. As Eames and Coll (2010) point out, WIL involves learning activities that involve collaboration between two distinct but necessarily related forms of organization, the university and the workplace. Asplund and Flening (2022) suggest that universities and workplaces focus on different forms of practice; universities focus on the academic aspects of learning whereas workplaces may focus on learning appropriate skills to best perform practical tasks. This creates a problem for knowledge transfer across the university-workplace divide where workplace knowledge often has a tacit or procedural nature, as opposed to the more theoretically oriented knowledge of the curriculum (Eraut, 2004).

It may, in addition, be difficult for workplaces to identify suitable projects which could benefit both student learning and workplace needs, and students are likely to need supervision and mentoring in internships or in undertaking work-oriented projects (Jackson, Rowbottom et al., 2017). Furthermore, workplaces may lack the resources to effectively supervise and assess students and may not grasp the purpose of WIL or appreciate the different types of WIL available. University and workplace calendars may not be adequately synchronized, leading to additional problems with placement and assessment (Jackson, Ferns et al., 2017). Problems may arise in coordinating activities between universities and workplaces, matching curriculum to a variability of work practices, and ensuring that students benefit from their learning experiences (Billett, 2009). The issue of assessment for validating competence may then arise, as assessment should not be based on an isolated university assessment task, but rather on a combination of student self-assessment, and supervisor and university evaluations. However, students may find accurate self-reporting difficult and supervisor assessments may lack reliability (McNamara, 2013). Thus, there is a need for improved collaboration and articulation between universities and work 'hosts' (Jackson, Ferns et al., 2017; Roth, 2010).

Effective WIL may be hampered by time and workload constraints of both academics and employers (Clark et al., 2016). Lawson et al. (2011) and Rook (2017) highlight that WIL programs are resource-intensive but often lack adequate resource provision, including funding. There is also little recognition of the type and complexity of work required from university WIL coordinators. WIL may be seen by university management as a 'low priority' when compared to other university missions such as conducting research and classroom teaching (Rook, 2017). Problems arising with WIL in specific fields as diverse as radiography (du Plessis & Bezuidenhout, 2019) and business studies (Abeysekera, 2006; Oliver, 2015; Rook, 2017) are also highlighted in the literature.

In addition to the above constraints to WIL, workplaces are also changing due to pressures of globalization, digitalization and automation. These pressures have contributed to creating an environment of uncertainty as to the dynamic of future workplaces that universities should prepare students for and the capabilities students will require (Winberg et al., 2022).

The onset of the COVID pandemic in 2020 had major implications for WIL practices. During the pandemic there was a substantial and necessary switch to non-placement types of WIL (Zegwaard et al., 2020). However, Dean et al. (2020) suggest that the pandemic provided a stimulus for the developmental expansion of non-placement WIL, such as authentic project-based learning and simulations, which the authors predict will continue to feature in the future. However, implementing project-based learning is not without its challenges. Scholtz and Bester (2018) report that that industry may be unfamiliar with this form of WIL, and unsure of how they may assist, or be unwilling to do so.

In addition, project-based WIL may require more intensive support from the WIL coordinator than in the more traditional WIL types. Asplund and Flening (2022), furthermore, suggest that some students may struggle with the high level of investigation, reporting and collaboration with industry required in project work.

Although WIL is understood to have beneficial outcomes, university WIL coordinators may experience problems in its implementation. Therefore, in this research the authors developed a diagnostic toolkit which was used in WIL challenge workshops to assist the coordinators in highlighting their WIL difficulties and generating ideas to address challenges for the future implementation of WIL.

The research questions addressed in this research were thus:

1. Did the diagnostic toolkit used during the WIL challenge workshops stimulate participants to raise issues and gain a systematic understanding of practical problems with WIL?
2. Did the use of the toolkit promote the initial generation of new ideas and/or a will to pursue challenges further?

ACTIVITY THEORY AS THE THEORETICAL LENS FOR THE RESEARCH

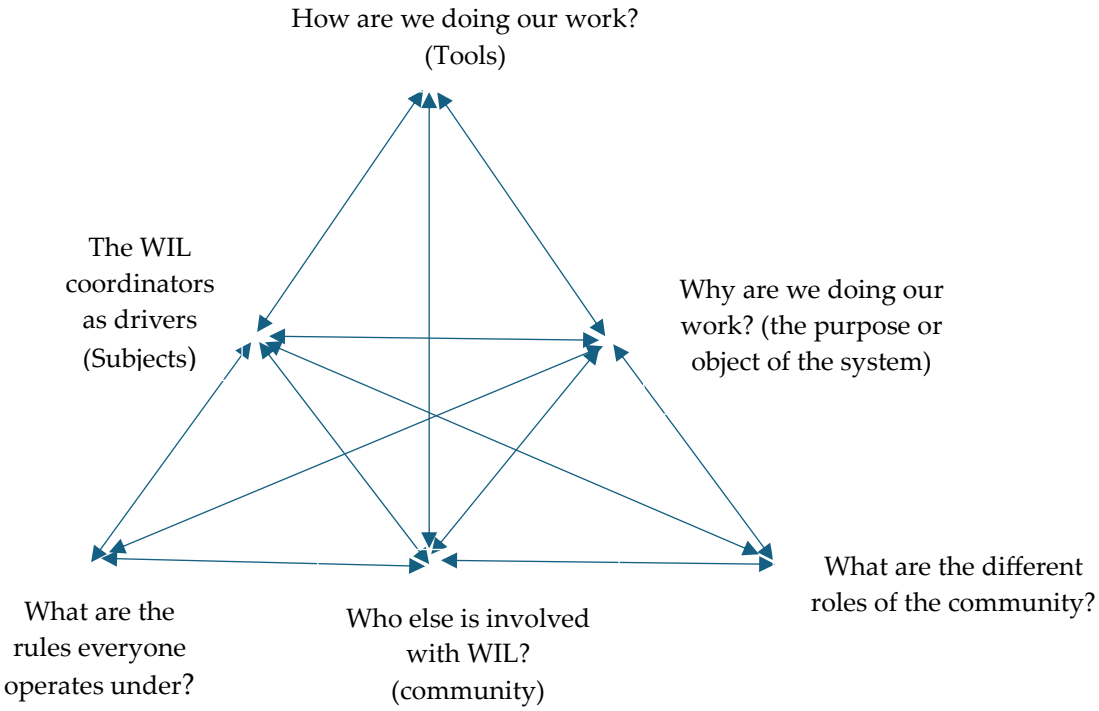
Activity theory utilizes a number of dimensions that can be used to describe human activities (Dinh & Sannino, 2024), as shown in diagrammatic form in Figure 1. Together these dimensions constitute an activity system. Firstly, there is the 'object' of the activity. This was referred to as 'why' the WIL coordinators believe they are carrying out the WIL activity. Identifying the object of the system (e.g., preparing students for the workplace) plays a key role in participants gaining understanding of their activity. The object, furthermore, motivates them to carry out their work (Foot, 2002). 'How' participants accomplish their work involves the use of whatever resources or tools are available to them. In the WIL system such resources may include adequate WIL funding, student access to suitable work practices during their work placement or other tools (Jackson, Rowbottom et al., 2017). Work on the object is thus always mediated (Engeström, 2001) through the WIL coordinators' access to these resources.

Participants' work on the object does not occur in isolation and involves influences from a number of stakeholders, or 'who else' is involved in the WIL activity. For example, WIL always involves university staff, students and workplace supervisors and their management structures. The system thus includes different members, with often diverse views of the purpose of WIL, who together make up the community of the activity (Engeström, 2001). Different community members also perform different roles in realizing the object of the system. The WIL system, furthermore, operates according to rules which influence the work of the WIL practitioners (Khampirat & McRae, 2016); for example, timetabling and assessment rules (McNamara, 2013), or particular workplace ways of operating, or accreditation requirements mandated by professional bodies.

In activity theory analysis, these components of the activity system are dynamic and in constant interaction with one another and are typically depicted as a triangular activity system as shown in Figure 1 (Engeström, 1999). The different voices within the system and the various demands put on university academics may lead to them experiencing contradictory pushes and pulls. For example, academic staff may often have burdensome WIL coordination duties alongside an already high teaching load (Bates, 2011). For Engeström (2001) these contradictory forces can result in either paralysis or an attempt by participants to think of new ideas to overcome the difficulty. Crucially, the development of new ideas is more likely to arise where the initial contradiction is understood

systematically, rather than as something that has arisen through the actions of the participants themselves (Engeström, 2001; Mohaghegh & Furlan, 2020).

FIGURE 1: An activity system (adapted from Engeström, 1999).



Note. Adapted from "Activity Theory and Individual and Social Transformation," by Y. Engeström, in Y. Engeström, R. Miettinen, & R. L. Punamäki (Eds.), *Perspectives on Activity Theory*, 1999, Cambridge University Press. Copyright by Cambridge University Press. Adapted with permission.

Engeström and Sannino (2011) have helpfully categorized these difficulties within the activity system as dilemmas, interpersonal conflicts, critical conflicts and double binds. Dilemmas and conflicts can be seen as more normal, slightly less serious difficulties than critical conflicts and double binds. Dilemmas are characterized by participants weighing up different options for practice whereas conflicts would involve disagreements or arguments about the right way of performing tasks. There would, furthermore, be an attempt to resolve these conflicts through reference to a higher authority, compromise or even submission.

For Engeström and Sannino (2011, p. 374), more severe difficulties encountered by participants are referred to as critical conflicts where individuals experience "inner doubts which paralyze them," that evoke feelings of "guilt or violation." Resolving such difficulties requires major rethinking of how one is engaging with tasks. Finally, double binds are those difficulties where the system imposes contradictory practices on practitioners which may build up over time and again result in a sense of paralysis from participants, and so an inability to resolve these difficulties. Such difficulties, if they are to be resolved, require substantial collective reformulation of the activity system.

In using the activity theory toolkit, it would thus be important to know about participants' understandings of the WIL activity object, and indications/manifestations of the main difficulties (e.g., conflicts, double binds) that may hamper their work.

BACKGROUND TO THE RESEARCH

In 2023 the authors, who were all involved in WIL at their universities as researchers or practitioners, applied for and received a South Africa-Sweden University Forum (SASUF) research grant to investigate WIL. The project was titled 'Collaborative, cross-border work-integrated learning practice research through an activity theory lens'. The project aim was to gain a collective understanding of the difficulties that universities experience in conducting WIL, and how such difficulties may be addressed and potentially overcome. It was hoped that the research would benefit student learning and contribute to their employability and ultimately enhance economic and social wellbeing. Furthermore, it was anticipated that the project could develop an approach or a model for WIL to accommodate changes in universities, workplaces, and in the broader society.

Challenge workshops were conducted in which WIL practitioners were tasked with highlighting difficulties in their work through utilizing the activity theory-inspired diagnostic toolkit. The first WIL challenge workshop was conducted at the South Africa Sweden University Forum (SASUF) conference in early 2023. The workshop was attended by South African and Swedish academics with an interest in addressing problems experienced with WIL. As SASUF encourages South African-Swedish innovative collaborations, this provided an ideal platform to test out the model of conducting WIL challenge workshops. In conducting the pilot, the researchers found that the participants were able to use the toolkit productively in order to highlight and understand their WIL challenges. Thus, based on the success of the pilot, it was decided to conduct similar workshops at specific university locations.

Ethics approval to conduct the research at the various sites was granted by the Fundani Research Ethics Committee (FREC) of the submitting author's institution, for the South African Sweden (SASUF) research project title: Work-integrated learning practice research through a Cultural-Historical Activity Theory lens (WIL-CHAT) for quality education, June 2023-June 2024, Reference Number: 0706/2023.

Following the pilot workshop, the researchers approached the WIL unit directors at two universities of technology, University A and University B in South Africa. The universities were selected as they are characterized by their historical closeness to workplaces and the community, and their focus on WIL as a component of most degree and diploma programs (Thobani & McKenna, 2020). Through discussions with the WIL unit directors, it was agreed that there was a need for some form of a WIL challenge raising session with the WIL faculty coordinators, which also had the potential for the emergence of fresh ideas that could contribute to reporting and future planning.

University A

University A is peri-urban situated on the outskirts of a city in South Africa. The university has adopted four WIL modalities, namely cooperative education work placement, service-learning, project-based learning and clinical practicum.

For work placement WIL, students are assigned workplaces for periods ranging from 3 months to one year. During this period, the students are supervised by a WIL coordinator to ensure that the experience is aligned to the required academic outcomes. WIL supervision is conducted in a staggered form, namely, virtual class meetings done through WhatsApp chats or Microsoft Teams; quarterly

reflections submitted electronically to the WIL coordinator, a physical visit to the workplace as well as the submission of a logbook. Students are required to attend a general work-readiness program.

The WIL coordinator is also responsible for marking the assessments as well as administering the marks for WIL. Over and above this work, the WIL coordinator has a teaching load and is required to conduct research as well as take part in community engagement as these are promotion imperatives for academics. In some cases, they are granted a reduced teaching load. For the clinical practicum in Environmental Health, the students are required to do 100 days of WIL over three years.

Traditionally, stipends paid to students during the WIL placement have been the responsibility of the host employer through training grants which the employers can claim from the government through the Sector Education and Training Authorities (SETAs). To further assist in the placement of students for WIL, the SETAs also offer grants to universities. Annually University A organizes WIL placements for an average of 1900 students with 25% of that cohort being paid from these grants.

University B

University B is an urban university within the boundaries of another South African city. It follows the same system of WIL types, duration and duties of the WIL coordinator as University A and also utilizes SETA funding to support some students during WIL. University B is over twice the size of University A, with commensurately larger numbers of WIL students.

Workshop Structure – Implementing the Toolkit

During each challenge workshop, WIL coordinators were tasked with envisioning their WIL work as an activity system through applying the diagnostic toolkit (Figure 1). In order to assist the coordinators, the facilitators first illustrated the triangular activity system and defined the different components thus: The coordinators as the drivers of the system or 'subjects'; why they are doing WIL work as the 'object' of the system; how they are doing their WIL work as the 'tools' they are using; who else is involved in WIL as the 'community'; the different responsibilities each community member plays as the 'roles'; and under what regulations the subjects and community members operate as the 'rules' of the system. Coordinators drew their own system for their department on newsprint, either individually or in pairs. For example, the coordinators would list the different rules and norms active in their unit under the 'rules' component, and so on. Thereafter, they identified where the main difficulties that were hampering their work lay on the triangular diagram, either within or between different activity system components.

Each participant/pair presented their activity system with the identified difficulties to the whole group for comment and discussion. It was hoped that participants would not only identify challenges but would also begin to gain collective understanding of them as systematic issues, that may stimulate participants to envisage new ways of working with WIL.

The structure of each challenge workshop was as follows:

1. Participants were given a brief overview of activity theory and were introduced to the activity system mode of analysis.
2. Each participant drew a triangular depiction of their WIL system and populated the activity system elements.
3. Participants identified two to three main challenges in their system and shared these with the group as a whole.

4. Participants collectively discussed the emerging challenges.
5. Participants reflected on using the diagnostic toolkit in the challenge workshops.

METHODOLOGY

Research Participants

Faculty or department WIL coordinators with an interest in improving WIL were invited to the half-day three-hour challenge workshops through the offices of the relevant institutional WIL directorates.

In University A seven WIL coordinators attended the workshops and in University B there were eight attendees. Although the coordinators were well versed in their WIL practices, none of them had prior knowledge of activity theory. Table 1 and 2 outline the disciplinary bases of each of the attendees and the type of WIL typically conducted within that discipline.

TABLE 1: Participants at University A.

Disciplinary base of WIL coordinator	**Type of WIL represented**
Agriculture	Industry placement
Electrical Engineering	Industry placement
Environmental Health	Workplace-based learning, clinical placement
Public Management	Project-based learning
Human Resources management	Project-based learning
Chemistry	Industry placement
Information technology	Industry placement

TABLE 2: Participants at University B.

Disciplinary base of WIL coordinator	**Type of WIL represented**
Analytical Chemistry	Industry placement and project-based learning
Mechanical Engineering (2)	Industry placement and emerging project-based learning
Hospitality	Industry placement
Biotechnology	Industry placement
Industrial and systems engineering	Industry placement
Clothing and Textile Technology	Industry placement
Environmental and Occupational health	Industry placement

Data Gathering and Analysis

Each university constituted a partially bounded, real-life system which in qualitative research can be referred to as a case study (Creswell & Poth, 2018). The research methodology was underpinned by activity theory's critical approach to understanding human activity within its specific social and cultural contexts through collaborative expansive learning. In line with this approach, the research design comprised a "collective case study" (Cousins, 2009) of challenges faced by WIL practitioners within university of technology contexts. As is typical in case study research, the researchers collected information from a variety of sources (Creswell & Poth, 2018) for example, data was gathered through audio recording and note taking of the events unfolding in the workshops, including participants' reflections on the process, and the practitioners' depictions of their WIL units as activity systems.

Data was analyzed deductively through using a coding frame (Dinh & Sannino, 2024) for evidence of the below trends. The trends were derived from the initial research questions and activity theory's theoretical focus on identifying difficulties as starting points for future developments:

- Were the WIL practitioners able to depict their WIL units as systematic, dynamic and object-orientated systems, that is, as activity systems?
- Were WIL practitioners able to identify challenges to their work as embedded within the system itself?
- Did WIL practitioners indicate the beginnings of new ideas to resolve challenges and/or the need for further investigative work?

The data presented below is drawn from the participants verbal discussions arising from their activity system presentations.

RESULTS FROM THE WORK-INTEGRATED LEARNING CHALLENGE WORKSHOPS

Case 1: University A

Participants described why they were doing WIL work or the object of their system as forwarding 'student employability,' 'developing students as practitioners' and 'developing work readiness.' Work on this object or how they were conducting their work was supported by the 'tools' of the knowledge and skills of the WIL coordinators and lecturers, student preparation courses, work mentors, WIL guides and so on. The 'community' or 'who else' involved in WIL, included work hosts, the university WIL unit staff and other university staff, advisory board members, and members of government and funding bodies, each with their different roles. For example, different hosts provided different and specific work experiences, and the university staff provided thought leadership in the structure and function of WIL. Rules in the WIL system included WIL policies from the university and work rules for specific workplaces.

However, in plenary discussion, participants also recognized that perhaps the object needed changing, as expressed in the examples which follow: "What we want to achieve is at odds with what is happening – the object is not working."

Working from their activity system analysis of the WIL system, a significant challenge was that WIL practitioners were pulled in opposite directions and often felt helpless or even paralyzed. The most prevalent challenge advanced was that the practitioners had to both coordinate WIL in their faculties and also execute their academic teaching and research duties. The WIL coordinators felt unable to perform both roles adequately, a form of double bind: "I need time to invest in WIL but I am a full-time academic and WIL coordinator."

Sometimes the role of the university and workplaces seemed confused. The university understood the workplace as developing student's workplace skills, but the workplace wanted 'oven-ready' students: "Are our students fit enough to work in (agricultural) industry … the farmers don't think so!"

And "Industry wants 'oven ready' students, but we cannot do this without them… it takes so much to convince them …"

Here staff were faced with the double bind of simply not being able to provide such skilled students before WIL placements, with work unwilling or unable to recognize this as their role.

A critical and moral conflict arose where workplaces were effectively substituting a trained workforce with students year on year, as they could pay them little and obtain government subsidy for WIL at the same time. This could be seen as a win-win situation for workplaces but one where students are not necessarily being afforded the required learning opportunities: "Students are used as pawns and may replace workers … industry gets a whack of SETA money (government subsidy)."

In terms of the potential of the workshops to promote further developments, that is, coming to understand the current situation and developing the will to move further to seek solutions, this was the strongest finding from the workshop. For example, in reflecting on the challenge workshop, the participants advanced the following opinions:

> It was like a crash course for WIL! We try to solve current problems (and) whether we have the correct object … I am no longer the same as before I came in.
>
> It helped us dig deeper into issues that still need addressing, even if we have spent the last eight years on this, and how problems will spread if we do not address them.
>
> We learnt from one another … the triangle identifies the 'oomphs' (problems) so we can come up with solutions, what connects together, what is not working. WIL is an active ship moving. Hearing from others and raising the 'oomphs' showed me there is lot to improve …

The above quotes also illustrate participants' reflections on the usefulness of the activity system analysis tool in identifying issues, the triangle, which was also accentuated as an enabling tool in other staff reflections: "The triangle shows there is lots that needs to be done. So it is very helpful, it made me realize things I was not aware of …"

Furthermore, in showing a willingness to move beyond the current situation, participants were asserting their ability and agency to work with challenges, rather than simply being helpless recipients of events.

Lastly, there was one suggestion that "we need more follow up workshops" on WIL challenges as a follow up to the challenge analysis workshop.

Case 2: University B

Participants were again able to depict an activity system of their WIL unit, and outline why they were doing WIL work, or what they believed the object to be. As with University A, there was a focus on preparation for work readiness in answer to the 'why' question, for example, the WIL coordinators suggested the object as being 'to match industry to workplaces' and student 'work readiness,' with the addition of 'adaptability and transferability' of knowledge and skills. Likewise, the 'how' things were done or tools, included work preparation courses conducted at the university, and the work of academics in delivering the curriculum. As with University A, rules included WIL guides and workplace host rules. The community included students, industry representatives, departmental lecturers, faculty management and government functionaries. The different members of the community were assigned similar roles to those in University A.

The most significant challenge in this university arose from a change in structure of the WIL component, from mostly having students in industry to having students conduct partially in-house projects derived from industries. The reasons for this are complex but stem from the universities' difficulties in securing and managing work placements. The university has thus encouraged departments to develop forms

of project-based WIL. Even though staff may wish to work with these sorts of projects they often lack the resources to do so, or at least to run them effectively: "We need space and we need funding for project materials because without that, it becomes largely a paperwork exercise, and the student doesn't gain enough out of it."

A further problem with project-based WIL is that industry should be involved with developing suitable WIL projects if the projects are to reflect authentic work experiences. However, even though the efficacy of the project design depends on industry involvement, industry was often unwilling or unable to do so: "But there is this critical role here of the company for providing something. But that stakeholder, the company, doesn't seem to be playing that role."

There was sometimes a sense of helplessness as staff felt stuck in their current ways of doing things, and unable to coordinate successfully with industry. In addition to the difficulties raised above, industry often wants students to start working in accordance with their financial year, but this is out of synch with the university calendar. There are very clearly 'dilemmas' and 'conflicts' staff are dealing with, in relation to industry and possibly with university management who have initiated changes to the structure of WIL. But there is also a sense of helplessness expressed by the coordinators (we need space and we need…) that raises their difficulties to the status of double binds. However, as with University A, there was also a sense of the possibility of breaking out of these difficulties (or ruts), and that there is a way forward through using the collective wisdom of the workshop participants. Participants also referred directly to gaining understanding of their problems through drawing activity system diagrams (It's on paper now).

> Sorry, I just wanted to ask whether it is all doom and gloom? Or is there hope? And by putting our minds together, can we get out of this certain small rut. It's on paper now, now we can start working from there. (Participant)

The collective initiative also holds a future possibility, that of working with industry on entrepreneurial projects, if staff can successfully free up time to do so. Here again, participants showed a will to move forward and that this can be accomplished through their own efforts:

> Yes, I think that's exactly the point of the workshop, it is to put it down on paper, to desegregate things and then to look for possible solutions jointly, and to suggest how we can learn from best practice and things like that. And to look for opportunities within our academics of where we can make significant changes, to bridge these gaps that exist, right? For example, asking for a different way of getting your timetable done. For example, freeing you up to work with industry on entrepreneurial projects … (Participant)

As with University A, there was interest in continuation of the project, as some form of research initiative with additional workshops in the future. "And we hope this is not going to be your last workshop with us. It will take us from here to greater heights in our thinking and open up various different ideas and possibilities for enriching our WIL game."

DISCUSSION

In both challenge workshops analyzed, participants were able apply the diagnostic toolkit to describe their WIL system as having an object of work readiness/employability and the tools to accomplish this as work preparedness programs and other university and industry input. Work on the object was further influenced by the rules of workplaces and universities, and the different roles played by, for

example, university, workplaces and even government. The diagnostic toolkit thus provided a framework for participants to gain an understanding of their WIL practices as an object-orientated activity system. Even though using the diagnostic toolkit was new to the participants, they easily and enthusiastically engaged with it and were able to use it to dig deeper, to desegregate things and look for opportunities. This was particularly the case where issues had been known for a number of years ('even if we have spent the last eight years on this') but had not been sufficiently dealt with. The collective nature of the workshops, and the importance of 'hearing from others' in order to gain understanding of difficulties was also raised.

During the workshops, participants were able to pinpoint where their collectively raised and shared practical difficulties were situated within the interacting elements of the activity system. Many of these challenges are already well documented in the literature. For example, practitioners' experiences of lack of time to work with students and lack of support from both the industry and from the university, have been outlined by Ha (2021). Other troubling issues such as WIL students substituting for regular workers have also been reported elsewhere (Mutereko & Wedekind, 2015), as has the issue of student readiness for work during WIL as oven-ready, that is, being fully prepared for work (Atkins, 1999). The move in some departments from placements to problem-based learning forms of WIL, and the challenges arising as a result, has also been reported on in the literature (Asplund & Flening, 2022; Scholtz & Bester, 2018).

The diagnostic toolkit is useful in its own right to stimulate discussion around WIL challenges. Even though some of the challenges of WIL raised within the workshops are evident in the contemporary literature, the important issue here was for participants to understand them as systematic issues within their own contexts. Participants clearly benefited from using the toolkit to gain such systematic insights into their own practices and concomitant problems, which goes some way to addressing the first research question: "Did the diagnostic toolkit conducted through the WIL challenge workshops stimulate participants to raise issues and gain a systematic understanding of practical problems with WIL?"

Some of the challenges raised by participants were experienced as double binds or critical challenges (Engeström & Sannino, 2011); for example, the lack of university/workplace coordination (Jackson, Ferns et al., 2017) and the low priority and resultant lack of resources afforded to WIL (Rook, 2017). Such major challenges have the potential to stimulate participants to embark on further, new developments (Engeström et al., 2013).

The WIL coordinators were able in part to raise some concepts in an attempt to resolve challenges, for example synchronizing timetables with workplaces and developing entrepreneurial project work where work placements were difficult to operationalize. Or, more generally, to identify 'oomphs' so that they may come up with solutions.

What was most striking for the researchers were the WIL coordinators' reflections on using the diagnostic toolkit in the challenge workshops. They all expressed interest in taking the process further. There was evidence of the beginnings of a will to and interest in further developments in order to explore new possibilities. For example, in reflecting on applying the toolkit in the workshops, WIL coordinators commented thus: "it showed me there is a lot to improve" (University A) and "we can get out of this rut" (University B.

Such evidence, including the emergence of some, though limited, new concepts, addresses the second research question: "Did the use of the toolkit promote the initial generation of new ideas and/or a will to pursue challenges further?"

In this research practitioners successfully utilized the activity system toolkit in order to understand problems they experienced within their WIL practices. However, researchers should be aware that practitioners need to be taught a new, systematic way of thinking (the activity system) before they can engage in challenge workshops. Further research is required in order to see if staff are able to mobilize their new-found understandings of problems in order to generate feasible and effective solutions. As Dinh and Sannino (2024) suggest, a first step would be for staff to identify how such problems have developed over time, so that particular causative factors may be highlighted and addressed.

CONCLUSIONS

WIL is a dynamic and evolving field of practice, and changes will confront WIL practitioners with new challenges alongside those they currently experience. As Zegwaard et al., (2023, p. 42) comment: "WIL continues to advance, the contexts where WIL is applied continue to develop, and local and international circumstances continue to change, so our understandings of what defines the practice of WIL may also evolve and adapt."

In this research participants developed a systematic understanding of challenges they experienced in their WIL practices and shared their understandings with one another; in some instances, suggesting how WIL practices can be taken forward, for example, by breaking out of a rut. Staff enthusiastically used the diagnostic toolkit and were able to generate productive outcomes. Thus, the authors suggest that the diagnostic toolkit could be used in WIL units in other universities as a useful approach to understanding and potentially optimizing their WIL projects, particularly in times of change.

The next stage for the researchers is to follow up the successful WIL challenge workshops with additional workshops in which challenges and initial new ideas raised may be further developed towards implementing improved practices, as has been done in other activity theory inspired diagnostic toolkit research (Dinh & Sannino, 2024).

ACKNOWLEDGEMENTS

The researchers wish to acknowledge the financial support of the National Research Foundation/South Africa-Sweden University Forum SASUF23041291642-PR-2023. The research project was first written as a technical report and was reported on at the 2024 WACE conference and in the conference proceedings. This article is substantially different from both these reports.

REFERENCES

Abeysekera, I. (2006). Issues relating to designing a work-integrated learning program in an undergraduate accounting degree program and its implications for the curriculum. *Asia-Pacific Journal of Cooperative Education, 7*(1), 7-15.

Asplund, F., & Flening, E. (2022). Boundary spanning at work placements: Challenges to overcome, and ways to learn in preparation for early career engineering. *European Journal of Engineering Education*, *47*(1), 50-69.

Atkins, M. J. (1999). Oven-ready and self-basting: Taking stock of employability skills. *Teaching in Higher Education*, *4*(2), 267-280.

Bates, M. (2011). Work-integrated learning workloads: The realities and responsibilities. *International Journal of Work-Integrated Learning*, *12*(2), 111-121.

Billett, S. (2009). Realising the educational worth of integrating work experiences in higher education. *Studies in Higher Education,* 34 (7), 827–843

Clark, L., Rowe, A., Cantori, A., Bilgin, A., & Mukuria, V. (2016). The power dynamics and politics of survey design: Measuring workload associated with teaching, administering and supporting work-integrated learning courses. *Studies in Higher Education*, *41*(6), 1055-1073.

Cousins, G. (2009). *Researching learning in higher education: An introduction to contemporary methods and approaches*. Routledge.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches*. Sage Publications.

Cullen, M. (2007). The role of cooperative education in developing environmental science skills. *International Journal of Work-Integrated Learning*, *8*(1), 37-52.

Dean, B. A., Eady, M., & Yanamandram, Y. (2020). Advancing non-placement work-integrated learning across the degree [Editorial]. *Journal of University Teaching & Learning Practice*, 17(4), Article 1. https://doi.org/10.53761/1.17.4.1

Dinh, H., & Sannino, A. (2024). Toward a diagnostic toolkit for intervention in teachers' agency during curriculum reform: Groundwork for a change laboratory in Vietnam. *Teaching and Teacher Education*, *140*, Article 104494.

du Plessis, J., & Bezuidenhout, J. (2019). Areas of good practice and areas for improvement in work-integrated learning for radiography training in South Africa. *African Journal of Health Professions*, *11*(3), 101-106. https://doi.org/10.7196/AJHPE.2019.v11i3.1043

Eames, C., & Coll, R. K. (2010). Cooperative education: Integrating classroom and workplace learning. In S. Billett (Ed.), *Learning through practice: Models, traditions, orientations and approaches* (pp. 180-196). Springer.

Engeström, Y. (1999). Activity theory and individual and social transformation. In Y. Engeström, R. Miettinen, & R. L. Punamäki (Eds.), *Perspectives on activity theory* (pp. 19-30). Cambridge University Press.

Engeström, Y. (2001). Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of Education and Work*, *14*(1), 133-156.

Engeström, Y., Rantavuori, J., & Kerosuo, H. (2013). Expansive learning in a library: Actions, cycles and deviations from instructional intentions. *Vocations and Learning*, *6*, pp.81-106.

Engeström, Y., & Sannino, A. (2011). Discursive manifestations of contradictions in organizational change efforts: A methodological framework. *Journal of Organizational Change Management*, *24*(3), 368-387.

Eraut, M. (2004). Transfer of knowledge between education and workplace settings. In A. Fuller, A. Munro & H. Rainbird (Eds.), *Workplace learning in context* (pp. 217-237). Routledge.

Foot, K. A. (2002). Pursuing an evolving object: A case study in object formation and identification. *Mind, Culture, and Activity*, *9*(2), 132-149.

Ha, N. T. N. (2021). The involvement of industry professionals and barriers to involvement in work-integrated learning: The case of the profession-oriented higher education framework in Vietnam. *Journal of Education and Work*, *35*(1), 92–107. https://doi.org/10.1080/13639080.2021.2018408

Horstmanshof, L., & Moore, K. (2016). Understanding the needs of all the stakeholders: Issues of training and preparation for health work students and their clinical educators. *Asia-Pacific Journal of Cooperative Education*, *17*(2), 93-100.

Jackson, D., Ferns, S., Rowbottom, D., & McLaren, D. (2017). Improving the work-integrated learning experience through a third-party advisory service. *International Journal of Training Research*, *15*(2), 160-178. https://doi.org/10.1080/14480220.2016.1259005

Jackson, D., Rowbottom, D., Ferns, S., & McLaren, D. (2017). Employer understanding of work-integrated learning and the challenges of engaging in work placement opportunities. *Studies in Continuing Education*, *39*(1), 35-51. https://doi.org/10.1080/0158037X.2016.1228624

Kaider, F., Hains-Wesson, R., & Young, K. (2017). Practical typology of authentic work-integrated learning activities and assessments. *Asia-Pacific Journal of Cooperative Education*, *18*(2), 153-165.

Khampirat, B., & McRae, N. (2016). Developing global standards framework and quality integrated models for cooperative and work-integrated education programs. *Asia-Pacific Journal of Cooperative Education*, *17*(4), 349-362.

Lawson, R., Fallshaw, E., Papadopoulos, T., Taylor, T., & Zanko, M. (2011). Professional learning in the business curriculum: Engaging industry, academics and students. *Asian Social Science*, 7(4), 61-68.

McNamara, J. (2013). The challenge of assessing professional competence in work integrated learning. *Assessment & Evaluation in Higher Education*, *38*(2), 183-197.

Mohaghegh, M., & Furlan, A. (2020). Systematic problem-solving and its antecedents: A synthesis of the literature. *Management Research Review*, *43*(9), 1033-1062.

Mutereko, S., & Wedekind, V. (2015). Work integrated learning for engineering qualifications: A spanner in the works? *Journal of Education and Work*, *29*(8), 902–921. https://doi.org/10.1080/13639080.2015.1102211

Oliver, B. (2015). Redefining graduate employability and work-integrated learning: Proposals for effective higher education in disrupted economies. *Journal of Teaching and Learning for Graduate Employability, 6*(1), 56-65.

Rook, L. (2017). Challenges implementing WIL in Human Resources management university courses. *Asia-Pacific Journal of Cooperative Education*, *18*(3), 99-212.

Roth, W. M. (2010). Learning in praxis, learning for praxis. In S. Billett (Ed.), *Learning through practice: Models, traditions and orientations* (pp.21-36). Springer.

Scholtz, D., & Bester, M. (2018). Project-based learning: Panacea for change or old wine in new bottles? *South African Journal of Higher Education*, *32*(6), 177-196.

Thobani, G., & McKenna, S. (2020). Reimagining academic identities in response to research demands at universities of technology. *Critical Studies in Teaching and Learning*, *8*(1), 96-110. https://www.ajol.info/index.php/cristal/article/view/200691

Winberg, C., Finn, F., Sheridan, I., Engel-Hills, P., Jacobs, H., & Kent, E. (2022). Enhancing work-integrated learning through South-North collaboration: A comparative contextual analysis. *International Journal of Work-Integrated Learning*, *23(4), 463-479*.

Zegwaard, K. E., Pretti, T. J., & Rowe, A. D. (2020). Responding to an international crisis: The adaptability of the practice of work-integrated learning. *International Journal of Work-Integrated Learning, 21*(4), 317-330.

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

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, entrepreneurships, 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