

An exploration of the pedagogies employed to integrate knowledge in work-integrated learning

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ABSTRACT

This article describes a three-sector, national research project that investigated the integration aspect of work-integrated learning (WIL). The context for this study is three sectors of New Zealand higher education: business and management, sport, and science and engineering, and a cohort of higher educational institutions that offer WIL/cooperative education in variety of ways. The aims of this study were to investigate the pedagogical approaches in WIL programs that are currently used by WIL practitioners in terms of learning, and the integration of academic-workplace learning. The research constituted a series of collective case studies, and there were two main data sources – interviews with three stakeholder groups (namely employers, students, and co-op practitioners), and analyses of relevant documentation (e.g., course/paper outlines, assignments on reflective practice, portfolio of learning, etc.). The research findings suggest that there is no consistent mechanism by which placement coordinators, off-campus supervisors, or mentors seek to employ or develop pedagogies to foster learning and the integration of knowledge. Learning, it seems, occurs by means of *legitimate peripheral participation* with off-campus learning occurring as a result of students working alongside professionals in their area via an apprenticeship model of learning. There is no evidence of explicit attempts to integrate on- and off-campus learning, although all parties felt this would and should occur. However, integration is implicitly or indirectly fostered by a variety of means such as the use of reflective journals. (*Journal of Cooperative Education & Internships*, 43(1), 14-35).

KEYWORDS: Postsecondary, business and management, sport, science and engineering, integration, reflective practice.

Work-integrated learning (WIL) or cooperative education is a strategy in which students undergo conventional academic learning, mostly at a higher education institution (HEI), and combine this learning with some time spent in a workplace relevant to their program of study and career aims (Houshmand & Papadakis, n.d.). WIL goes under a number of names internationally. In the United Kingdom this term is the well-established *sandwich degree* (Ward & Jefferies, 2004), but in the USA and worldwide *cooperative education* and *internships* are more common terms (Groenewald, 2004; Sovilla & Varty, 2004; Walters, 1947). Recently the world body for cooperative education - the World Association for Cooperative Education (WACE) added a by-line to its name – *work-integrated learning* to reflect a broader perspective of the nature of WIL, that can include capstone programs, internships, sandwich degrees, and work-based learning via industry-projects (Franks & Blomqvist, 2004).

Although work-integrated learning has been in formal operation for over 100 years (Houshmand & Papadakis, n.d) it has waxed and waned somewhat in terms of political status. It went through massive worldwide expansion lead by the USA (Sovilla & Varty, 2004), but this expansion was more about income generation for HEI than about enhancing learning. The expansion was followed by contraction, and in more recent times WIL seems to be in a second growth phase. This latter growth is related to perceptions of shortages in labor for particular areas such as engineering, and information and communications technology (ICT) (Houshmand & Papadakis, n.d.).

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STATEMENT OF PURPOSE

The purpose of the present work was to better understand if integration of knowledge occurred in WIL programs, and if so, what pedagogies are reported to bring about this integration.

LITERATURE REVIEW

Reported Benefits of Work-Integrated Learning

There have been numerous studies showing that WIL programs of study provide important benefits for *students* (Dressler & Keeling, 2004), *employers* (Braunstein & Loken, 2004) and *higher education institutions* (Weisz & Chapman, 2004). A key purpose of work-integrated learning is the notion of providing graduates with a comprehensive skill set desired by potential employers. The literature notes that it is problematic for higher education providers to provide students with such skills, especially behavioral skills; the so-called soft skills (Burchell, Hodges & Rainsbury, 2000; Coll & Zegwaard, 2006). So, for example, it has been reported that compared with conventional graduates, students who participate in WIL programs gain employment more easily, fit in better in the workplace, advance more rapidly in their careers (Dressler & Keeling, 2004). Likewise, Braunstein and Loken's (2004) report of a survey of studies about *employer* experiences of WIL/cooperative education revealed there are more studies of employer *perceptions* than research-based studies of employer *benefits* of cooperative education. However, there is an overlap of the overall findings. Both types of studies identify approximately 10 areas as being those most often mentioned by employers as *reasons for participating* in WIL/cooperative education. These areas include: (a) company image, (b) recruiting, (c) savings in time and dollars, (d) employee productivity, (e) cost in time and dollars, (f) retention rate, (g) position level, (h) career advancement, (i) affirmative action, and (j) new ideas (Hurd & Hendy, 1997). Similarly, Weisz and Chapman (2004) summarize the main benefits WIL is reported to accrue in the case of HEI. These are: student recruitment and enrolments; enhancement of student qualities in relation to the institution (i.e., self-esteem, academic performance); curriculum development (i.e., curriculum relevant to employer needs, skill development in students); the internationalization of the institution (i.e., through educational exchange of WIL students international reputation is enhanced); staff development (i.e., staff motivated and funded to do industry-based research and consultancies as result of enhanced industry contact); and financial benefits (via links with industry).

In summary, the benefits reported for all three stakeholder cohorts are mostly pragmatic or operational in nature; but it seems little is known about student learning – how this learning occurs and how it might better be facilitated or supported.

Work-Integrated Learning and Learning

Eames (2003a) notes that whilst there is a rich literature on the success of WIL programs, such research is almost entirely concerned with what he terms '*operational outcomes*'. He also notes there is a serious paucity of research into what WIL students *learn*, how they learn, and from whom they learn (Eames & Bell, 2005). This gap is consistent with criticism by Ricks and co-workers who lamented the situation in the 1980s, saying much research into WIL lacks a theoretical basis or links to theory, even when ostensibly investigating educational outcomes (Ricks et al., 1990). Recent commentary by Bartkus and Stull (2004) suggests little has changed.

WIL practitioners (i.e., those charged with the operational management of WIL programs) and researchers in recent years have strived to develop a theoretical basis to the *educational* aspect of WIL (Apostolides & Looye, 1997a,b; Van Gyn, Cutt, Loken & Ricks, 1997; Wilson, 1997). Recent progress has been made and Eames's work in particular has significantly advanced our understanding of how, and what, students learn (Eames, 2003a, Eames & Bell, 2005). The emphasis that these views place on social context permit an understanding of learning as a social process, in which students engage in learning through being situated in a community of practice on placement. According to Eames and Bell (2005), a sociocultural view of learning distinguishes the university setting from the work place in ways that allow an acknowledgement of learning in each setting that is different but complementary. Hence, the learning that occurs in the workplace is seen to occur through "the mediation of instruction, participation, and scaffolding through the use of language, instruments, stories and other tools that constitute the everyday practice of the workplace" (p. 166).

Eames and Bell (2005) conclude that WIL work placements are valuable learning strategies but note that for this learning to occur in a measured fashion, placement practitioners must design programs and placement structures that encourage learning as a situated, participatory and socially-mediated activity, and focus on assessing of learning outcomes consistent with such a view. Of particular relevance to the present work, Eames and Bell further comment that “students in such programs in science must be orientated to the potential of the placement to *complement* their classroom learning in contributing to their understanding of what it means to practice in science [emphasis added]” (p. 166).

Haigh (2008) comments on an interesting aspect of WIL workplace learning which he distils into two types of knowledge; peoples’ public general knowledge (PGK), and their personal practical knowledge (PPK). PGK is knowledge that already exists and is quite widely known. It is thus potentially accessible to everyone and is the sort of thing likely to be acquired in formal education contexts or indeed in the workplace (e.g., during inductions, and in shared documentation). Such knowledge is usually assumed to be useful to many people and in more than one situation. In contrast, PPK is a by-product of personal action and personal experiences (e.g., in a workplace). It is knowledge that has typically been reflected on, and learned from as a consequence. It is typically self-directed, and of immediate relevance to current personal circumstances. Allen and Peach (2007) observe that this type of PPK has been the intention of the teaching practicum for many years, and suggest this knowledge does in fact occur. It is worthwhile to note here, however, that teacher training, as a form of WIL, has had substantial government support and funded bureaucracy at its disposal to integrate and facilitate knowledge transfer between on- and off-campus learning (see Coll, Taylor & Grainger, 2002).

Haigh’s (2008) notion of PGK and PPK fits in with modern theories of learning. Eames (2003b), for example, argues WIL should encompass a broader notion of learning that emphasizes learning as a social process (Salomon & Perkins, 1998), occurring within a culturally-determined community of practice (Lave, 1991). In such a view the student undergoes a cognitive apprenticeship (Brown, Collins & Duguid, 1989), where they would attempt to access the PPK of more learned individuals such as working scientists and lecturers. Such an approach to learning in WIL programs would go some way to address Allen and Peach’s (2007) concerns about WIL being purely for the preparation of work-ready graduates: ‘engaged scholarship that enables students to develop skills as lifelong learners’, something advocated by Boud and co-workers (see, e.g., Boud, 2000, 2005; Boud & Falchikov, 2006). Haigh’s notion of PPK is also consistent with the notion of distributed cognition (Brown, Collins & Duguid, 1989). Distributed cognition posits that knowledge is not resident in an individual or place, but rather it is *distributed* around an organization. As an example, in a government scientific research institute, knowledge of research and detailed scientific knowledge might be held by a scientist. The intricacies of a specific scientific instrument and its operation might, however, be held by an experienced science technician; and knowledge of occupational safety and health issues associated with the handling toxic chemicals, might be held by the institutional safety officer or in manuals or specification sheets held in the office. Hence, Eames (2003b) and Eames and Bell (2005) report that WIL students can, and do, learn from a variety of people, and utilize a variety of these Vygotskian psychological learning tools.

Integration as Part of Work-Integrated Learning

A key aspect of WIL is the notion that it entails the *integration* of knowledge and skills gained in the HEI and in the workplace. It is the integration aspect of WIL that distinguishes it from *workplace learning* (i.e., simply what a student or employee learns whilst resident in the workplace, see Boud, 2000, 2005). By integration we mean in what way does the student take what he or she has learned into the workplace, and conversely in what way does what students learn in the workplace become related to, or incorporated into, the next phase of academic learning when he or she returns to the HEI after completing a work-placement or work experience? There is some literature on integration, although much of it is rather oblique in nature (i.e., it does not address this issue explicitly, but some findings or discussion are related to the issue). For example, there are two studies – by Van Gyn et al. (1997) and Parks (2003b) – which report that students say their WIL experiences allowed them to see how to put theories learned in the classroom into practice when in the workplace. Eames (2003b) reported similar findings – a student that learned about the theory underpinning the use of chemical instrumentation, for example, found this theory essential when trying to use and do trouble-shooting when using such instruments in the workplace on placement (Eames, 2003b).

If little is reported about taking knowledge learned at the HEI into the workplace during WIL placements, then even less seems to be known about transfer of knowledge and experiences in the opposite direction, that is, from the workplace back into the classroom. We see only a few comments in the literature, with, for example, Wong and Coll (2001) noting that a student learned the use of a discipline-specific statistical package, which was subsequently found useful upon return to the HEI.

There have been calls for more integration of on-campus and off-campus learning (e.g., Grollman & Tutschner, 2006; Stenstrom et al., 2006), and there are some reports about integration (e.g., Fink, 2001), but on closer examination these represent descriptions of current practice rather than research into the integration of classroom and WIL. A few items or topics have been identified as *likely* to be integrated as a result of WIL. These are, as might be expected, mostly generic skills such as the application of theory (Furco, 1997), increased discipline thinking (Cates & Langford, 1999; Rankin, 1984), problem-solving (Burchell, Hodges & Rainsbury, 2000), behavioral skills (Carrell & Rowe, 1994), time management (Parks, 2003), and teamwork and cooperation (Burchell et al., 2000; Weisz, 2000).

Although the research about integration of WIL is sparse, Apostolides and Looye (1997b) provide a model for integration, in their example of a resource planning program. They suggest a combination of course work (i.e., classroom or on-campus learning) and placement experiences (i.e., work-place learning) that has three stages: the early stage, the middle stage and the late stage, with student's activities and experienced pedagogies increasing in complexity with advancement through the stages.

The only other literature about the integration of WIL is based on the notion of critical reflection. Such a strategy is designed to enhance learning *per se*, rather than to foster integration directly, but detailed examination of the research on reflection indicates it fosters integration, if for no other reason than that it makes students more self-aware and helping them to engage in meta-cognition. Gray (2007), for example, talks of facilitation of learning of management in the workplace via critical reflection tools such as reflective metaphor, reflective journals, and critical incident analysis. Paku and Lay (2008), however, report that science and engineering WIL students exhibited limited capacity for critical reflection in spite of the direct use of such tools to drive critical reflection. Eames (2003c), as part of a larger study, examined the notion of integration between the on-campus and off-campus learning, again for science and engineering students. He reported that a large proportion of participants (some 20 out of 22) felt they were able to apply at least some of their university-learned knowledge and/or skills in their work placements. This application is perhaps not surprising; one might well expect say a chemistry student to use chemistry knowledge during a placement in say an analytical chemistry laboratory! This integration was *subject-specific*, and there was no great evidence that students were able to carry over ideas from one domain to another. Paku and Lay (2008, p. 3) reported this transfer can occur, but only to a limited extent:

Where students have been in placements unrelated to their field of study, they were still able to make links between theory used [in industry] and that [they were] taught at university. For example, Adam [a pseudonym] was completing a materials degree and did a placement with an electricity company. He found that the principles behind electricity theory were very similar to processing concepts such as mass balances; the equations were similar but needed different numbers, units and symbols. This reflected the student's ability to see the similarities between mass and electricity theory.

What is perhaps more surprising is that Eames (2003c) reported a high proportion of his students (17 out of 21) felt their learning on placement had influenced their learning upon returning to campus. In some cases this learning was a specific technique or use of a particular scientific instrument, but more commonly it was more generic things such as attitude, study skills/habits, timekeeping, and the like, and interestingly some insights into research: "An appreciation that things didn't always go right first time" (p. 56).

There is some mention of facilitation of the integration of on-job and off-job training in the vocational and technical training literature. For example, Hodkinson and Hodkinson (1995) mention the use of liaison officers "who were responsible for the day to day progress of trainees" (p. 214). However, it remains unclear as to what effect this facilitation had, or how it was manifest.

RESEARCH DESIGN AND METHODOLOGY

Research Design

This study was one year in duration and it employed a collective case study methodology (Basse, 1999; Merriam, 1998). A collective case study design permits researchers to gain an in-depth understanding of the issues of interest

and to explore meaning from a number of angles (Merriam, 1998), and across different educational contexts. Case studies are a very common methodological approach used in WIL research because of the highly contextualized nature of such programs (Coll & Chapman, 2000). The research thus constituted case studies from three important areas of higher education; *science and engineering*; *business and management*; and *sport*.

Research Phases

In the first phase of the research, researchers from each sector conducted a focus-group interview with a selection of WIL students from the relevant discipline about their teaching and learning experiences at both the HEI and in the workplace, and analyzed relevant documentation (i.e., course/paper outlines, graduate profiles, etc.) to provide data triangulation. A total of 30 students were interviewed (12 from science & engineering; 7 from sport; and 11 from business and management), with the interviews conducted by the authors in each of the respective sectors. The students had some co-op experience and they were thus generally senior students. In the second phase of the research, WIL practitioners – placement coordinators or university/academic supervisors – participated in interviews, which also involved initial discussion of current pedagogical strategies used to facilitate student learning in the workplace (again the interviews were conducted by the authors). A total of 22 practitioners were interviewed (8 from science & engineering; 7 from sport; and 7 from business and management); all were experienced staff. In the final phase of the research, a selection of employers of WIL students participated in interviews, which involved discussion of current pedagogical strategies used to facilitate student learning in the workplace. A total of 16 employers were interviewed (6 from science & engineering; 6 from sport; and 4 from business and management). These employers ranged in seniority, but all had been involved in WIL programs and several had supervised co-op students for many years. In each case the interviews and document analysis followed a proposal developed in advance of data collection. The interview protocols, available from the authors upon request, drew upon relevant literature (see above), particularly the work of Eames (2003a), and sought to describe teaching and learning experiences and approaches at both the HEI and in the workplace.

Research Quality Measures and Limitations of the Work

The research was interpretive in nature and philosophy. The traditional means of judging the quality or rigor of a research inquiry is by reference to the four criteria of *internal validity*, *external validity*, *reliability*, and *objectivity*. Guba and Lincoln (1989, 1994) propose that in interpretive inquires such as this, *credibility* replaces *internal validity*, *dependability* replaces *reliability*, *confirmability* replaces *objectivity*, and *transferability* replaces *external validity*. This framework formed the basis of quality assurance for the study, which consisted of the following measures. First, *credibility* was enhanced by prolonged engagement, persistent observation, peer debriefing, negative case analysis, member checks, and progressive subjectivity. Second, *dependability*, which is concerned with the stability of data over time, was indicative of the increasing maturity of the inquiry, and the changes and shifts in constructions were clearly identified and fully described. Third, *confirmability*, which seeks to ensure that the results of an inquiry have not been subject to influence by the investigators, but solely on the data itself. Hence, the raw data and processes used are made available in this report for scrutiny (see research findings). This process provides an audit trail which is intimately linked with the tracking process necessary to assure dependability. Finally, *transferability* is the interpretive equivalent to external validity or generalizability, and this involves a shift from the author to the reader meaning it is up to the latter to judge if the research findings are applicable in their own setting. This transferability is enhanced here by the provision of a ‘thick’ description (i.e., a very detailed description, see Merriam, 1998), which details the context, methodology and data analysis procedures.

This study, like any study has some limitations. Shulman (1988) argues any study no matter how well resourced, how long in duration, or how well designed, has inherent limitations. He suggests this situation is not something to be concerned about; rather what is important is to identify any constraints, and indicate what influence the researchers feel these may have on the study. Our first comment is that the nature of this study is that of an interpretive study. Guba and Lincoln (1989, 1994) comment that such studies by their nature are not directly generalizable to other educational contexts. Instead the onus for interpretation shifts from the researcher to the reader. This transferability is enhanced here by the provision of a detailed audit trail in which we have provided considerable detail about the methodology, specific methods and educational context in which the study was conducted. Second, we note here that the evidence about learning is inferential in that we rely on reports of student

learning. This limitation is mitigated here by the fact we have triangulated data from interviews, with examination of relevant documentation, and used different stakeholders in the interviews. This has allowed us to build a picture of the learning that has occurred in these case studies. Third, in this as in any study, there is an assumption of honesty in participants' responses. This threat is probably most acute with the students who one might imagine would be less inclined to comment adversely on aspects of WIL to researchers. The evidence in the interviews, however, suggests the student participants felt reasonably comfortable in providing criticism about the programs and HEIs in which they studied suggesting this limitation is not severe. Finally, there is a risk that we have a biased sample, which consists only of good students, or employers with whom we have a good relationship. We sought to mitigate this by dealing with employers and students with different experiences, some good, some not so good; and students with varying academic capabilities. Again, the constructive criticism suggests this limitation is not too severe.

RESEARCH QUESTION AND RESEARCH FINDINGS

The research question for this work is:

What pedagogical approaches are used in New Zealand WIL/cooperative education programs in terms of integration of student knowledge, and what impact do these have on student learning?

This question is now interrogated for each stakeholder group in turn, viz., students, practitioners and employers. This is followed by a summary cross-case analysis. In each case the participants talked about their background, described the context of the learning, discussed what they felt students learned, what they should learn and how they should learn, and finally what processes or approaches were used to help students learn.

Students

Program Aims, and On-Campus Pedagogies

The students had mostly come into study directly from school, and typically had come to their institutions for pragmatic reasons such as proximity to home, "because it's close," or the appeal of lifestyle in a smaller city: "I don't like big city life," or that they liked the particular campus: "I think the campus is very beautiful, so the study environment for me is very good." All participants envisaged careers in their disciplines or related areas, and engaged in WIL because they considered their career prospects would be enhanced: "I did the BSc(Tech) 'cos of the work placement, that was the main thing, that attracted me ... I don't want to be fresh out of uni and get shoved around because I'm inexperienced."

The students' perceptions of the program aims were limited to their career expectations mentioned above, and they saw the WIL program as being all about skill development for the purpose of career enhancement: "It's a good degree, and it's been a good stepping stone into the future." In some cases a learning contract was employed, and this was seen as important in identifying the learning outcomes that shaped the overall direction for the experience.

Participants reported experiencing traditional pedagogies on campus, lectures, tutorials and laboratory classes and in some cases off-campus field trips, and the like. This finding is consistent with documentation such as paper/course outlines, which typically specifies that students do lectures (2-3 per week) and often practical classes (typically 6 weeks of 3 hour laboratory classes for science students and field trips for sport students). Not surprisingly, they felt they learned theoretical material in lectures and practical work in laboratories or in the field trips: "The lectures they cover practical things, but just the theory of it. You learn more from the labs." Learning these "theoretical things" on campus was not necessarily seen negatively. Indeed, lectures were seen to serve a different purpose, in that the lecturer was able to cover a wide range of material: "I took a range of biology papers and a range of engineering papers and they are all very different ... it was the variety of information that was put into the lectures."

On-Placement or Workplace Pedagogies

As might be expected, the participants felt the things best learned on placement were practical skills, in a more substantive fashion than even practical classes on campus might provide, and in particular using, for example, scientific or engineering equipment: "Using different equipment and set ups and stuff, and practical stuff we don't

get a chance to cover everything in our labs. So [we] learn new techniques.” This feeling was linked to a perception that even in these rather applied degree programs, the type of practical work covered on-campus was not ‘real world’ in nature:

I think the placement papers help to get some practical skills. It depends on what kind of practical skills you want. From our workshop papers [i.e., on campus] it helps with getting some practical skill, but it’s probably not going to be applied to jobs to a certain extent.

Likewise, the students thought that professionalism was best learnt on placement as “the whole work ethic and the understanding of what it is about is when you go to work.” This was particularly important for students that had come to university straight from school: “If you hadn’t been out in the real world before it’s that whole exposure thing.” People skills and confidence were identified specifically: “You get confidence from what you were doing and what you were achieving that you kind of take it away with you and put it into other aspects of your life.”

The students commented that they felt they needed to go into the WIL experience with a base level of knowledge and skills that they had gained while at university: “You need a certain amount of skill that you are of use ... you need a foundation and then you can build on it when you are there.”

The ability to learn on placement was tempered somewhat by the duration of the placement. The engineering placements (according to paper/course outlines) being of three months duration, were seen to provide a different experience to that of an ordinary employee:

I think the placement is slightly different to having a proper job with the company in that when you do get the job then they’ve got more time to invest in you, so the skills that you’ve learnt, this is my understanding they’re slightly greater than what they can just throw at you in your three months because they know that you’ve got good learning skills, you’ve got to apply them and you’ve got to process to get the result. So the amount of what they can teach you is somewhat limited by that.

The students felt that the practical skills learned on placement were of a much higher value than in classroom settings. This feeling was linked to a perception that even in an applied business degree program, the type of assignments, including projects, did not reflect the ‘real world’ situation:

I found that at [the HEI], like with the courses they teach you a lot of stuff but ... when you doing a project here [i.e., the placement] give you a budget, actually give you a certain budget, they kind of tell you what they want, but with the real world it’s more of a, you got to come up with a plan like a promotional plan but then the budget often is restricted, or like very, very, limited.

Combined On-Campus and Off-Campus Learning

There were some things the students felt needed both on- and off-campus learning experiences to achieve. Principally these were described as ‘research skills’, something seen quite holistically, and something requiring the student to be an active participant in learning:

I think what’s really important maybe to me is researching skills, background research ... when it goes to the placement, it’s good as well you tend to do your own research, you just want to know more, and you don’t need the employer to go “oh go and read this up, go read that up”. And you can sort of impress them as well, you go like oh yeah I did my reading on that, and they go “wow we can save time on extending that to you and you can move on to the next step”.

How Learning Occurred and From Whom?

The participants reported learning from variety of sources and in variety of ways. First, not surprisingly, they reported learning from their lecturers naturally, but also from other people such as technicians and office staff - whether on-campus or off-campus: ‘My supervisor gave me what to do, he told me what to do, and then he gave very informative pointers. But when it came to skills it was always the other lab technicians because they were there longer’.

Participants pointed to the contribution made by lecturers in their learning, but also said they learned from classmates during cooperative group study on assignments and when studying for exams:

Well I think I have learnt a lot from the lecture because the lecturers enlarge our knowledge, they will talk about something in their life or in their industry ... Yeah I agree with her. They got lots of knowledge you have to learn from the lecturer first. And some people got experience, but some basic knowledge you have to learn from the lecturer.

Students also commented on the significance of group sessions within classes as being important due to the interactions with other students and lecturers: “The classes seem to be more group-oriented with people having

group support ... It was kind of a good opportunity for classmates to discuss what was going on in each other's [projects] and provide support for problems or issues."

However, the students did not always understand the importance of some pedagogies such as reflective journals, and for one participant the way he had learnt at university was not seen as effective as what was learned in the workplace: "I got in the habit, when it came to university, almost to rote learn information and when it came to the workplace it didn't really work too well. Actually I had to think, be innovative of what needed to happen."

They reported learning from people generally by asking "a hellva lot of questions ... you just pester them until they get sick of you," and by "sitting down and reading a book" when people were not helpful or when they could not understand what was being said.

Students said that they learnt from supervisors and work employees as well as from their peers who were doing WIL at the same time. The WIL experience caters for different types of learners. "I'm pretty kinesthetic so I'm hands on - so [the WIL experience] was a major for me." Group interaction was identified as an important learning strategy while out in industry: "Being in that kind of environment [i.e., placement] you have the opportunity to use all the people around you to learn well so you have got someone to bounce ideas off or get a piggy-back from." Most of the participants felt that the workplace host supervisor/manager was the critical person to learn from, at the placement site:

Yeah the host manager and accountant, yeah because they are very friendly for me and they teach me lots of things ... Accountant they got more experience, they have lots of [knowledge] ... learned from them and my host manager, we always have a meeting every week and just solve problems.

Some of the students reported learning also from other staff members, in addition to their host supervisor:

All of them, my host and also other staff because you know sometimes I do the customer service I need, talking to the student and the other staff also do this job, she always told me you must take [collect] all [the information] you need to know [and] some things [documents] next time, so I think that it's very, very helpful for me.

Integration of Learning

The participants had few expectations that there would be direct integration of on-campus learning with off-campus or on-placement learning (and there is not much direct mention of this integration in paper/course outlines – see below). The students did expect some things they learned on-campus to be of use to them on placement:

I think there's like communication, leadership, group work, kind of everything really to be honest, as in what ever you learn at [the HEI], although it might be different, it's still really relevant to what you do in the work place, so you can actually take what you learn in [the HEI] into the work experience and like that's what I actually enjoyed about [the HEI], is that it's really real experience based.

It is interesting that they mentioned generic skills and personal attributes rather than say, theoretical knowledge and technical skills: "Enthusiasm to learn a bit more." One reason for this situation seems to be related to the perception that the work done on placement may not necessarily be in exactly the same area that the students studied while at university: "I might focus on one thing at uni, and I know there is a chance of what I want in uni I won't get it in my placement." The integration of theory into practice is specified as a learning objective in the documentation for all WIL program course/paper outlines which in the case of engineering, for example, specifies that "The work experience will be with an approved organization, be relevant to your studies and often involves a 'real' applied science project." Likewise, in the in the business and management programs the course documentation states students are expected to "Integrate theoretical concepts and accepted best practice to support actions, solutions, conclusions and/or recommendations made during the project/placement."

In contrast, the participants reported that they expected there would be integration of off-campus or on-placement learning into what they learned when they returned to continue with their university studies. This comprised some practical expertise and hard skills: "When I was doing my placement and it was the same thing, and I was pipetting again [a technique for transferring small amounts of liquids accurately using a glass vessel called a *pipette*], you learn, just a slightly different technique, yeah and so then you are applying that this year." In some cases this was about new techniques entirely, which subsequently meant the students felt they were a step ahead of where they thought they otherwise might be when they returned to on-campus to study:

For the first placement it was good, just to be able to work on those things on paper that applied to the dairy industry, and I could see the same about the [local paper mill] placement as well. And I learnt a lot about simulation programs and been learning more recently about what I didn't know when

I was doing it especially from the like the control paper that I'm doing, learnt about controllers and they were a particular hassle when I was doing a simulation, so it's been good to pick up on that even though it's going to be very useful.

There was no perception that any integration was managed in any shape or form, or that anyone actually facilitated the integration of learning. As noted above, there is little direct mention of integration in paper/course outlines or in the placement guidelines. However, in many cases placement guidelines address this obliquely, for example, suggesting that the student engaging in "reflection and review," of the WIL program also involves the keeping of learning journals (see below – practitioners section). This reflection and review talks of "setting placement objectives," which seem to seek to extend learning (i.e., by gaining new skills) rather than integrate on- and off-campus learning. Any integration is thus implicit: "Has your work ethic changed?" and "Are there any technical or soft skills (e.g., communication) skills that you have gained or improved?" Such skills are generic and assuming one gains, say communication skills, then subsequent communication would be enhanced upon return to on-campus learning. Interestingly, it seems the students felt it was their responsibility to connect their learning:

I think it's just, if you're a practical person and if you are a person who knows what you want in life and you see your goals and you're positive and self motivated. Well I don't know about other people, just comes naturally to me 'cos I'm sort of person who wants to do something and make it worthwhile I wouldn't go into a placement and then not use things that I already know from uni, to enhance my experience there, it's a bit pointless.

They did not, however, consciously set out to make this connection, rather it seemed to happen naturally: "To be honest, I don't make a conscious effort, I don't go, okay I've learnt this let's use it. But I tend to use it by coincidence and convenience."

There was an expectation by some mature students that someone *should* facilitate the integration of learning:

As an IBL [i.e., industry based learning] student I think, the actual IBL course coordinator should actually get more involved with the projects that are going ahead, um and maybe there should be a separate IBL coordinator for each program like marketing, accounting because that coordinator really needs to drive the whole thing and push it through the whole cycle, that way the students would get more support as well, that's just a recommendation.

However, the students felt that supervisors (both academic and industry) were important in facilitating the integration of learning: "You, as the student need to make sure that both industry and academic supervisors are there for you." However, the student needs to have the most significant role:

The student needs to be in the driver's seat like in quite a strong way. You don't know what you are going to be doing until you start getting in to it.

It actually gave me more, deeper understanding of what I want to do, like as in what I need to, what I need to achieve what I want to do. Because the reason is I've never seen myself as you know, as a proper, you know like as someone important, but from the work experience you can actually, you can define yourself as you want to be a leader or if you just want to be a follower. And personally I want to be a leader. And work experience actually helped this.

In summary, it seems any actual connection between on-campus learning and off-campus learning (or vice versa) from the students' point of view was coincidental, and the students felt that no one sought to directly facilitate or drive this directly, although their academic supervisors did frequently comment that they expected students to relate theory to practice:

Practitioners

WIL Program Aims, and On-Campus Pedagogies

The practitioners held common views as to the aims for their WIL programs, which like the students they saw as predominantly to do with career clarification: "For me it's, it's to enhance the university learning so it should build on what they have done and help them clarify a career. Give them a go at what they think they might like, and find out what works and doesn't work for them."

However, some noted that "it's a lot more than that, because it's about relationships and cultures and that kind of things in business," and most felt it was about providing good learning opportunities for their students:

Give opportunities to students to see what work as in very aspects aligned with what they are studying so it gives them opportunities to see where they would like to go when they finish. I think it gives them an opportunity to see what skills are needed out in industry, which they don't have and which then they can appreciate what they do learn and also vice versa they get to see if they can use some of their information perhaps, hopefully to suggest to the places they are placed at how things could be done differently.

For younger students in particular, it provided an opportunity to launch them into the job market and provide a taste of roles in the ‘real world’ of the work environment:

We want to try giving them something that will give them an edge ... get their foot in the door ... make them stand out from all the other CV ... If you can say you did this project and this is what you achieved, and [employers] can see that you also got good grades then you are going to have added value.

Some WIL programs involved a significant number of distance-based and postgraduate older students. In these cases students WIL may be about changing profession, or up-skilling: “They want to get into sport industry but they might have been a teacher, or a lawyer, or an accountant, whatever it is, and they’re not in the sport industry. They tend to be older, and there the aim for them is different.”

Things best learned on campus were fundamental theory: “The nuts and bolts ... that pure stuff which the university deals with.” The students also were expected to learn at least some basic practical skills: “In addition to the theory they must have some basic practical skills to be useful at the end of the work placement, I mean the electronic engineer who can’t solder, there’s plenty of those around, some jobs they just can’t do.”

There is a focus on developing graduate competencies, as part of a whole course of study, involving both hard and soft skills. This was confirmed by document analysis of course and program outlines. Hard skills focus is on specific area content in on-campus learning (e.g., event management, basic science content, etc.), whereas soft skills are related particularly on developing aspects of communication (e.g., verbal & written skills):

It’s like part of a coherent course of study ... the introduction of the sport management planning paper at 200 level has assisted with that ... it actually prepares them and gives them some understanding of what they actually need to do ... how to manage a project ... financial planning, budgeting, running a project, risk management, writing press releases.

So the theory behind the practice was seen as best learned on campus, and it was felt that the students should be technically competent before they enter the real world of work: “I expect them to be technically competent and... the IBL [i.e., industry-based learning] to be a journey of self-discovery and also a journey of learning what goes on in the real world.”

On-Placement or Workplace Pedagogies

Consistent with the students’ views, the practitioners indicated they felt the students would learn practical skills along with values associated with work etiquette on placement. However, a key thing was work values and an appreciation of workplace culture:

Responsibility in all its variations ... turning up on time everyday ... work space, um working in with others doing what they’re ... are asked to do, and ... to develop initiative, yeah. Being able to be relied on, employers have taken those people on, because they are too busy and they’ve got no one else but the time available to do this project.

Pedagogies reported being used on placement included learning journals (as noted in paper/course documentation – see above), and these were identified as being particularly effective in the personal development of students:

A lot of the learning they are getting out there, it is more personal, it comes from their reflective journals learning what, [for example] “oh hang on I’ve thought I was good at that but I’m not”, and getting to realize that different places work in different ways, and reflecting back on their role ... and teaching them to take responsibility for themselves.

The quality of the learning journals was reported to improve as the student progressed through the placement:

Things like being able to communicate, ask questions, disagree with the employer, disagree with the supervisor, with validity. [To query] why are we doing things? Why are we doing it this way? Which they would never have thought they could do when they first arrive. So initially it is just learning the task and then moving on they become more comfortable with the menial tasks, they start to want to do more tasks and then start to learn as to why they are doing these tasks this way. Is there another way?

Collaborative assessment meetings with workplace supervisors also were deemed of considerable importance:

You really understand when you see them interacting in the workplace with the supervisor and the things that they say about themselves, the way they put across their own comments in the assessment form, I think that is where you really get to find out exactly how much they have learnt and what they have learnt.

Monitoring of student progress through the placement through regular contacts was seen as important because it allowed for intervention or guidance in a timely manner: “So it’s quite important to me, from my perspective that

you have to keep close contact with these students and follow and monitor their progress.” When identified as necessary, this guidance was provided by the academic supervisor, rather than the placement coordinator:

My role as [an academic] supervisor is to keep them on track and provide them with [guidance should they] find a situation where there is something that they haven’t learned in the classroom that they need to do, to tell them where to go, where to find it.

Problem-solving skills also were essential and something academic supervisors thought were best learned in the workplace:

Absolutely, yeah but problem-solving means that they have something to do that they don’t quite know how to do, and so they have to quote “find out how to go about doing it”, okay, as opposed to, they might have some operational problems to solve, but problem-solving in the generic sense means the boss says here’s a job, how the hell do I do that?

Combined On- and Off-campus Learning

A number of things were identified as needing both on- and off-campus learning experiences. There was an issue in that there was not necessarily a match between on-campus and off-campus learning (as noted by the students and contrasting with paper/course outlines – see above), and that they learned about business *per se*, about their roles and contributions:

I find that a really difficult thing because we’re not training people for specific industries, so if we are going to teach them a skill, does that mean half of the class is never going to use that skill that we spend a lot of effort in? Also, I think I’m reflecting on the fact lots of people get degrees and have skills, no practical skills when they go out, so if we say that 80% of people never have worked co-op and they survive or we can say our students are better prepared, but are there any things? Well I must admit if you haven’t taught them to solder [i.e., electrical soldering using a soldering iron] before they went out there, it would make them a bit of a handicap to them in industry.

Of the things that are needed both on- and off-campus, teamwork was seen as essential in the real world, but it was considered that some exposure to it was possible in classrooms: “They even get used to teamwork, you know whether it’s good or bad, in the classroom and just dealing with groups in how to deal with conflict when people are not carrying their weight, situations like that are very real to the business.” Interestingly, the practitioners felt teamwork is of particular importance in New Zealand:

Being part of a team is very, very important [and] if people feel in industry that you are not going to fit in with the rest of their team and the rest of the colleagues they don’t really care how brilliant you are. They are not going to employ you. It is really, really important that you fit in. Especially in New Zealand I found more than anywhere else.

As might be expected, good communication was seen as vital in team work:

Yeah I think they all tie up together because individual people have to have those skills but then in the real world situation you bring together everything you know. I think the vital one is communication because as you asked earlier on that is something that is everywhere, whether you are in the classroom or the work environment communication is vital and if there is a communication breakdown then we have difficulties in the system. So communication is a very vital skill and everyone will have to have it no matter where they are, and communication really is not just being able to express yourself, and make yourself understood. Communication I think also means that you are able to inform people about things especially if you are working in a team.

Time management, like teamwork, it was felt could be learned both on campus as well as in the workplace:

One of the things that we try to instill in the classroom is when you are given an assignment, give them four weeks to do it, we expect you to work on it right from the start so that it gets finished. In business definitely as soon as you are given a job to do, you don’t think oh I’m going to hang around for two weeks doing nothing, getting paid and then try to cram it for two weeks, so [in] both of the situations we’re trying instill the fact [when] you [have] got something to do you get down and do it, and if you finish it early move onto something else.

The importance of time management was routinely stressed by the practitioners, one commented that:

You have to manage your time when you are studying as well, so I mean, I think that is a skill. Time management is a skill that you can use both in the workplace and in academia ... You are faced with a lot more problems in the workplace, more challenges and in far more detail than you get given in an academic environment.

But time management, whilst considered an important part of students’ on-campus activities, was felt to be of critical importance in the workplace:

From a student perspective or from a work perspective, the student perspective probably gives them some time management skills because they see deadlines, the work perspective though will probably give them a little bit more and the deadlines are not just I didn’t hand in my assignment on time and my grade is low, but you can have somebody in their face yelling at them, I need this and I need it now!

The options for learning about problem-solving were everywhere on-campus and in the workplace, and was something that engaged the practitioners a lot when working with students:

When I talk to my students [I say] everything is a problem that needs to be solved. Everything they do is a problem that needs to be solved. That is one of the things that we can pride ourselves on in a technical side of things. We are always looking at what's the problem and what's the decision that needs to be made.

While some problem-solving skills may be learned in the classroom, it was felt that most had to be picked up in the workplace:

I think they need to solve the problem of thinking that the theory that they have gathered in academia is really what will happen out there. They need to ... adapt the skills that they have gathered in the classroom and change [them] to suit the environment in which they are going to apply those skills, because [in] my experience it will not work exactly [as] they have been told in class.

How Learning Occurred and From Whom?

The practitioners did see learning consisting mostly of acquiring skills - a combination of hard and soft skills 'a small opportunity to apply some of your hard skills', but mostly soft skills associated with things such as team work, cooperation and responsibility for work outputs:

I think the main thing for me would be for them to see what it's like outside the university and learn some responsibility different from a lecturer expects of you, and to develop the soft skills. I would have thought that those would be the important ones.

The practitioners felt that theoretical classes (lectures, tutorials, seminars) are made as practical as possible and aim to lead or stair case towards the placement or capstone WIL project involving the placement organizations. One practitioner commented that "It's seen as a part of a whole course of study; it's like the culmination of what's happened."

The practitioners reported that students are provided with models or frameworks to reflect on during practical situations, for example, working through and problem-solving real scenarios, delivering a lecture on theoretical concepts, or presenting on their WIL experiences:

It's those kinds of practical elements that come into the courses that are for me, that allow them to take those experiences into their [WIL experiences] and later on into the work force. And at least they have had some kind of experience with those things before they get out there.

At 300 [i.e., advanced] level my students in the second half of the semester have to actually run a lecture, so they are expected to develop a lecture in terms of their Power-Points [i.e., presentations], for example, and deliver it in a form that is acceptable for a larger group.

Assignments are focused on developing critical reflection skills. The reflective journal in particular is 'an integral part of our assessment' undertaken throughout the learning process:

I like to say that what the students learn is how to think critically and in the kind of world that we live in now where theories are changing ... there's so much information. I like to think that I prepare them to think critically about what they've been presented with and then they can go and have a look and find more information if they want to, they can reflect and then make decisions in terms of leadership and management.

Group meetings/seminars/tutorials provide the opportunity to share student experiences. Initial one-on-one meetings with practitioners and students enable a focus on individual needs and matching students to projects and supervisors: "For the extra-mural [i.e., student learning by distance education] the post grad students ... I will talk to my students and ask them what their skill gap is, because they're people who have, generally bring life skills with them."

Inviting staff and graduates from industry to talk about their experiences in classes is another way practitioners sought to link theory into practice:

We have somebody coming in who has put that theory into practice in the industry. So [the students] may not necessary get a chance to do the hands on stuff but they listen to somebody else that has, who then shares their thoughts on how good the theory is, or isn't.

The practitioners indicated that the workplace supervisors (i.e., employers) provided both formal and informal verbal feedback and written evaluations of the students learning: "Supervisor evaluations give us sometimes a pretty good indication of where [the students] are at in terms of where their skills are lacking, etc. Or whether they actually really moved ahead, or progressed on."

Things learned on placement took place in formal as well as informal situations. Learning during placements was not only through planned activities, "one of the interesting learning things that's come out of this, which probably isn't in the IBL anywhere, is the amount of informal learning that takes place at afternoon tea and morning tea and things like that," but it was felt that the students may be lacking in communication skills necessary in such situations:

I think that in the workplace that is where the communication skills are really tested ... especially the oral communication because some of them have to deal with clients. They might find in the social environment at lunchtime, at tea breaks, that other people are chatting, you know casual conversation, and then they suddenly realize that their skills are lacking in one of those areas.

And the student was left to discover other ways of learning:

A lot of it is the politics of the workplace; the things that they get in IBL are the closest they will ever get to quote the real world learning because the classroom is quite closeted in that regard and you're supported, etc., etc. But in the workplace, um that more than often enough doesn't happen and so just the politics, getting along with people, [for example] understanding how to find the right person in the organization to actually ask for help, how to know who you should listen to, that kind of thing can't be done in the classroom and probably is strictly limited to the work placement, that from my perspective, that's the beauty of IBL.

Networking also facilitated learning, and had ongoing value: "Yeah, one of them is relationships between people, the networking bit of that has come up with one of my students, the value to them of meeting colleagues and being able to interact with them in the future, it's a future thing."

It was felt that the student would learn most from people who were both accessible and friendly:

Who will the student learn most from is I think the person who is most available and most friendly sort of. If he was going into the work environment for the first time there may be a supervisor but if the supervisor is not available when the student needs a supervisor then the student will go to somebody else and who is available and usually you will find there are people there who are very friendly, they are willing to help and they are available and those are the people the student will learn most from.

Integration of Learning

The practitioners had few expectations of integration of on-campus learning on placement. It was considered the students would have developed a "work ethic" on campus that was carried into their placement experiences:

I guess I would hope that they hope that they would take work ethic the ability to learn things quickly. I presume if I was in say chemistry lab I would expect there are people that have some understanding of chemistry and if I was in a processing place I would want them to understand a little about industry, but not specifically my industry because, if I went and got the general person, it went and employed somebody out of the work force, obviously in my selection I would look for people who had experience but I'd balance it up with whether they had initiative or whether or had a willingness to learn. So I wouldn't expect to take somebody who was [studying] electronics and put them into [a] chemistry [placement] or vice-versa necessarily.

There was, in contrast, an expectation of integration of placement learning upon returning on-campus. The "work ethic" surfaced again as did "personal responsibility," and "some *nous*, well some practical thinking, thinking ability and how to organize themselves and how to, you know, to think to reason," with an expectation that these sorts of attributes would be more developed after the placement experience. Views about the hard/technical skills were mixed with some saying workplace skills would be "too specific" to the workplace, but others feeling they would gain some transferable technical skills: "Yeah I think if they have had an opportunity to be working in a [engineering] workshop they certainly would come back with lots of skills which will help them."

There was a particular focus noted by all practitioners on making on-campus learning as practical as possible so that it linked to the WIL experience:

Because the things that you teach them on campus are putting them into sort of practical experience situations so that when they inevitably do go off campus, they've had some of those experiences already ... it's like working with an athlete, you teach them the techniques, and then the actual sport itself is applying it in competition. And so it's the same sort of scenario.

It was also noted that this works in reverse where the experiences from the placement are discussed and reflected upon back on campus. This opportunity was felt to be particularly valuable with this cycle of reflection-on-action (Schön, 1991) being able to be repeated:

Often they will go out and do their thing when they're out on placement and they come back into the class and we discuss what they experience and we reflect on it so it's about, giving them the theory, letting them go out there and have a go at it, and then when they come back they discuss it and that's where the most learning happens is when they come back. 'Cos they don't have time to reflect when they're out in the work environment often, so this on campus provides them with this opportunity.

There were some examples reported of integration of on-campus learning when learning on placement. During a placement the student gets an opportunity to not only to put theory into practice, but also to secure full-time employment: "He wasn't even interviewed after his IBL, he just carried on working ... when his [placement] time was over he just carried on and he was in full time employment." All the three stakeholders are considered to contribute to the student's learning:

It's a three-way partnership, there is the student that's got to show the initiative and start asking [questions], there's us [setting] them up into the position where they are getting, know that they are comfortable and if they need the assistance we're here ... and then the workplace should [then] be made fully aware of their responsibilities, [as] they're agreeing to act as part of the supervision.

The practitioners saw responsibility for integration of learning lying with the student. This responsibility it was felt was an intrinsic feature of the WIL programs; in a particular program that involved alternating periods of on-campus and off-campus learning:

Quite likely the project that the student is working on in the workplace will kind of facilitate that [i.e., integration] automatically ... Earth sciences students out in the mine doing rock identification ... are going to draw upon their analytical skills that they have picked up, and also they have picked up in the labs. So the project itself or the work itself will draw some of that out.

Integration it was felt was more likely to occur if the placement and student were well-matched:

I think that the match of student to placement here becomes really important as well. If you match it up well then it will all happen more readily. So a biology student doing data entry might not, wouldn't be a match, and that would be an example where that knowledge transfer is not occurring.

Integration was facilitated by the instructions in student guidelines about report writing (as noted above). Placement guidelines contain a requirement for students to set learning objectives (e.g., hard and soft skills – examples are given) before going on placement (or early on in the placement in negotiation with employers), and to complete a reflection and review section at the end of the placement. This is consistent with interview comments made by the placement coordinators:

Through their reports, through the reflection their review part, they actually ask themselves, What have I got out of this? How is it going to help? How is it going to help my university studies? So maybe they themselves facilitate [integration] for themselves.

However, it was noted that they were not sure of the student's ability to link their work experience to theory, despite being confident of their practical skills learnt in the workplace: "That is where they still struggle the most when they write their reflective diaries ... it's a lot about what they've done and then they go and try and find something to meet that criteria, whether they would do it I'm not sure."

But ultimately it is the student who is required to take responsibility for their learning:

My students email me every week and I give them feedback every week. But I think the whole idea is you're not too close, it's having good early warning systems and one of the things that I make clear when I go out with them for the first time to meet their supervisor is to say if there is a problem I want to hear about it early not late.

Employers

WIL Program Aims, and On-Campus Pedagogies

Interestingly, in contrast with the views of students and practitioners, none of the employers interviewed talked about the use of WIL programs in terms of graduate recruitment, specifically for their organization:

So it would be nice, unfortunately the size of the organization I work for, we don't have the capacity to take them on once they're graduated, but we stay in contact with them so they go through our program before that, we tend to like to stay in contact and no doubt if a position did ever become available we would make an offer to one of them and students that have been grounded in that area [with us].

The employers were asked to comment on the skills and attributes they expect from WIL students before they arrive. Most placed particular importance on communication skills: "I think it [will] be the same as when we employ new employees, basically good English skills." One employer, who took on a Chinese WIL student, emphasized the need for good written English: "Sometimes business writing is very important for Chinese students because they are not very good in oral English ... so they can do more in writing."

The employers also emphasized the importance of attitude, with one relating this to the need for WIL students to give more thought to what they want to get out of the placement:

I think they need to be a bit more focused ... that they are coming from a university or college environment [into a] business or an office environment, and to have a better understanding of what they are trying to achieve rather than walking in "cold". I think it's more the understanding of what they want to do I think. From what I could gather there was no clearly defined future as to what [Student X] wanted to do. He just wanted work experience and you can get work experience anywhere really.

For another employer, attitude was more about how well prepared the WIL student was, particularly in relation to what they knew about the company:

They have to have the general knowledge about all the equipment and what we sell, such as like um what type of network we sell, like [Company X & Company Y] and what's the difference between them ... and when the new technology came out. They had to know what it is and what it does, yeah, so they can explain it.

In terms of how on-campus classes contribute to student learning, these employers tended to focus on the need for students to be well grounded in the realities of business: "The best thing [they can learn] from the class is [to get a] general idea of the business."

For one employer the focus of on-campus learning should be "to prepare them well to tackle the [realities of] employment or get a grip of what the real world is about." This is something that another employer believed was done well in New Zealand: "We find ... academic education is more practical [here], I mean like [compared] with other countries." Surprisingly, one employer felt that classroom-based study was more important than work placement learning:

For myself, I believe that classroom study is more important than practical experience. I mean especially during university education, 'cos you need to have really good educational background, good foundation, much knowledge about marketing something, you can [then] relate the theory to practice.

On-Placement or Workplace Pedagogies

Reported approaches used to help students learn on placement consisted of induction and mentoring (the latter, typically by the participants themselves). Induction was an organizational-level activity such as any new employee would engage in: "I'm talking about the whole induction as the employee would so they go right through [an induction] as an employee would, they get email access, and they get to access to all the stuff." But induction also was about seeing the company in a more holistic fashion:

Well across the company it is separate that the students get to putting a lot more emphasis on induction processes, giving people irrespective of where they are working, putting them through different parts of the business in terms of working on the shop floor, even if they are in the office.

The mentoring tended to be informal rather than formal, typically introduced during the induction process, but eventuating as more of a "buddy system":

Mentoring is through the induction process. It's a buddy system, we actually name a buddy that then supports this new person and they should take them through all those initial aspects and then through the technology placement they mentor would probably be the buddy anyway. So there is a mentoring sort of buddy system.

Things best learned on placement included soft skills such as "general people skills" that were deemed lacking before the WIL student turned up for their placements. Again teamwork and social skills were identified, as was respect for other workers, particularly process workers. Some pointed to students learning an appreciation that this is the real world and learning about consequences to actions that were likely more severe than at university: "This is the real world, if you stuff something up and it costs [NZ]\$15,000, that's real money."

Things best learned on campus were about process and attitude rather than about content knowledge as such:

Learning how to learn ... find out about some theory ... know where to look and to interpret those results, the other thing is learning the lingo [i.e., technical language or jargon] that is associated with your area.

Generic research skills, and the personal attributes associated with research such as independence, also were strongly emphasized:

Leaving home and the comforts of home potentially being forced into an environment where it's you and only you and accountability and having to learn how to budget and having to learn, so it's quite a daunting role going off to uni from that point of view. So I think you learn a hell of a lot of life skills, I think it's your first sort of really understanding life skills ... I think that it does come down to social skills and really fitting in with people ... your lecturers, ... there are positions, people that should be respected ... there are key people that you should go to get to gain knowledge and gain understanding of processes ... Research certainly that's a vital component at university being taught first principles, and yeah please teach it more so they don't come and ask me [laughter].

Most of the employers were not familiar with what pedagogies are used on campus, but reported that approaches used to help students learn on placement consisted primarily of exposing students to a wide range of tasks and activities and in some cases, letting a student experience a full planning process from start to finish:

I made sure last year, for example, I had [a student] go through the whole, the whole action plan of the event so from ... pre-event to post-event. And then also setting the budgets and things like that, so, they were involved from the beginning of a process of the event.

Empowering them as an employee and giving them the opportunity to take charge of something, making mistakes, learn from that.

It was reported that students were included in weekly meetings and workshops being offered, and were exposed to some form of induction and/or training as would occur with any new employee. In some cases a detailed job description was provided to the student. Ongoing supervision and regular progress meetings were also mentioned as approaches used to help students learn while on placement. Several employers provided formal performance evaluations for their students as they did with full time staff.

According to the employers, learning on placement came from being exposed to a range of experiences and being supervised and guided through that process. When asked about the things that students have learned while on placement, employers reported soft skills such as self-confidence and communications skills, as well as multi-tasking, prioritizing and time management: “One of the things that struck me is that opposed to learning the actual nuts and bolts and operational stuff was the development as people ... so self-confidence, self-belief ... communication skills.”

The employers also reported that key learning outcomes related to a better understanding of what really goes on in a job (i.e., how an organization functions and the culture of the organization — a reality check):

That one thing doesn't happen after the other, five things happen at once ... I don't think they realized the amount of paper work that happens, they thought they would be out there on the front line, coaching and taking teams as opposed to doing all the stuff that happens before that ... there are very few jobs in life that don't have a tedious boring, pain in the ass element to it ... they won't really have any understanding of what goes on behind the scenes – I think they definitely have an appreciation of that now.

They must pick up the culture of the organization in terms of their attitude with punctuality and work ethic, all those sorts of issues that you would pick up in any sort of workplace and they all differ from work place to work place.

Other comments about on-placement learning related to customer service skills, and the importance of attention to detail.

How does your particular organization function ... how do we treat our ... members ... how do we treat our clients, group of school kids who were doing all sort of activities, or whatever it might happen to be.

You have to pay a lot of attention to detail, and that's something that's sort of missed out when you, only focus on theory.

When asked how they know that the students have learned from their placement, the employers had some difficulty responding. They referred to intuitive knowledge such as knowing in the end which ones they would employ and which ones they wouldn't, but acknowledged that it often came down to the personality and initiative of the individual rather than something they specifically learned while on placement. They also reported that the student's ability to successfully undertake a task at the end of a placement was an indication of their learning, a view that came from observation that the student was now able to complete tasks satisfactorily: “Can they when asked to complete a task that you've shown them or have learnt through exposure, can they get in there and do the job that you asked them to do?”

When considering the things best learned on placement, not surprisingly, the employers focused on the practical and contextual elements of their businesses:

Sometimes what you learn [from] academics, from the textbook, is ... about big business, [but] sometimes, especially [in] New Zealand, we [have a] small business, a small team, that's very different.

Applying a total business management structure, what I mean is undertaking a project in order [to] see it all the way through, from getting the order, processing it, [considering the] shipping logistics or the freighting logistics, and getting it to the point of final delivery.

Here they actually face the real business, what it looks like, because um they [only] have a vague idea of it, but when they're working here they actually experience how to deal with customers and they get confidence with that, and then, some sort of problems like customer complaints or customer misunderstanding like a big argument ... they can't actually teach that in the class. They actually have to go into it and deal with it face-to-face.

Things Requiring On- and Off-Campus Learning

The employers felt that students learn a variety of things from both on- and off-campus learning experiences and that these two complemented and reinforced each other. While theory may be learned on campus, a greater understanding occurs when putting that theory into practice during a work placement. The employers also felt that the placement gave students a better understanding of how organizations work and more realistic expectations. Soft skills were highlighted as important for those beginning a work placement, although employers suggested that these skills are not necessarily taught on campus or on placement, but result from the individual's personality and a lifelong process of learning. Overall, all of the employers felt that the WIL experience gave students an advantage over others for future job prospects based on the wide range of experiences and networking opportunities provided: "The experience they've gained, the people they've worked with, the knowledge they've gained, I mean they have to recognize that as a launching platform ahead of others that haven't done that sort of thing."

The employers identified both soft and hard skills as important for on-campus and on-placement learning:

Life skills you learn them at work and at uni ... it's one of those things it doesn't matter where you are learning them.

Rather than learnt, perhaps there is a crossover between the both in terms of embellishment of what's already been taken on board ... so each is supporting the other. In other words, the computer skills and the hard skills and the research skills that they have learnt here will be embellished and further practiced and refined whatever applied to the knowledge ... it's a two way process.

How Learning Occurred and From Whom?

When asked how they help WIL students learn while on placement one employer focused on student understanding of their core business and the particular work they need to undertake — in this case, retail, and here the importance of the customer was emphasized:

Generally we teach them like [the] basics ... what is important when seeing the customer, [that] the customers [go on] appearances, I mean which clothes they have to wear ... you know, to give a good impression. Basically this is sales, retail sales, so they have to make a good impression ... they have to look professional. [When] the customer asks [a question], they're there to respond quickly and accurately.

Other employers considered student learning more broadly, seeing learning as helping students by adopting more of a mentoring approach through interactive questioning:

When the student would send me through, you know, some of the work that they have done ... I would go back and ask an open question, why do you think we should use [this], why should we reduce the price as a market entry strategy when we've got a niche market? ... I always encourage her to ask questions, what she wants to know, and what she doesn't understand. How to ask question is very important for students, so we can help them.

The employers suggested that the students learned from a variety of people when on placement. As one employer noted, "overall guidance needs to come from the top [for example] what the company is all about, what the structure is, and what our policies are, and then the rest is about working with everybody else." For another employer, learning was derived from working with other staff in a related position, although he noted that "sometimes you learn more from customers, from the feedback [from staff]."

Things that employers considered were common to student learning — whether on-campus or off-campus and on placement included "time management" and "communication skills." When asked to sum up what they think students learn overall from their WIL experience, and how, one employer expressed the view that "probably just being thrown in the deep end and, actually you know, doing a real life marketing plan, or business plan that's gonna be actually used by the organization." A common benefit to students, that employers identified, was the value they get from having to deal with the people involved in their business: "Exposure to and being in direct contact with the customer, the end user, the suppliers ... In retail, the customer is everything."

The employers were asked how they knew students learned from their placement experience. A common response related to the discernable change in student self-confidence about being able to handle issues and problems on their own:

In the very beginning when she first came here ... I asked her why don't you have confidence [in] yourself [and] she said I don't know what this industry is like, I don't know what our clients [are] doing. But now [when] I ask her to do something, she [will say] I'll do it, and then she will find ways to solve the problem. She really know[s] what the property industry is and what [the] real estate agent is doing every day, and so she knows what we need to do to meet their needs.

Integration of Learning

The employers also commented on their perceptions of student attributes when first joining the organization as part of the WIL program and related these to learning in the workplace. Employers were most interested in the students' personal attributes such as willingness and eagerness to learn, good communication skills, initiative, and common sense. Comments were that the desired competencies for a WIL student were: "Common sense, enthusiasm and a will to get stuck in and learn whatever they can." The ability to write in English, computer literacy, good time management and some theoretical knowledge of event and project planning also were seen as important: "Ah, skills for me, is a grasp of the English language, oh and in particular probably written, written more than anything ... and they need to be computer literate."

The employers reported that those things best learned on campus included theory; for example in the case of sport, basic event management theory, knowledge of organization structure and function, planning and project management processes, which would then integrate into the practicum or placement experience: "Some sort of background knowledge of organization structure and how an organization is structured and functions. Then when they get on to the practicum they can see that part of it."

One employer, who had a background in sport sociology, felt that some understanding of sport in a social context should be taught on campus. Basic computer skills, written communication skills and research or fact-finding skills were also reported as important on campus learning.

SUMMARY, CONCLUSIONS AND DISCUSSION

A review of the research findings points to some differences, but remarkable commonality across the three sectors. Here we provide an overview of the findings and discuss these findings in relation to the literature.

There seems to be strong consensus across all three sectors and each cohort of stakeholders that all three parties benefit from WIL, with most benefit accruing to students, who are seen to gain important graduate competencies/skills and career enhancement. Students are thought to pick up a repertoire of skills from WIL, mostly as a result of completing a placement, practicum or IBL project. On-campus pedagogies consist of lectures, tutorials and in the case of science and engineering, outdoor education and information systems students, practical work. The main purpose of such pedagogies is to provide basic content knowledge and theory, with practical, real world work anticipated from the off-campus work placements/practicum or project. Most programs irrespective of the WIL component see themselves as applied in nature, and some employ group work and other pedagogies to foster at least some skill development in the behavioral/soft skills area. However, the stakeholders think any real world experience comes mostly from the off-campus activities. The pedagogies employed off-campus tended to be more informal in nature than the on-campus pedagogies, and consisted of inductions and one-on-one mentoring. There is no consistent mechanism by which off-campus supervisors or mentors seek to employ or develop pedagogies to foster learning. Learning is thus by means of *legitimate peripheral participation* (Rogoff, 1995) with students off-campus acquiring knowledge by working alongside professionals in their area via an apprenticeship model of learning (Lave & Wenger, 1991; Rogoff, 1995). Skills gained in off-campus learning are mostly behavioral/soft 'people' skills such as communication, time management along with an understanding of workplace culture, treating others with respect, a good work ethic, and developing a sense of professionalism culminating in an appreciation of what it means to be a professional in their specialty area (Eames, 2003a, 2003b; Eames & Bell, 2005).

There seems to be clear recognition of *distributed cognition*, in that all stakeholders across all sectors consider that students learn in a variety of ways, from a variety of sources with knowledge resident in a variety of places across an organization (Perkins, 1997). Consistent with this observation, there also is evidence for Haigh's (2008) notion of PGK and PPK in the workplace, and it seems students from all three sectors gain PGK via books and resources in their HEIs, and via documents and formal induction in the workplace. The students also gain at least some of their mentors' PPK – derived from years of experience as professionals, via the apprenticeship model described above. This type of learning is particular to the specific education/learning context, be it the lecture hall or the workplace. Wertsch (1991) also talks of *situated cognition* where the learning is specific to the setting (see also Lave & Wenger, 1991). For example, what the students report learning (supported by the views expressed by mentors and academics) here depends on the setting; they report learning factual material such as content in their HEI, soft skills in their

workplace, and so on. However, consistent with Eames's work (see Eames, 2003a, 2003b), the knowledge they acquire in say a marketing firm, is *specific* to that industry and that firm – the way we do things around here, the acronyms we use and so on. Hence, the teachers (be they lecturers or workplace mentors) employ a variety of Vygotskian psychological tools (Vygotsky, 1978) such as *mediated action*, which involves, for example, the use of language specific to that educational setting and writing in a specific way (e.g., writing or speaking 'scientifically' or in a formal manner when preparing tax audits).

There is no evidence of direct *explicit* attempts to integrate on- and off-campus learning, although all parties *expected* this would occur and agreed it *should* occur. However, integration is *implicitly*, or indirectly fostered by a variety of means – more so for some sectors than others. This means the students may not develop the competency to learn. The principal means for fostering integration of on- and off-campus learning is by reflection and review, via, for example, reflective journals, and assignments/reports post-placement. This integration mostly consists of reflection-*on*-action (Schön, 1991), after the learning activities, and consists of reflection on personal growth, and incident/event deconstruction. In this sense it is similar to the activities of the teaching practicum, which strongly encourages reflection after the event (Allen & Peach, 2007).

Assessment of WIL programs, Eames and Bell (2005) say, should reflect the complexity of the dual and complementary nature of the learning environments. The assessment approaches employed here, as noted above, all incorporate elements of reflection (e.g., assignments, reflective journals, etc.) along with more conventional modes of assessment. The model proposed by Hodges (2008) certainly is sophisticated enough to address all learning outcomes revealed in this work. As Hodges notes, and as is strongly supported in this work, assessment of the workplace learning component in particular bedevils WIL programs. Complex as it may be, it seems if we wish to address the complexity of the learning that occurs in the workplace, we may well need a model that is as sophisticated as that provided by Hodges. If we do not, then we can really only say we are assessing in a piecemeal fashion.

IMPLICATIONS FOR PRACTITIONERS

It is evident from this project that despite coming under an umbrella term, *work-integrated learning*, most programs do relatively little to formally drive the integration of knowledge between the HEI and workplace and vice versa. Whilst there is some logic in suggesting the student has ultimate responsibility for his or her own learning, WIL practitioners argue they are *educators* or at least that they should be considered educators (see, e.g., Coll & Eames, 2000; Ricks et al., 1990), in which case we argue here they must accept ultimate responsibility for the integration through WIL. In doing so, they need to draw upon their training as educators, their personal experiences and research.

The first recommendation is that program leaders should formally state that their WIL programs *require integration of knowledge*, and set this as an explicit learning objective. This objective can leverage a variety of approaches – many of which are already used in WIL such as reflection (this is discussed in more detail below). They then need to develop specific pedagogies/activities that will foster and measure integration. Examination of the model for WIL proposed by Apostolides and Looye (1997b) provides a structure for how we might frame this. In the early stage of WIL we need to equip students with basic content knowledge necessary for their discipline of study, but begin with 'exposure' to the profession, and critical thinking skills. We then need to progress in complexity and sophistication in terms of development of students as reflective practitioners. In a very pragmatic sense this development might be fostered by practitioner visits to the workplace, or employer presentations on-campus. Collier and McManus (2005) suggest WIL programs need to include such strategies that help students see the relevance of on-campus learning and how it might apply to the workplace setting before they go on placement. Such activities are often already part of many WIL programs, but our proposition here is these should be *directly linked* to the notion of integration. In the latter stages the integration would then become more explicit via reflection activities, which are discussed in detail below.

Second, as noted above, the reflection activities/pedagogies reported in this work consist of reflection-*on*-action; that is, reflection after the event. This approach whilst valuable (as noted by all stakeholders here), is but one reflection tool open to us. Schön (1991) proposed a model for reflection based on two approaches: reflection-*in*-action, and reflection-*on*-action. Reflection-*on*-action is defined in the literature as: "The retrospective contemplation of practice

undertaken in order to uncover the knowledge used in practical situations, by analysing and interpreting the information recalled” (Fitzgerald, 1994, p. 67). Atkins and Murphy (1994) take this idea one step further and suggest that for reflection to make a real difference to practice we follow this with a commitment to action as a result. In contrast, reflection-in-action means to think about what one is doing whilst one is doing it (Boyd & Fales, 1983; Greenwood, 1993), and it allows the student to redesign or think about what he or she is doing whilst he/she is doing it. This is commonly associated with experienced practitioners.

Neither of these models of reflection takes account of the importance of reflection-*before*-action, that is, when we plan out *before* we act what we want to do. As might be expected, reflection-*before*-action is preceded by reflection-*on*-action and reflection-*in*-action. There are a number of ways we might develop student skills in reflection-*before*-action. Gibbs (1988) proposes a six stage model. The first stage is to produce a *description* of the event, where a student describes in detail the event they are reflecting on - where were you; who else was there; why were you there; what were you doing; what were other people doing; what was the context of the event; what happened; what was your part in this; what parts did the other people play; what was the result. The second stage involves *feelings and thoughts*, the notion of self awareness. At this stage, the student tries to recall and explore those things that were going on inside their head: how they were feeling when the event started; what they were thinking about at the time; how did it make them feel; how did other people make them feel; how they felt about the outcome of the event; and what do they think about it now? Stage 3 is *evaluation* in which the student tries to evaluate or make a judgement about what has happened, and considers what was good or bad about the experience or what did or didn't go so well. Next is *analysis* in which the student tries to break the event down into its component parts so they can be explored separately. The student may need to ask more detailed questions about the answers to the last stage. Including: what went well; what did they do well; what did others do well; what went wrong or did not turn out how it should have done; and in what way did they or others contribute to this? Finally is *conclusion and synthesis*, which differs from the evaluation stage, in that now the student has explored the issue from different angles and now has a substantial amount of information to base judgement on. The final stage involves the formulation of an *action plan* and during this stage the student should think forward into encountering the event (or similar event) again and to plan what they would do – would they act differently or would they be likely to do the same?

Gibbs model incorporates all the core skills of reflection. Arguably it is focused more on reflection-*on*-action, but it also can be used to focus on reflection *in*-, and *before*-, action. With this forward focus it is consistent with Boud's notion of lifelong learning, and its focus on forward thinking (Boud, 2005; Boud & Falchikov, 2006; Boud, Keogh & Walker 1985). One of the practitioners in the present work stated that the students “don't have time to reflect when in workplace.” No doubt when a student first begins work, this lack of time may appear to be the case. But modern technologies allow practitioners to foster such reflection via say on-line portals or using freeware or third-party software such as Moodle™ and Blackboard™. The portals could be based on Gibb's (1988) model described above, be staged in using the sequence proposed by Apostolides and Looye (1997b), and incorporate Hodges (2008) portfolio assessment approach. One simple task would be an on-line reflective journal that specified all three versions of reflection described above.

The third recommendation involves practitioners working with employers/workplace supervisors to develop more formal pedagogies for workplace learning. The research findings in the present work indicate students do learn many things on placement, but this learning seems very ad hoc. The sole model in practice seems to be the apprenticeship model. We are not arguing against an apprenticeship model *per se*, but suggest that to ensure learning occurs in the way we intend, we need some structure (e.g., to see how mentoring might work best). A framework for learning, based on enhancing student self-efficacy is proposed by Coll, Lay and Zegwaard (2002)

This framework is derived from the work of Fletcher (1990, 1991), who suggests WIL can encourage learning by a process of *enactive mastery* (i.e., as students with sound mentoring are scaffolded through their learning in the workplace they gain in confidence as they 'master' tasks). Coll, Lay and Zegwaard (2002) subsequently looked at the influence of placements on student perceptions of their practical ability. This perception, they argue, enhances student self-efficacy, and thereby practical skills in a number of ways. First, students learn some practical skills at their HEI. Even though they are typically very nervous when they first start in off-campus placements or projects, as they practice under supervision they gain in skill and in self-efficacy. This gain is mediated by good mentoring

enabled by *verbal persuasion* (i.e., positive verbal encouragement from their mentors), and *personal evaluation* of their own capabilities (or other peers deemed comparable in capability).

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