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Towards the Development of a Work Integrated Learning Unit

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ABSTRACT

This paper outlines the development of a Work Integrated Learning (WIL) program for introduction into courses run by the Division of Environmental and Life Sciences (ELS) at Macquarie University. It explores the conceptual learning framework that underpins the approach, and supports such a learning environment. It reviews best practise models from across the world to initiate the development of a program with real stakeholder ownership and a structured curriculum framework that defines the expected learning outcomes for all students. The elements common to successful WIL programs are noted. Potential strategies addressing learning and managerial issues associated with WIL placements detail the way forward for the Division of ELS and possibly the wider university.

KEYWORDS

Work Integrated Learning, Cooperation, Partnership, Learning Objectives, Assessment, Employability, Graduate Skills, Learning framework

INTRODUCTION

The fundamental concept of learning in the workplace, allied to post-secondary education, is not new and covers a wide spectrum of learning activities. It is reflected in historical models of apprenticeships, particularly in the professionally based areas of nursing, education and engineering, in relatively unstructured work experience programs in a broad range of discipline areas and even in education models that use workplace-based case studies in the classroom. These models of learning can be recognised to varying degrees within the credit allocation system of the home institution and may or may not be structured within a defined learning framework. Although the benefits of Work Integrated Learning (WIL) are numerous and well-documented (Harvey, Geall and Moon, 1998), the experience of work is not in itself intrinsically beneficial, rather in order for learning to come from the experience, the program needs to provide a meaningful experience, one that is intentional, organised and accredited by the institution (Harvey *et al*, 1998).

The intent of the WIL project in the Division of Environmental and Life Sciences (ELS) is

- (i) to develop a flexible WIL unit that can be accommodated within existing degree structures;
- (ii) to structure a curriculum framework which will allow objective and subjective evaluation of learning outcomes in a WIL program, and
- (iii) to develop clear guidelines for the student, the industry supervisor and the academic supervisor which will define and facilitate the learning process.

This paper will explore the relevant literature and known models of WIL and use them to propose a model for development and implementation at Macquarie University.

LEARNING THROUGH EXPERIENCE

What each student gains from a learning encounter “depends on their motives and intentions, on what they know already and on how they use their prior knowledge. Meaning is therefore personal...education is about *conceptual change*.” (Biggs, 1999; p13). A conceptual change is more than an acquisition of information or an increase in knowledge, rather it requires a deepening of understanding enabling the learner to perceive the world differently. University learning has been criticised for concentrating too much on an increase in ‘declarative knowledge’, or ‘knowing-about’ things, and insufficiently on professionally relevant understandings or ‘functioning knowledge’ (Leinhardt, McCarthy Young & Merriman, 1995; Entwistle & Entwistle. 1997).

Biggs (1999) suggests that universities most commonly teach declarative knowledge alongside a skill component, or ‘procedural knowledge’, leaving the student to integrate the two in order to develop the functioning knowledge necessary for the workplace. However, the effectiveness of such a learning and teaching culture was challenged as long ago as the 1980’s, by those who support situated learning, in which knowledge is regarded, in part as a product of the activity, context and culture in which it is developed and used (Lave, 1988; Brown, Collis & Duguid, 1989). Such research dovetails with the early work of Kolb and Fry (1975), which culminated in their model of experiential learning. This model outlines a cycle of learning in which students learn by action, and then by a process of critical reflection and evaluation of the experience, leading them to a general principle of action and effect over a range of circumstances.

Learning from experience can also be based on a set of assumptions identified by Boud et al. (1993 p8-14) as:

- experience is the foundation of, and the stimulus for, learning;
- learners actively construct their own experience;
- learning is a holistic experience;
- learning is socially and culturally constructed; and
- learning is influenced by the socio-emotional context in which it occurs.

It is important to realise that tensions exist both within and between these assumptions (Garrick, 1999). From such recognition we can begin to conceptualise the complex mechanics underpinning learning from experience.

Work integrated learning is one example of experiential learning. The experience of work provides students the opportunity to gain and “apply knowledge, skills and feelings in an immediate and relevant setting” (Smith, 2001). Not only does WIL expose students to a concrete experience, it can also introduce students to authentic practices through a cognitive apprenticeship (Brown *et al*, 1989), in which conceptual change is advanced through collaborative social interaction in the culture of the domain (Resnick, 1988). ‘Social situations – such as workplaces – are not just one-off sources of learning and knowing. Instead, they constitute environments in which knowing and learning are co-constructed through ongoing and reciprocal processes’ (Billet, 2001).

‘There is long-standing evidence of the efficacy of learning in the workplace’ (Billet, 2001 p19). The division of ELS is well placed to capitalise on such opportunities and provide all stakeholders with positive outcomes.

EXPECTED OUTCOMES OF WIL

The potential benefits of WIL for all stakeholders can be clearly articulated. However, these do not automatically occur in every program. Positive outcomes must be carefully developed and worked toward actively by motivated participants, whilst consciously avoiding known difficulties.

For students, WIL programs can provide the opportunity to enrich or learn both generic and discipline specific skills, relevant to professional practice. Examples include interpersonal and communication skills, teamwork skills, research skills, project design and working to a defined timeline. The workplace can also provide students with first hand experience of the day-to-day operations of a real business, access to resources not available on campus, establishment of a work history, enhanced employment opportunities, access to an employer’s reference, the establishment of a network of professional contacts and the possibility of ongoing employment. Moreover, the workplace experience can serve to build confidence and maturity, and increase motivation to learn (Harvey, Geall and Moon, 1998; Department for Education and Employment, 1999).

The outcomes for a workplace involved in a WIL program are many and varied, however, the primary impetus is often to complete a specific task or project which may otherwise, not have been resourced. Additional benefits for the industry partner include an opportunity to monitor student performance with a view to longer term employment, an opportunity to train students with specific skills suited to the organisation, access to resources and facilities of the university, access to specific academic staff through WIL networking events, employment flexibility, establishment of a working relationship with the university and an opportunity to engage with bright, energetic and focussed young people with new ideas to boost creativity and innovation in the workplace. Furthermore, many institutions are proud of their relationship with their local university and, for altruistic reasons alone, simply wish to offer placements to help out students and the university (Harvey *et al*, 1998; Shipley, 2001).

WIL programs also offer a number of benefits to the university. These include making their degree programs more attractive to prospective students and providing a relatively straightforward mechanism to form new partnerships with industry. These often lead to further involvement of the industry partner in other activities such as consulting and collaborative research and development. In many cases, such a program also improves graduate employability and student motivation for lifelong learning (Harvey *et al*, 1998; Department for Education and Employment, 1999).

Delivery of WIL programs leading to the realisation of potential benefits for all stakeholders is not a simple task, and there are many different WIL models worldwide attempting to address these issues.

EXISTING WIL MODELS AND FEATURES FOR SUCCESS

As the value of work-integrated learning continues to gain global recognition, there is an increasing abundance of models and processes used in its implementation. Many Australian universities already have WIL programs. In 1991 the joint Business/Education Round Table estimated that over half of all Australian first degrees had some workplace experience component (Business Higher Education Round Table 1991). ‘In 1998, twenty Australian universities offered WIL opportunities involving some 10,000 students and valued at \$60 million’ (Jancauskas *et al*, 2000). ‘More work placements, however, do not mean better quality of provision’ (Martin, 1997 pp77).

Table 1 summarises the main types of models currently in use in WIL programs in tertiary institutions across the world. Its purpose is to reveal the variety between working WIL programs, however it should be recognised that in reality, ‘workplace learning programs do not lend themselves to such neat compartmentalisation’ (Hawke et al, 1998 pp i). There is considerable overlap between models, with certain benefits and shortcomings common to many. It is from these commonalities that we can learn how to design the best WIL model/unit for the Division of ELS, with the flexibility for wider application across the University.

Table 1. Summary of WIL models, their structure and their disciplines of application (The tabulation uses the classification system of Martin (1997) and a framework of recommendations developed by the PAS Task Force (Victoria University).

Model	Characteristics	Examples
Pre-course experience	Work experience as a pre-requisite for entry	Farm work for agriculture classes
Sandwich course	Periods of work experience between years of a course, usually complete a 12 month ‘thick’ sandwich or two 6 month ‘thin’ sandwiches	Engineering courses <i>Sheffield Hallam University</i> <i>Middlesex University</i> <i>Brunel University</i>
Co-operative programs	Periods of work experience that may be integrated into the overall curriculum, designed both to integrate theory and practice and improve graduate employment.	Business, science and engineering courses <i>MQ - International Interns</i> <i>UWS Co-op programs</i> <i>RMIT</i> <i>QUT – Science & IT</i>
Cognitive apprenticeship or Job shadowing	Emphasis on observation and absorption of organisational culture of the workplace.	Law and political science courses
Joint industry-university courses	Courses jointly developed with and funded by an enterprise. Uses enterprise staff as teachers/assessors.	Engineering, business, many VET courses
New traineeships and apprenticeships	Flexible arrangements based on a registered training agreement and structured on-the-job or off-the job training.	Many VET courses
Placement or practicum	Extended periods in work settings to learn skills and gain experience of requirements of future work.	Medical, nursing and education <i>UTS Engineering Internships</i> <i>MQ Chiropractic Internships</i>
Fieldwork	Short periods (e.g. one day a week) of fieldwork in an agency to observe and learn about the organisational culture of the workplace.	Social work, science, geography courses
Post-course internship	Work experience after completion of the course	Medicine and law <i>UTS – Dip. Scientific Practice</i>

Examples of WIL models that are well-planned and resourced, effectively addressing the needs of all stakeholders, in particular those of the students, are found at the University of Waterloo Canada, Middlesex University UK, Long Island University (Southampton) US, the University of Birmingham UK and the Royal Melbourne Institute of Technology (RMIT) Australia.

Generally, effective WIL models enable participants to address issues that fall into two broad categories: learning and management (specifically exemplified by the ‘Model of Best Practice for

Work-based Learning' developed by Flinders University). These programs also highlight the importance of forming and sustaining effective partnerships within a structured but flexible curriculum framework. The idea of an evolving partnership between stakeholders is useful to conceptualise how WIL can work in certain models. Smith and Betts (2000, p600-2) use the principles: collaborative self-interest, transparency and negotiation to explain the basis of effective work-based learning partnerships. In our view, these are the types of models that best support and foster learning in the workplace, having the greatest potential to produce positive outcomes, mentioned previously.

One key notion about learning at work is that it is closely related to 'individuals (subjects) apprehending experience, reasoning, or logically thinking through their work experience and giving that experience 'meaning'' (Garrick, 1999, p226). This supports the development of a curriculum framework for WIL as 'the bases for learning in workplaces are not *ad hoc* or without structure. They are formalised and structured by the goals, activities and culture of the work practice' (Billet, 2001 p18).

Clear articulation of the expected outcomes to the student, their supervisor and the industry partner, is a key element in the development of a successful WIL program. Once the generic and discipline-specific outcomes are negotiated and incorporated into the WIL project, and clearly articulated and understood by all stakeholders, their attainment can be assessed. The assessment of student learning outcomes is a particularly important aspect of WIL programs, it can provide a mechanism for students to reflect upon their strengths and weaknesses, their progress and achievements, and can help with their motivation. Smith and Betts (2000) argue that the 'quality of learning is not dependent on the quality of the experience, but on the quality of the process of reflection in relation to the agreed learning outcomes'.

It can be argued that 'there is no single model of successful practice' (Martin 1997, pp78) and programs have to be tailored to suit the particular needs of the stakeholders involved, whilst considering all the available resources. The challenge for ELS is to develop a flexible program with wide applicability across the spectrum of more generalist degrees, whilst maintaining a critical attitude to its pedagogical value.

THE WAY FORWARD FOR ELS

The successful introduction and sustenance of a WIL program requires commitment by all stakeholders and a clear belief in the positive outcomes and relationships that can be achieved. Models that focus on providing a quality learning experience for the student, and that also meet the needs of other stakeholders are, in our view, the most successful. To realise these ends, a Divisional Working Party has been established, consisting of those who are committed to the WIL concept, whose role it is to oversee the project's implementation and development. The responsibilities of the Working Party will be to:

- Lead the process of achieving ownership amongst the staff of the Division, for the design, development, and implementation of the workplace learning curriculum, and the assessment of student learning outcomes. This phase is particularly important as convincing staff and students of the benefits of a new approach to learning, can be a difficult aspect of introducing curriculum change. It is anticipated that such changes may mean that some university (and industry staff) may have to adjust to a new mindset, one that recognises that learning can occur in contexts other than formal degree programs.
- Determine a curriculum framework that is flexible and robust enough to accommodate both the existing degree structures, and the variety of needs and opportunities presented by

industry, and required by students. A template is currently being constructed, in which this flexibility can be maintained and the quality of the student learning experience maximised. When complete it will provide the framework for units that offer WIL on a one, two, or possibly four-day a week placement basis throughout a semester or as a block placement between semesters. The new WIL unit(s) will be introduced as an elective for all existing degree programs offered by the Division, and as a core unit for the new Bachelor of Health program currently in development.

- Oversee the development of a range of resources, and preparatory workshops / discussion fora, for students, university staff and industry partners, in which the intent of the work placement, the type of work-based experiences that will support student learning, and the policy, process, and roles and responsibilities of all stakeholders for ensuring constructive student learning are addressed. The resources will also provide the structure within which the student can reflect on and articulate learning goals, actions and their achievements, and ultimately be used by the student to construct a personalised learning portfolio.
- Construct an effective and flexible framework for assessing student learning outcomes. Such a framework will,
 - ensure that the assessment tasks are relevant to the placement and negotiated learning outcomes;
 - enable students to consider their progress and attainments, with respect to both the product(s) and process of learning, through self-assessment and critical reflection;
 - ensure that both the academics and workplace supervisors play a role in monitoring and reporting on student learning outcomes;

The assessment process must be valid, rigorous and consistent with university standards (Gray, 2001).

- Negotiate a WIL management and support framework for the Division, the University and future industry partners, which reduces the disincentives of bureaucratic barriers for the latter (Hawke et al, 1998), and recognises the value and importance of coordination and management roles of participants. In so doing, address the resource implications for the University and the workplace, and include the management effort involved and the resources or budget allocation required to administer the process. This framework will also ensure that students are supported throughout their placement, to guarantee that their learning outcomes can be achieved in a safe and constructive environment.
- Ensure that there is objective and informative and evaluation of the learning outcomes derived from WIL, and their value to all stakeholders (Brennan & Little, 1996), and that the processes embedded in the WIL framework to prepare students for the placement and support them during this time are effective.

Work Integrated Learning has the potential to provide direct and significant benefits for students, workplaces, universities, and in turn, the wider community. With the appropriate development of a WIL program for incorporation into degree programs within the division of ELS, and possibly across the university, this initiative will not only enable our students to undertake a new and valuable learning experience, but also has the potential to develop valuable links with industry.

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