Discussion Paper

An Innovative Multidisciplinary Model for Work-Placement Assessment

Abstract

This paper presents an innovative assessment model developed for application in multidisciplinary workplace settings. The model was developed to address current trends in higher education surrounding workplace assessment for students undertaking Swinburne University of Technology’s Industry-Based Learning Program (IBL) within the Faculty of Life and Social Science. IBL is an optional program enabling students from science (biotechnology, public and environmental health and biomedical sciences), multimedia, games, social science, psychology and psychophysiology to undertake a 6 or 12 month paid learning experience in a discipline relevant workplace. The paper will discuss the strategy adopted to formulate the model. The process included reviewing an existing model of assessment developed and applied over many years in one discipline area and identifying how this could be adopted for use in multidisciplinary work place settings. The strategy is aimed at enhancing the student’s ability to provide greater evidence of the development of graduate attributes and employability skills, whilst achieving greater consistency and clarity amongst academics and industry partners regarding the requirements for workplace assessment. The assessment tool was trialled in 2010. The paper will also present some of the outcomes and learning from its first application in the various industry settings.

Keywords: assessment, practices, Industry-Based Learning, multidisciplinary, work integrated learning
Introduction

Industry-Based Learning (IBL) is an optional 6 or 12 month paid placement, undertaken by students midway through their undergraduate bachelor degree program, in a workplace relevant to their studies. The program has, for the last 45 years, been an accepted part of many of Swinburne University of Technology’s undergraduate programs. Within the Faculty of Life and Social Science, students have the opportunity to participate in the program from the discipline areas of science (biotechnology, public and environmental health, and biomedical sciences), multimedia, social science, psychology and psychophysiology.

The Australian Universities Quality Audit (AUQA) Good Practice Database broadly describes the program as follows:

Academic units are responsible for the development and management of IBL programs in each discipline. Within the academic units, IBL coordinators lead, manage and administer the placements on behalf of their respective units. Swinburne supervisors, in each discipline, establish and monitor the learning outcomes of each placement. Assessment of students involves a range of modes including written workplace reports, presentations and reflective logs and diaries. (Australian Universities Quality Agency, 2006, para.1)

The theoretical framework that supports the program is based on Kolb’s experiential learning model, where students are exposed to many concrete experiences throughout their Industry-Based Learning placement and are involved in observation and reflection. Students are also able to reflect on these experiences when they return to the classroom (Kolb, 1984).
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The integration of industry experience within Swinburne has been a key strategic focus for the University for a number of years. Swinburne’s ‘Professional Learning Model’, provides a range of opportunities for students to engage in activities, such as internships, work placements and capstone projects aimed at improving graduate employability (Swinburne University of Technology, 2011).

This strategic focus is particularly driven by the growing pressure on the Australian higher education sector from government, industry and the community to produce work-ready graduates that are prepared in their relevant fields for professional practice (Patrick et al., 2009). McLeannan & Keating (2008) recognise work based programs as ‘….unique and valuable learning environment for students”. (Patrick, et al., 2009 p.4). A measurement of employability outcomes also plays a significant part in Federal Government funding allocations to the Australian higher education sector, with recent research indicating that students who have undertaken a work-integrated learning experience or skill development during their studies were more likely to have achieved employment within their chosen field (Orrell, 2004).

In the delivery of this commitment, the University has spent considerable time and effort over recent years evaluating and updating its approach to co-operative education programs. This includes ensuring initiatives aimed at improving cooperative education programs and the employability of graduates are included in faculty strategic plans (Dunn & Pocknee, 2009).

**Project Background**

The Faculty of Life and Social Science is a multidisciplinary faculty, which was formed as a result of a university restructure in 2004. As a faculty strategic initiative, a Cooperative Education Committee was established to identify and address academic and
administrative issues relating to the provision of cooperative education or work integrated learning (WIL) programs, which includes IBL. Data provided through the university’s quality improvement processes, and anecdotal evidence gathered through academic and administrative engagement with the program, raised concerns regarding the consistency, clarity, appropriateness and currency of the academic assessment practices for students participating in IBL within the faculty. Examination of the assessment requirements highlighted that one generic assessment model was being applied in the form of a “written report” in 7 of 8 discipline areas and a discipline specific model involving the submission of a “portfolio” was being applied in one discipline area in the faculty. Assessment for the IBL unit is based on a pass or fail.

Comments had been raised by both students and employers about the value of the generic “written report”, with academics questioning whether this approach provided sufficient evidence of the development of both technical and generic attributes during their workplace experience. Administratively, concerns were also raised regarding the resource implications of applying the different models of assessment, particularly when the students were enrolled in the same unit code as a result of the faculty restructure. To address these issues, a project group was formed.

**Project Overview**

The aims for the project were:

- To determine the strengths and weakness of our current models of assessment
- To develop an assessment model for multidisciplinary workplace setting

A stakeholder committee with representation of academics from the various discipline areas within the faculty, the cooperative manager responsible for the administration of the IBL and the faculty’s educational advisor was established.
The role of the stakeholder group was to assist in defining the nature and scope of the project, provide educational expertise with respect to the evaluation of assessment practices, gather information and provide feedback on current and proposed methods of assessment from employers, students and other academics involved in the program.

The formation of a stakeholder group was considered important to help facilitate the success of the project by engaging the relevant parties in the process of seeing the need for a change in current practice and ensuring that appropriate time and support would be made available to assist with making the new change (Taylor, 2003).

Given the time and budgetary constraints of the project, it was decided that an informal evaluation of the processes and outcomes of the current methods of assessment used within the IBL program would be undertaken to address the project aims (Patton, 1997). This included a review of literature relating to assessment practices, analysis of stakeholder feedback, and a SWOT (Strength, Weakness, Opportunities and Threats) analysis of the current assessment methods being used (Gordon et al., 2000). These areas are discussed in the following sections.

Assessment Practices in WIL

A review of literature regarding assessment methods in work integrated learning identified some key challenges. In particular, The WIL scoping study (Patrick, et al., 2009 p.42) recognised that the ‘development and implementation of effective assessment methods were key issues in higher education’. The study highlighted the key concerns being the ability to maintain academics standards, ensuring the relevance and consistency of assessment processes, determining responsibly for assessment and deciding what should be assessed when on a work placement and the processes by which the assessment is supported and managed.
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The report also identified that a range of methods are being used in assessing WIL in Australian higher education institutions including reflective journals, portfolios /ePortfolios, workplace mentor/supervisors reports and workplace projects ‘…..aimed at providing value to employers and students.’ (Patrick, et al., 2009 p.40). The main conclusion regarding assessment methods in WIL programs was a recommendation that the methods should encourage reflection and integration of theory and practice, as suggested by Jorgenson & Howard (2005), as well as taking into consideration the resourcing and employer commitment and involvement, ensuring the approaches are constructively aligned with the WIL learning experience as well the professional program in which it is situated (Patrick, et al., 2009).

Other literature surrounding assessment also raised the need to ensure that the determination of learning outcomes and the related assessment practice of cooperative education programs incorporate the differing views and needs of the stakeholders (students, employers and the educational institution), and involve a combination of performance based measures that employers consider important to develop competencies in or “hard skills” often required of science graduates (Zegwaard, Coll, & Hodges, 2003).

Additionally, Hodges et al. (2004) highlight that student learning must also involve more than skill acquisition and workplace competencies, but the development of “soft skills” which relate to the practical application of theoretical principles and the students behavioural development. Assessment practice should be designed to include evidence of what students learned about workplace culture, norms of practice and behaviour reflecting evidence of the development of wide range of graduate attributes, not just those relating to technical competencies. The employer or mentor should also authenticate evidence of the development of these soft and hard skills.
Consideration of these issues suggested that a further examination of the use of portfolio’s and reflective practice was warranted.

**Portfolios and Reflective Practice**

Portfolios, as a method of assessment in cooperative education and work integrated learning activities together with reflective practice, are becoming more commonly cited in literature. A review of literature, although not exhaustive, informed the use and value of the application of these methods for students participating in science, social sciences, multi media and psychology (in accordance with our multidisciplinary faculty).

The review did reveal some interesting points. Messus et al. (2006 p.134) define a portfolio as a ‘….collection either of a number of actual piece of work or representations of pieces of work….’ and further explain that it is impossible to give a simple and unequivocal description of a portfolio in education, as the characteristics of the tool vary according to how it is used and it is a very flexible tool which can be tailored to specific education context.

However, Messus et al (2006) describe the general characteristics of a portfolio to be student centered, competence-orientated, cyclical with regard to action and reflection, and multimedia orientated. They further make some useful points regarding the general application of characteristics, highlighting that students should learn from the experience of the development of the portfolio, with the tutor’s role to scope what the student can operate within, but giving the student as much ownership as possible to determine what it contains (Meeus, et al., 2006).

They also observe that it would be over ambitious for a portfolio to represent all competencies of which the course is equipping students for, but better to focus on a limited number, particularly those not yet mastered. In doing do, students must be motivated to
undertake an analysis of their strengths and weaknesses, have the ability to draw up a learning plan, and reflect on the series of actions that demonstrate the competences achieved.

Buckely et al. (2009) discuss the introduction of portfolios as a learning and assessment tool, noting they are becoming more widespread across a range of health professionals as a form of assessment in undergraduate training. A systematic review of 69 studies, examining student and tutors perception of the effect of portfolio on student learning across a range of discipline areas (including medicine, nursing and other allied health professional areas), found that the strength and extent of the evidence base for the educational effect of portfolios in undergraduate settings is limited. However some studies did find an improvement in student knowledge and understanding, particularly the ability to integrate theory and practice, the ability to learning independently, great self-awareness and encouragement to reflection (Buckley, et al., 2009).

Biggs (2003) suggests that reflective practice provides the opportunity to reflect on one’s learning and philosophical position, legitimise one’s own reflection by clarifying an adopted position and relevant experience and collaborate with peers to reflect on one’s learning experience.

Mann et al. (2009) make some interesting observations with respect to the approaches to reflective practice amongst health professional education as a form of developing professional competence. During a systematic review of literature, involving 29 studies regarding reflective practice, it was commonly suggested that guidance and supervision of reflection are factors perceived to be of benefit to learners. It was also found that although there is a key assumption that reflection will enhance competence, there is no evidence to support or refute this assumption. While there does not seem to be an agreed approach to reflective practice, it appears that professionals do reflect in different ways. Mann et al (2009)
consider that the result of this reflection may ultimate be of benefit to developing competence.
The key points from this review informed the next stage of the project.

**Swot Analysis**

A SWOT analysis was used for this project as it was considered a planning tool that would assist in identifying the strengths, weakness, opportunities and threats that lie within any environment or organisation (Gordon, et al., 2000). It was also a concept familiar to all project group members who considered the tool to be efficient and simple to apply.

A SWOT analysis was undertaken by the group to identify the strengths, weakness, opportunities and threats of the “written report” being applied to assess students undertaking IBL within the faculty (refer Table 1). Consideration was given to the key issues and constraints regarding approaches and strategies used in the assessment of WIL identified in the literature and feedback received through consultation with stakeholders informally and formally through the universities quality assurance system.

**Table 1**

*SWOT Analysis*
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<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td>Single document</td>
<td>Unfocussed document</td>
</tr>
<tr>
<td>De facto portfolio status</td>
<td>Inconsistent standard</td>
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<tr>
<td>Some use of reflective statements</td>
<td>Learning outcomes unclear</td>
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<tr>
<td></td>
<td>Lack of skill and experience documentation</td>
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<tr>
<td></td>
<td>Lack of consistent reflective process</td>
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<tr>
<td></td>
<td>Lack of coherence (covers 1 year)</td>
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<td></td>
<td>Various quality in assessment</td>
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<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
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<tbody>
<tr>
<td>Expansion of reflective processes</td>
<td>Poor student and academic engagement</td>
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<tr>
<td>Smaller manageable sections</td>
<td>Potential loss of employment opportunities</td>
</tr>
<tr>
<td>Redirect effort to portfolio</td>
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<tr>
<td>Clear tabulated experience and skills</td>
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This process, identified that the “written report” whilst encouraging students to reflect and report on the range of generic attributes and tasks undertaken during the IBL year had its problems. One such issue was that the reflective component was not well understood by students and the guidelines associated with completing the report were fairly cumbersome and required significant renewal. The general nature of the report approach meant that a wide range of styles and content were delivered, and there was considerable variation in the quality and presentation of these reports.

The dual aim of the report was to document the student’s work placement experience for the purpose of assessment, and to also as act as a record of their experiences. The written report, therefore assumed the role of a “de facto” portfolio. This further suggested that the assessment method should adopt a portfolio format. To do this, we drew upon experience from the existing portfolio approach currently applied in the faculty.

**Existing Portfolio Approach**

An examination of the portfolio approach currently adopted for the public and environmental health discipline revealed that the assessment practices involved a combination...
of performance based measures. These mapped the development of competencies or “hard skills”, and reflective written reports to enable the assessment of “soft skills”, relating to practical application of theoretical principles and the student’s behavioural development (Zegwaard, et al., 2003).

The portfolio involved students in the following activities:

- Writing a series of structured reports based on a range of activities or topic areas which are representative of their professional discipline area
- Developing learning objectives in relation to these activities, showing evidence of involvement, reporting on whether they met their own learning objectives and providing reflective summaries of these experiences
- Developing an “Experience Record Sheet” which provides evidence of the completion of a number of discipline specific tasks, at an observed, supervised and unsupervised level (independent)
- Mapping their graduate attribute development, in consultation with the academic and workplace supervisor in the form of completing a pre and post “learning benchmark”
- Submitting the cumulative collection of work as a portfolio.

To increase the authenticity of this approach, the employer or mentor is required to authenticate the portfolio (Hodges, et al., 2004).
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This approach to assessment had been developed over many years through negotiation with relevant stakeholders. It had been used to try and ensure students were exposed to a range of learning activities in order to maximize the placement experience and enhance graduate employability. Feedback from stakeholders involved in the this type of assessment indicated strong support for this model (Dunn, 2006).

An analysis of this model also revealed that this approach addressed a number of issues identified by the SWOT discussed earlier.

This approach was then examined to ascertain its transferability to other discipline areas in the faculty.

**Transferability**

The student work placement position descriptions were used as a basis for identifying the types of technical skills which could be mapped to provide evidence of completion in the form of the “Experience Record Sheet”. These were then used to identify topics or activities that could be used as a basis for a series of structured written reports which were representative of the professional discipline area, as described earlier.

Informal consultation with students, employers and industry supervisors helped inform this mapping. This led to a strong support for the portfolio model and narrowed down the scope of the overall number of documents involved.

The process identified that the Experience Record sheet was readily adaptable to a range of workplace settings as it could be easier adapted to reflect tasks or duties undertaken as part of the students work placement description.

Similarly, the topic areas suggested for the structured reports were readily transferable to the range of discipline areas, as they involved generic topics or activities directed at
providing evidence learnt about workplace culture, norms of practice, and development of professional competence (Hodges, et al., 2004).

For example, topics include reporting on

**Orientation** - the organisation and the organisational structure that the student operated within

**Professional Involvement** - a professional group meeting or seminar and its relationship to the professional practice area

**Workplace Activity** - the development of a technical competence undertaken as part of the Experience Record Sheet

**Project Work** - a special project that developed both technical and graduate attributes.

This resulted in an agreement to apply the framework used for the existing portfolio approach to the other discipline areas. The format for the series of written reports and the Experience Record Sheet was adapted for each of the areas by providing examples of discipline specific workplace activities that could be reported on. To facilitate this further, students, in consultation with industry and workplace supervisors were encouraged to develop their own topics and activities relevant to the workplace setting. The Learning Benchmark, the final component of the portfolio was a generic document, reflecting the university graduate attributes which was applicable to all disciplines. See figure one for the key elements of the portfolio.
Outcomes

The portfolio approach was trialled as an assessment model for a range of multidisciplinary work place settings in 2010. This included science (biotechnology, and biomedical sciences), multimedia, social science, and psychology and psychophysiology positions.

Informal feedback from academic supervisors to date has generally been very encouraging. It was commonly considered that the quality of the reports had improved from previous years, with greater evidence of graduate attribute development, particularly those relating to the development of technical skills. However, this appeared to be more evident in science based positions where it was considered that the mapping of activities for the Experience Record Sheet could be more easily determined. Despite this it was encouraging to observe students from multimedia and social sciences listing various activities that they considered representative of their workplace experience.
Preliminary feedback from industry supervisors and students has also been encouraging with a general consensus that the assessment requirements are clear and reasonably straightforward to follow. In some cases however, there did appear to be a lack of understanding regarding the role of the reflective component, and the development of students own learning objectives with respect to the various written reports. Feedback also indicated that in a few cases, students did not appreciate the flexible nature of the topics that could be selected for the written reports and this was also not fully understood by some academic staff. This indicated that professional development, surrounding the pedagogical approach adopted for the new assessment model for both academic and industry supervisory staff should be explored as a means to address these issues.

From an administrative perspective, the new model had contributed to greater efficiencies as it enabled all documentation regarding assessment to be aligned in a consistent manner.

As discussed, the findings to date are preliminary and informal with the new approach to assessment warranting further evaluation.

**Project Learnings**

Resource issues for staff of universities and employers involved in work integrated learning, especially constraints surrounding workload and time are widely documented (Patrick, et al., 2009). This project was no exception to these issues.

Mindful of these constraints, the project aimed to use all stakeholders’ time as efficiently as possible, without compromising the integrity of the project. This was done by:

– Operating all meetings as ‘outcome focused’ meetings

– Using already documented evidence regarding best practice approaches to assessment in work integrated learning
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Examining existing resources that could be applied to address the issues arising during the consultation process.

Ideally, wider and more rigorous consultation with all stakeholders regarding the proposed new methods would have been useful to help refine and improve practice. However, it is anticipated that ongoing quality improvement processes will continue to inform the project.

Conclusion

The innovative assessment model was developed for application in multidisciplinary workplace settings. The model aimed to address current trends in higher education surrounding workplace assessment. In particular, it was an effort to improve the students’ ability to provide greater evidence of the development of graduate attributes and employability skills. This was achieved at the same time as establishing greater consistency and clarity amongst academics and industry partners regarding the requirements for workplace assessment, whilst improving administrative efficiency. While the assessment model would still benefit from further evaluation and refinement, early indications suggest that the model is achieving the intended aims, particularly those related to providing evidence of graduate attribute development.
References


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