Work-related learning in undergraduate non-vocational courses: a case study

Lynn Naven
Project Research Officer

Margaret Berrie
Work Learning Officer

Irene Bell
Project Manager

Aiming University Learning @ Work Project, University of Glasgow

Introduction

This case study focuses on work-related learning (WRL) initiatives developed as part of the Aiming University Learning @ Work (AUL@W) Project. The project defines WRL as encompassing "the higher order attributes, skills and understandings students gain throughout the course of their degree, from a broad range of activities in, or related to, the world of work, which will enhance their learning, progress into, adaptability for, and success in, their chosen careers."

The AUL@W Project was a partnership project between the University of Glasgow, Glasgow Caledonian University and the University of St Andrews in Scotland. Its aims were to create a cultural and institutional shift in the provision of WRL to enhance undergraduate students' long-term employability, by embedding WRL in degree courses, particularly in non-vocational disciplines (**www.gla.ac.uk/services/aulw**).

The project consisted of three phases, each underpinned by research, embedding WRL activities, and developing work-related opportunities.

Phase I (Feasibility) comprised a feasibility study to provide the evidence base for the following phases, and commencement of a longitudinal study of transitions from higher education into employment across the three contrasting, culturally distinctive Scottish universities. Links were also made with potential collaborators from business, industry, the voluntary and public sectors.

Phase II (Implementation and Best Practice) consisted of supporting the implementation and development of the original six pilot WRL initiatives in Biosciences, Business and Management, History, Mathematics, Physics and Psychology, and development of work-related opportunities complementary to the curriculum.

Phase III (Establishing Models for Sustainability) involved further development of existing and potential new pilots to be sustained beyond the funding period, evaluation of pilot activities, and production of WRL Guidelines for the HE sector and WRL development materials for academics, students and employers.

This case study focuses on two project WRL pilots in Biosciences at the University of Glasgow and Management at the University of St Andrews, detailing some of the evaluation results.

Pilot initiatives

Biosciences pilot (Business and the Biosciences Module and commercial projects)

The Biosciences pilot comprised two elements. An intensive two-week 'Business and the Biosciences' course was developed for Level 4 undergraduate students, to provide a sound understanding of the nature of businesses based on bioscience knowledge and research; their opportunities for innovation; and constraints related to regulatory requirements, intellectual property and ethical issues and the market; and to allow students to develop an idea for a new biological product or service into a full business plan. Specific learning outcomes focused on applying traditional business methods to the development of

bioscience products and developing understanding of the ethical and regulatory framework in this area. The course, focusing on team-working and problem-solving, was delivered, via seminars, by guest lecturers from local bioscience companies, by staff across the University, including the Student Enterprise Unit, and by business experts from Scottish Enterprise (**www.bioscience.heacademy.ac.uk/ftp/TeachingGuides/studentresearch/tatner.pdf**).

Students could also opt to undertake a project examining an aspect of bioscience commercialisation on behalf of local biosciences businesses as their Level 4 Honours project, in place of the usual lab-based project. While students taking the optional Business and the Biosciences course did not have to undertake a commercial project, the course was compulsory for students choosing to complete projects. These projects formed part of the students' final-year assessed tasks.

The course is assessed formatively (50%) on a reflective diary, individual report, team presentation of the group business plan and event management task, and summatively (50%) through a final examination, which indicated that the students performed comparably well on this module in relation to the other three equivalent courses taken at Level 4, therefore validating it as a suitable option at Level 4. Subjecting it to assessment conforms to findings from the project research with undergraduates that they place value on, and are more likely to engage in, assessed and accredited WRL (**www.gla.ac.uk/services/aulw/research/**).

Management Pilot (Enterprise and Creativity Module)

An interdisciplinary 'Enterprise and Creativity' module was introduced in the School of Management at the University of St Andrews to provide the opportunity for Level 2 students to enhance their creativity and enterprise skills. Students from Management, Anthropology, Modern Languages and History registered for the module, which comprised lectures from academic staff in science and arts disciplines with an entrepreneurial background or interest, and from visiting entrepreneurs when possible.

Students worked in tutorial groups to develop a group enterprise project, which was presented at a university-wide 'Fair' at the end of the module. This accounted for 30% of the overall assessment. Students also completed weekly critical summaries, reflecting on the relationship between enterprise theories and their projects and learning. These accounted for a further 30% of the assessment. The remaining 40% was for a written examination.

An innovative element of the module was the use of student coaches to run tutorials. These were Level 4 Management students who had previously completed enterprise modules. Their employment offered them an opportunity to enhance their own employability skills, while contributing to the same goal for Level 2 students.

Evaluation findings

Enhancing student employability through the curriculum

Biosciences students who completed the Business and the Biosciences course and a commercial project felt it had given them a good opportunity to learn about business and some felt it had significantly enhanced their future employability. Added benefits highlighted were the development of more specific skills and understanding by virtue of developing a business plan, and finding out about business and how organisations work, in terms of regulations and technicalities. Such learning and working, supported by employer and client feedback, have been shown to engender a sense of accomplishment in students because they produce realistic outcomes similar to those required in the real business world (Ehiyazaryan and Barraclough, 2009). A by-product of this has been found to be increased confidence, thereby aiding future employability through increased self-efficacy, one of the elements proposed by Yorke and Knight (2006) in their USEM account of employability. All students completing commercial projects reported a notable sense of achievement derived from carrying out market research in addition to exposure to a 'real-life' experience and contacts for potential future employment. The only criticism by some students concerned the brevity of the course itself, which has since been addressed through securing the involvement of more academic supervisors to enable the course to be extended, reorganisation of the course content and changes in the methods of delivery to be more enquiry-based and reflective. This included reflective diaries, firstly on the Open University's 'My Stuff' software, and, latterly, using the e-PDP tool 'Mahara'.

Students taking the Enterprise and Creativity module reported high levels of satisfaction with the course, the project, the interdisciplinary nature of the initiative and the experience of the practical application of theory. "I would love to see this course expanded ...

within every subject there are opportunities to cross the theory-based knowledge with something practical, hopefully with some creative teachers or guides who can open our eyes onto a wealth of other experience" (Level 2 student).

This module's success derived, in part, from students' shared experiences in developing an innovative project and bringing it to a tangible outcome. Students felt they had benefited from the variety of learning styles and activities incorporated into the module, such as group work, practical projects, input from guest lecturers and entrepreneurs, and mentoring from senior students. The interdisciplinary nature of the module produces outcomes for students in terms of increased awareness and knowledge as a result of their different perspectives, thus fitting well with Experiential Learning Theory (Kolb, 1984). It is also argued that embedding a broad range of learning styles, activities, and opportunities can aid student engagement by creating relevance to the wider world and stimulating ownership of the learning process by students (Drew & Myers, 2005).

Skills and attributes enhanced by the group project work were identified by students as:

- people skills
- improvising, flexibility, adaptability, open-mindedness
- organising, dealing with unforeseen problems
- planning, working to deadlines
- presentation skills.

Students felt they had developed more confidence and learned important lessons. Completion of the weekly critical summaries was valued because "they made me think about what actually was said in the lecture. Sometimes I didn't fully understand the relevance of the lectures until I tried to write my critical summaries" (Level 2 student). Some students, however, expressed the need for more guidance on writing the critical summaries. The majority of students would recommend the module to students of any subject discipline, demonstrating the potential transferability of the initiative.

Although Level 4 student coaches were primarily employed to moderate tutorials and mentor Level 2 students throughout completion of their group projects, they cited significant benefits to themselves, in terms of the skills they gained: "It was a significant part of my academic experience and offered the opportunity to acquire skills that cannot be acquired in any regular modules."

Overall, they found the experience of coaching 'rewarding' and 'fun' as well as instructive. They commented that leading tutorials "forced [them] to more fully round out [their] own understanding of the processes involved". They also believed their role would enhance their future employability: "The experience and further familiarity with business development has given me a leg up on other candidates [for jobs] who did not have the same chance" (Level 4 student coach).

The challenges highlighted by coaches also served as learning experiences for them, such as dealing with 'free-riders' in groups or disciplining students about timekeeping and issues with attitude.

Broadening staff horizons within the curriculum

Academics were convinced of the benefits to students. In Biosciences, they reported positive feedback from students who had completed a commercial project and, in one case, a Biosciences student was offered a permanent position as a result.

Lecturers on the Enterprise and Creativity module felt that the course benefited Level 2 and Level 4 students alike, in preparing them for their future careers. Commenting on the achievements of students over the course of this module, one lecturer stated: "I really enjoyed being part of the module. It was very satisfying to see the projects at the end – they were all amazing and show what small groups can achieve, with no financial investment, in a short space of time with a bit of support and encouragement."

Lecturers on the Enterprise and Creativity module particularly highlighted the diversity of learning opportunities and "[the exposure] to enterprising ideas in a number of subjects/disciplines, so they could see a wider perspective on the topic".

Creating mutually beneficial partnerships with employers

Employers who had offered projects to Biosciences students cited a range of benefits to students and themselves as a result of this initiative. They felt the students gained in personal development, increased confidence and improved self-efficacy. They, themselves, benefited by having a specific piece of work completed to a high standard, with little cost or resource input.

Conclusions

Both pilot WRL initiatives have proved successful in achieving their intended aims. All stakeholders – students, academics and employers – were very positive about their experiences and could clearly indicate how student employability had been enhanced. That these activities in Biosciences and Management are embedded in curricula also adds to their potential long-term sustainability. Furthermore, the transferability across disciplines of both initiatives has been demonstrated. For example, commercial projects have been adopted by other science disciplines and are under discussion for a range of social science programmes. Similarly, the Enterprise and Creativity module is, in essence, transferable across all disciplines. This is particularly the case in relation to the use of senior student coaches to mentor more junior students and provides an interesting example of incremental development of student skills and attributes.

References

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