Embedding Graduate Skills

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Introduction

This chapter presents strategies to implement graduate skills in business undergraduate programmes.¹ We have developed teaching and learning resources to cultivate and grade student learning in the four areas of teamwork, critical thinking, ethical practice and sustainability.² We discuss our experience of implementing resources at a programme level, and in a discrete, intensive workshop for high-achieving students.

Keywords: Graduate Skills, Business, Rubrics, Standards, Workshop, Open Educational Resources

¹ This chapter presents a component of the project on behalf of the project team: Marilyn Clark-Murphy (Edith Cowan University), Theda Thoma (Australian Catholic University), Lynne Leveson (La Trobe University), Peter Dixon (University of Tasmania), Peter Petocz (Macquarie University), Marie Kavanagh (Southern Queensland University), Brendan Rigby and Tori Vu (project managers).
² These materials were tested and refined with students and academics through multiple iterations, and can be used, adapted and embedded in an undergraduate business programme and are available on the Graduate Skills website (www.graduateskills.edu.au).
Context

Australia has 38 universities which offer business undergraduate programmes. The Australian Learning and Teaching Council (ALTC) funds projects to support learning and teaching at Australian universities and The Australian Business Deans Council (ABDC) supports learning and teaching in business faculties. There are around 173 000 full-time equivalent students studying business-related degrees in Australia.

Our Graduate Skills project arose from the concerns of industry about graduates’ preparedness for work. A scoping study of industry representatives in Australia (Freeman et al, 2008) indicated a widespread industry belief that the attainment of graduate skills is one of the key areas in which graduates are underperforming, even though all Australian universities have graduate/generic skills/attributes/capabilities listed in their policy statements. There was clearly a need to address the learning and assessment of these capabilities in discipline-specific contexts. For our project, which was funded by the ALTC and supported by the ABDC, we selected three of the capabilities (teamwork, critical thinking, ethical practice) that were identified in the scoping study and added sustainability as an emerging graduate capability required by business.

This project has demonstrated that a workshop model can effectively address the development of graduate capabilities, and has made available a range of pedagogical materials that can be used to help students engage with these capabilities and to assess the extent of their learning. Importantly, the project has investigated the development of these capabilities in a holistic way, rather than as isolated skills. Including ethical practice and sustainability has shown that the approach can be applied to dispositional development in addition to the learning of more clearly-defined skills such as teamwork and critical thinking.
Rationale

We use the term ‘graduate skills’ to refer to the skills, attributes and capabilities demonstrated by graduates on completing an undergraduate degree. We will not discuss the body of research in this area and refer you to a literature review at our website (Rigby et al, 2009).

We report on practical strategies to foster business graduate skills: The resources include a wide range of targeted activities, from research to teaching activities, such as:

- real-world case studies and supplementary reading material;
- suggested teaching methods and lesson plans;
- literature reviews identifying best practice;
- standards of achievement, providing a framework to assess the attainment of each skill; and
- guidelines for using the resources.

These materials were tested and refined with students and academics through multiple iterations in workshops and classrooms, and can be used, adapted and embedded in an undergraduate business programme. Many of the project learning and teaching resources are being used in undergraduate and postgraduate business, statistics and interdisciplinary units within the seven participating institutions, some as a trial initiative and others on a more permanent basis.

The following section describes the resources and rubrics developed. We then discuss two examples: our experience of implementing programme level standards at the University of Tasmania, and an intensive workshop for high-achieving students at Macquarie University.
Learning and Teaching Graduate Skills

We identified the following best practice principles in teaching graduate skills (Bowden et al, 2000):

- The development of graduate skills is best fostered within the context of disciplinary learning; that is, in the discipline of business, more attention needs to be paid to how graduate skills are acquired and developed, and to the role of teaching and learning strategies in promoting and enhancing these skills.

- A learner-centred approach, located in constructivist pedagogy, is considered best practice as it situates the experiences, goals, and values of the students at the centre of the learning process, therefore enhancing their cognitive and affective development.

- It is essential to adopt an approach to teaching and learning that allows teachers to focus simultaneously on the students’ self-regulation of the learning and motivation processes, as well as on the environmental triggers that affect these processes.

The lesson plan for a learning activity focusing on sustainability (the Gunns Mill Scenario) is presented in Appendix A as an example of the resources we developed, tested and implemented. The activity relates to the proposed development of a paper mill in Tasmania, but the principles involved are applicable to any development proposal that is likely to have environmental effects. Accompanying the lesson plan for the case study are a number of resources including general information about the scenario, as well as expositions of the perspectives of the most prominent stakeholders. It is built upon these best practice principles:

- Clear learning outcomes, which allow for constructive alignment and effective and targeted assessment (Treleaven & Voola, 2008);
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- Allowing students to critically engage with the concept, policy and practice of sustainability in the business environment rather than prescribing a definition of sustainability. Students learn to understand and critically think about different perspectives of sustainability through a stakeholder analysis. This builds on existing research into education for sustainability;

- The idea of ‘Jigsaw groups’. This allows students to become ‘experts’ in a particular supporting document or materials for the activity, and then to share that knowledge with other students. This is an example of good practice in collaborative learning, where students teach and learn from one another (see http://www.mq.edu.au/ltc/resources/FBE_resources.htm for a booklet on leading discussions); and

- Building on and developing students’ self-regulated learning by facilitating both interpersonal and internal learning opportunities. Students work within their group to reach consensus, then reflect on how those decision-making processes were developed.

The resources can act as templates for the design of other activities to promote and enhance a variety of graduate skills across the business curriculum. Our materials include:

- other real world case studies, such as one on drug testing and another on the Moreton Bay (Queensland) oil spill;
- the argumentative essay;
- icebreakers;
- debates;
- the jigsaw method; and
- ethical dilemma scenarios.

An important aspect of the development of these resources was their evaluation by students and teachers, using both qualitative and quantitative measures.
Assessing Graduate Skills

Another major feature of the Graduate Skills project was the development and testing of standards of achievement. We considered it crucial that standards of achievement were displayed, for university grading purposes as well as for students’ benefit in terms of their learning outcomes.

We developed rubrics to demonstrate students’ attainment of each of the graduate skills. The rubric for critical thinking is set out as an example of the skill and discipline-specific assessment framework (Appendix B). We also developed a generic rubric, which allows teachers, faculties and institutions to adapt it for their own assessment purposes across discipline and skill domains. These models, as well as those rubrics for teamwork, ethical practice and sustainability are also available on the Graduate Skills website.

The rubrics define five levels of understanding based on qualitatively different outcomes from student engagement with materials throughout the project. There is a clear connection with the levels of the SOLO taxonomy (Biggs & Collis, 1982). The levels also correspond easily with the typical grading in Australia of High Distinction (HD), Distinction (D), Credit (C), Pass (P) and Fail (F). The articulation of these rubrics – in particular, the verbs that express how students are expected to learn/demonstrate achievement – allow constructive alignment with learning outcomes and learning activities. The rubrics enable students and academics to express, measure and demonstrate achievement and learning against cognitive domains. They set out what students are expected to achieve alongside what they have and have not achieved; this approach allows appropriate feedback to be given to students, and serves as a reference for quality assurance.

The standards of achievement are defined in relation to three different domains of knowledge: conceptual, procedural and professional. This allows teachers to design learning and assessment tasks that give students the opportunity to demonstrate their conceptual understanding of the capability, the procedures to
carry out the graduate skill, and also to show their professional application of the skill’s principles and practices. The standards are focused at the graduate level, so more students would be expected to demonstrate higher levels in later-year assessments: however, first year students can demonstrate a similar range of achievements, though perhaps with more structured tasks. The standards include guidance on creating criteria and levels of achievement to suit the particular task being assessed as well as the appropriate level for students.

Examples

Redesigning the Curriculum: University of Tasmania

The resources and insights of the projects have had an impact at a programme level at the University of Tasmania. In the Faculty of Business, the Bachelor of Business programme was substantially reviewed during 2009 to comply with the University’s common course structure. In concert with this, the Faculty of Business engaged in mapping graduate attributes across major strands of study. From 2011, a new compulsory core unit in the Bachelor of Business Programme will cover teamwork and critical thinking.

The unit co-ordinator will use of some of the resources and assessment rubrics developed by the project with embedding of teamwork and critical thinking in major strands of study at an intermediate and advanced level. The project’s activities and outcomes have been particularly influential in informing these processes. At a unit level, the ethical dilemma scenarios have been considered for use in a capstone ethics unit. The jigsaw method of student engagement has been used in a second-year industrial relations unit.

Within this model of teaching graduate skills in separate, dedicated units of study but applied or ‘infused’ in units across the curriculum, the advantage is that teaching of the skills is undertaken by people who specialise in the area. The disadvantage is that staff training is needed, so that they know what has been taught previously and understand that they have a responsibility to develop and
assess these skills in their units. A clear map and audit of the development of the skills and where they are taught and assessed in the curriculum is in the process of being developed.

**Workshop for High-achieving Students: Macquarie University**

Throughout the project, 80 academics and 81 students drawn from a mix of business discipline areas from twenty Australian universities participated in a series of workshops facilitated by the team. These workshops were used by the team to trial and refine learning modules and rubrics, and to facilitate professional development for staff. They also enabled the development of a workshop model for teaching graduate skills. A key principle underpinning the concept of embedding is that it is not simply a process of information transfer but involves a degree of transformation in the way that graduate skills are conceived and applied to relevant situations; for example, through case studies, problem solving, debates and class discussion. An effective feature of the workshops has been the high quality of the face-to-face interaction between students, teachers and resource materials.

As a direct outcome of the project, this model was implemented in the form of an intensive workshop programme to enhance the graduate skills of high-achieving students at Macquarie University. This programme will service students who have received a high university entrance score (‘Merit Scholars’), and it will include an average of 40 scholars each year, the majority from Business, and the remainder from the Merit Scholars programme.

The first Merit Scholar workshop was held as a residential over three days, and included later-year business students from a number of Australian universities. After initial icebreaker exercises, they worked in groups on a variety of exercises and activities that focused on increasing their awareness and proficiency in dealing with the four targeted graduate skills, as developed in the project. These activities were led by academics and educational developers, from a range of disciplines, who provided feedback to students on their participation and their
reflection on practice and application. The three-day event culminated in a series of group presentations in which each group received feedback from other students, staff and visiting industry liaison representatives.

The workshop model was found to be an effective teaching method, because it gave a sustained block of time which could be used to cover a range of important graduate skills, and provided the opportunity to focus on particular exercises. The workshop attested to the efficacy of social interaction as a means of improving students’ understanding of these capabilities. Student participants responded enthusiastically to the workshops. Successful uptake of graduate skills at the undergraduate level relies not just on academic staff developing and adhering to learning and teaching policy and procedure, but also student buy-in of the value of graduate skills.

**Student Quotes from the Workshops**

At the end of the workshops students were invited to provide written feedback and some were also interviewed. Twenty-one students were contacted six months after the first workshop and interviewed. The student comments about the workshop experience (some of which are included here) were overwhelmingly positive and related to the following themes in their learning; academic benefits, personal development, the social context of learning, transferability to employment and transferability to other cultural settings.

*I loved the workshop. … I learned a lot from it. I pushed myself. All these great experiences add up a lot … I just want to reiterate that I am encouraged by the fact that you guys are doing something like this, and I really hope that it will come to something and it will impact the way that the university teaches, and hopefully improve its standards as well.*

*Because I think where we learn in China, the majority is based on – you know we don’t have a lot of workshops … we have lectures so it’s different. Nothing involves a lot of activities. So I think if you involve a lot of activities*
and students participate in what’s going on and contribute to the workshop, that’s a very good way of learning.

Main Learning Points

Workshops as Professional Development

Whilst we designed workshops to test and develop resources and rubrics, surprisingly, they provided a transformational model for professional development. Seeing academics and students working with interactive materials made a significant impression on staff who observed it, and this has resulted in many using the resources in their own classes. The workshop programme is an effective ongoing professional development initiative to equip academics in embedding graduate skills into their own teaching.

Workshops as Capstone Experiences

Workshops are resource intensive; more difficult with larger groups; and they require special timing within the academic year. These represent very real constraints. However, through experience, observation and analysis of feedback from students and academics, the project team was able to identify a range of areas within teaching and learning where this model of delivery was considered to be particularly effective, for example, in a capstone unit.

Rubrics

The development and testing of rubrics with students resulted in more robust rubrics that genuinely differentiated between qualitatively different attainments which could be translated into a rubric for use in designing, assessing and communication requirements of learning tasks.

In summary, the development of graduate skills has now been widely recognised as important in business degrees. The workshop model complements other models based on the embedded, infused or dedicated approaches used to
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develop these skills among students. Workshops can be used to kick-start learning at the beginning of a degree or to consolidate learning in capstone units.

Conclusion

Transitions to and from university learning are critical parts of a journey to becoming a professional (Wood & Solomonides, 2008). Our project worked with students and academics to develop robust materials and techniques for embedding graduate skills. The influence on the participants was clear and demonstrated in interviews six months after the intervention workshop. It was clear from students’ responses that our project had identified the skills and strategies which would enable them, as graduates, to adapt in rapidly changing environments and to be effective in their professional lives and as engaged citizens. Whether the same results are scalable to the numbers of students studying business remains to be seen; however, the project has demonstrated that short, intensive interventions are effective. Industry panellists were impressed with the standard of student presentations and all the materials have been endorsed by our industry reference group. While studying for a degree, students should have the opportunity for a transformational learning experience and we have found that targeted materials and inspirational teaching can make an impact.

References


**Biographies**

**LEIGH WOOD** is the Associate Dean, Learning and Teaching, Faculty of Business and Economics. She has a strong record of research in learning and teaching with over 30 journal articles, three textbooks, 10 multimedia learning packages and is the co-editor of the “How to ...” series available at http://www.mq.edu.au/ltc/resources/FBE_resources.htm. Recently she has coordinated a curriculum review of the undergraduate and postgraduate degrees in business at Macquarie University. She is currently writing a book on transition to professional work.
**ANNE DALY** is currently the Director of Graduate Studies in the Faculty of Business and Government at the University of Canberra with overall responsibility for the Masters coursework programmes and the Higher Degree by Research students. Her research interests are in Labour Economics, particularly the economic status of women and Indigenous Australians. She is a member of a team working on a two-year ALTC project Internationalisation at Home. The project involves the Business and Health Faculties at the University of Canberra and Griffith University.

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## Appendix A: Sustainability and Teamwork: Gunns Mill Scenario

<table>
<thead>
<tr>
<th>Description</th>
<th>Case Study Analysis</th>
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<tbody>
<tr>
<td>Task Type</td>
<td>In-class or tutorial activity</td>
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<tr>
<td>Time</td>
<td>50 minutes</td>
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<tr>
<td>Level</td>
<td>Advanced</td>
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<tr>
<td>Class Size</td>
<td>Up to 35 students</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>Student should be able to:</td>
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<tr>
<td></td>
<td>✶ Demonstrate an understanding of sustainability in three dimensions: environmental (green; organisational (long term)); responsibility for present and future generations</td>
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<td></td>
<td>✶ Develop an argument and counterargument in two contexts</td>
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<tr>
<td>Method</td>
<td>Choose a case example of an organisational activity that raises sustainability issues (‘the Project’). Prepare a general factual introduction and up to five statements of the viewpoints of stakeholders.</td>
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<tr>
<td>Concluding Activity</td>
<td>Link this back to learning about sustainability from the student activity. Issues to address might be:</td>
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<tr>
<td></td>
<td>✶ What do we mean by sustainability?</td>
</tr>
<tr>
<td></td>
<td>✶ How do stakeholders view sustainability differently?</td>
</tr>
<tr>
<td>Tips</td>
<td>Keeping time is key to the success of this activity</td>
</tr>
<tr>
<td>Student Instructions</td>
<td>You will work in groups of five. Everyone will be given some background material on the Project. Each group will then be given some material relating to five stakeholders with differing views about the Project. One group member will be assigned to each stakeholder. You should read the material for the stakeholder you’ve been assigned to but don’t discuss it with the rest of your group. The groups will then be rearranged so that those with the same information become an expert group on each stakeholder’s views. Each of these expert groups will consider the information given and decide how each member will present their views to ‘non experts’. For example, if you’re part of the Organisation’s Stakeholder Group how could you best explain the company’s position to other stakeholders? The original groups will then reconvene and will contain an expert on each stakeholder’s views. You will then consider and discuss the issues based on the background information you’ve been given, and the contributions of each expert who will argue the interests of their respective stakeholder. Your discussion should include, but need not be limited to the following:</td>
</tr>
<tr>
<td></td>
<td>✶ What sustainability issues does the Project raise?</td>
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<td></td>
<td>✶ How would the stakeholder you are representing argue the sustainability case?</td>
</tr>
<tr>
<td></td>
<td>✶ Based on your view of sustainability should the Project proceed?</td>
</tr>
<tr>
<td></td>
<td>✶ Assume the Project is going ahead; what concessions or assurances would the stakeholder you represent seek in order to feel satisfied that the project was sustainable?</td>
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<tr>
<td></td>
<td>You will have about 25 minutes to work on this: 10 minutes for each expert group, and then 15 minutes for the original groups. At the end of this time each original group must give a 5 minute group presentation which addresses the following questions:</td>
</tr>
<tr>
<td></td>
<td>✶ What sustainability issues are relevant to the Project?</td>
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<tr>
<td></td>
<td>✶ Did you reach a consensus?</td>
</tr>
<tr>
<td></td>
<td>✶ How did your group arrive at a consensus?</td>
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<tr>
<td></td>
<td>✶ What conclusion did you reach as to whether this Project can proceed in a sustainable way?</td>
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### Appendix B: Critical Thinking Standards of Achievement

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<th>Level</th>
<th>Conceptual</th>
<th>Procedural</th>
<th>Professional</th>
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<tr>
<td><strong>4</strong></td>
<td>As the theorising and assessment of information, ideas, materials using various modes of thinking for effective interpretation.</td>
<td>Thinks open-mindedly about a situation, recognising and assessing their assumptions, implications, and practical consequences in coming up with alternative solutions.</td>
<td>Is able to synthesise, analyse and evaluate a variety of viewpoints of a complex situation and articulate clearly well-reasoned solutions and conclusions.</td>
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<tr>
<td><strong>3</strong></td>
<td>Conceptualises critical thinking as a self-monitoring and self-correcting process; discernment which can also be applied to work produced by their peers.</td>
<td>Can synthesise, analyse and evaluate the quality of information and connections in an applied situation, recognising inconsistencies, gaps in logic and unexplored ideas, including their own and others.</td>
<td>Comes to well-reasoned conclusions and solutions about a professional situation, testing them against relevant criteria and standards.</td>
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<tr>
<td><strong>2</strong></td>
<td>Comprehends critical thinking as the ability to discern patterns and relationships between concepts. Understands the application of basic critical thinking concepts such as a reasoned argument. Understands critical thinking as the selection, collection, analysis, interpretation and evaluation of source materials.</td>
<td>Can use different critical thinking skills appropriately in a variety of contexts, such as making a reasoned argument or describe patterns and relationships between concepts.</td>
<td>Able to investigate a professional situation and determine facts and fallacies appropriate to the situation.</td>
</tr>
<tr>
<td><strong>1</strong></td>
<td>Defines thinking as one or more of its basic manifestations like logic, types of argument, bias and laws.</td>
<td>Can apply logical thinking (inference and deduction) to simple logic exercises.</td>
<td>Demonstrates a basic understanding of logic and analysis of argument but has little understanding of how to apply these in professional situations.</td>
</tr>
<tr>
<td><strong>0</strong></td>
<td>Defines critical thinking as memorisation and/or the acceptance of information without filtering. Finds sources only to confirm their face value.</td>
<td>Unable to express themselves in a logical manner.</td>
<td>Unable to apply critical thinking tools to professional situations.</td>
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