



## Final Report

# EMBEDDING THE DEVELOPMENT AND GRADING OF GENERIC SKILLS ACROSS THE BUSINESS CURRICULUM

[www.graduateskills.edu.au](http://www.graduateskills.edu.au)

2011

### Project leader

Leigh Wood, Macquarie University

### Project team

Peter Petocz, Tori Vu, Brendan Rigby, Macquarie University  
Anne Daly, University of Canberra; Theda Thomas, Australian Catholic University  
Marilyn Clark-Murphy, Edith Cowan University; Lynne Leveson, LaTrobe University  
Marie Kavanagh, University of Southern Queensland  
Peter Dixon, University of Tasmania

### Authors

Tori Vu, Brendan Rigby, Glyn Mather, Macquarie University



UNIVERSITY OF  
CANBERRA



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Australian Learning and Teaching Council  
Level 14, 300 Elizabeth Street  
Surry Hills NSW 2010  
Australia

PO Box 2375  
Strawberry Hills NSW 2012  
Australia

Telephone 02 8667 8500  
Facsimile 02 8667 8515  
[www.altc.edu.au](http://www.altc.edu.au)

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## Executive summary

Universities are grappling with the most effective way to embed and assess graduate skills within business programs. Business graduates are expected to have the capacity to adapt to the shifting knowledge, changed circumstances, and sudden upheavals of the business environment. This project, initiated by the Australian Business Deans Council Teaching & Learning Network (ABDC T&L), is a practical response to these challenges and makes a valuable contribution to the graduate skills agenda.

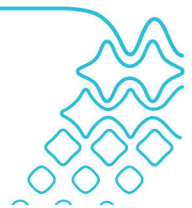
We have developed accessible and practical teaching and learning resources focused on a subset of graduate skills, namely teamwork, critical thinking, ethical practice and sustainability. These materials were tested and refined with students and academics through multiple iterations, and can be used, adapted and embedded in an undergraduate business program in order to develop these graduate skills.

Our project has delivered concrete outcomes, including:

- Two comprehensive literature reviews identifying best practice in teaching, learning and assessing graduate skills in business education.
- A range of accessible and real world case studies, lesson plans, suggested teaching methods, and supplementary reading material.
- Standards of Achievement, providing a framework to measure attainment of the four chosen graduate skills, in addition to a rubric of generic standards that can be adapted for other skills and disciplines.
- Practical guides on how to use the Standards of Achievement to create learning outcomes and assessment rubrics.
- Development of the Graduate Skills website <[www.graduateskills.edu.au](http://www.graduateskills.edu.au)> which houses all project resources.
- An effective workshop model which can be delivered to groups of students and/or academics to promote an understanding of how the case studies and Standards of Achievement may be used to embed, develop and assess graduate skills.

Through our multi-faceted dissemination activities, we have generated stronger and broader engagement with the benefits, challenges and methods of teaching and learning graduate skills in business education. In particular, by running state-wide workshops for students and academics and embedding learning modules and standards into existing units and programs, the project has stimulated relevant policy change and curriculum development activities at a unit level and, at some team institutions, at a program level. In particular, the use of the jigsaw method for stakeholder analysis in ethical practice and sustainability in business contexts will be implemented in business departments across Australia.

This project has identified and disseminated several current models of embedding graduate skills in business programs around Australia. We trialled and disseminated a new model – that of an intensive workshop – with positive outcomes for students and the professional development of academics around Australia. The workshop was also used to highlight the project's key findings on effective embedding strategies and outlined the resources available on the Graduate Skills website.



Our team members benefited from the collaborative and peer learning aspects of the project, through completing tasks and reviewing each other's work in pairs as well as being exposed to a range of policy and practice specific to each partner institution. The project has international relevance through the Graduate Skills website and will continue to have impact as the team disseminates outcomes through further scholarly papers, presentations and production of materials. Ongoing collaboration with the ABDC T&L Network and enrichment of the Graduate Skills website will extend the learning and other outcomes of the project into the future.



# 1. About the project

## 1.1 Project team

Leigh Wood (Macquarie University), project leader  
Anne Daly (University of Canberra [UC]), project deputy Leader  
Marilyn Clark-Murphy (Edith Cowan University [ECU])  
Peter Dixon (University of Tasmania)  
Marie Kavanagh (University of Southern Queensland [USQ])  
Lynne Leveson (La Trobe University)  
Peter Petocz (Macquarie University)  
Theda Thomas (Australian Catholic University [ACU])  
Nicole Lees (Macquarie University), project manager, July 2008 – August 2009  
Brendan Rigby (Macquarie University), project manager, March 2009 – September 2010  
Tori Vu (Macquarie University), project manager, November 2009 – September 2010

## 1.2 Acknowledgements

### *Reference group*

Mark Freeman, Lyn Simpson and Tim Brailsford (Australian Business Deans Council [ABDC])

Patrick Boyle (Q Associates), external evaluator  
Dianne Kirby (Macquarie University), research associate  
Philip Hancock (The University of Western Australia), mentor

## 1.3 Project rationale

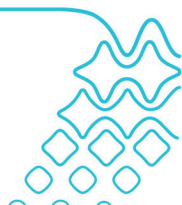
The Australian Business Deans Council (ABDC) represents a national network of business faculties (currently 38) from universities around Australia. The ABDC Teaching and Learning (T&L) Network seeks to provide associate deans who have responsibility for learning and teaching in business higher education with opportunities for professional development as well as knowledge and resource sharing.

As part of the Australian Learning and Teaching Council (ALTC) Discipline-based Initiatives Scheme, the ABDC conducted a scoping study, 'Business as usual? A collaborative and inclusive investigation of the existing resources, strengths, gaps and challenges to be addressed for sustainability in teaching and learning in Australian university business faculties' (Freeman et al., 2008). Our project – the 'Graduate skills project' – follows on from the scoping study and was developed as a strategic initiative by the ABDC T&L Network to address its findings. Two other projects were also instigated by the network: 'Beyond numbers: valuing quality teaching', and 'Engaging industry: embedding professionally relevant learning in the business curriculum' (see Section 4.3 for more information on these).

The 'Business as usual?' report (Freeman et al., 2008) identifies the development of graduate skills in higher education as a salient theme<sup>1</sup>. However, "there was little

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<sup>1</sup> From here, generic skills will be referred to as graduate skills. There is considerable divergence within the terminology used for graduate skills, which includes: key skills; key competencies; transferable skills; graduate attributes; employability skills; soft skills; generic graduate attributes; professional skills; personal transferable skills; generic competencies; generic skills; and graduate skills. For the purposes of this report these terms are considered equivalent.



agreement about the degree to which generic skills were important ... whose responsibility they were to teach ... or how they should be assessed” (p. 23). On the other hand, “there was general agreement that graduate skills were important for graduates and that students were not demonstrating generic skill development from their university studies as well as they might be” (pp. 22–3).

It is clear that graduates – in the business environment or otherwise – face uncertain employment prospects in the 21st century, particularly during the recent economic crisis. The provision of higher education is constantly changing in response to the demands of government, industry, academics and students. Indeed, well before the global financial crisis, business curricula were being influenced by a shift in focus from pure knowledge-based outcomes to more dynamic skills-based outcomes, in order to enable students to apply their knowledge critically and reflectively. The aim has been to develop skills that can be applied in all aspects of students’ lives beyond their professional lives in order to meet the expectation of employers. Business graduates are expected to possess the capacity to adapt to the shifting knowledge, changed circumstances, and sudden upheavals of the business environment.

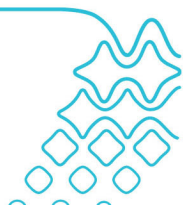
Our project team chose to concentrate on a subset of graduate skills, namely teamwork, critical thinking, ethical practice and sustainability. The first three were skills identified as being essential for business graduates in the scoping study (Freeman et al., 2008). The Business Industry and Higher Education Collaboration Council (BIHECC) report from 2007 also identifies these skills as important. It maintains that, “More than ever we need professionals who are responsive to economic, social, cultural, technical and environmental change and can work flexibly and intelligently across business contexts” (p. 1). In light of this acknowledgement from the BIHECC of the importance of environmental issues – and considering the expanding place of sustainability in corporate, public and academic discourse – we added sustainability to the skills of teamwork, critical thinking and ethical practice. These skills are complex, and the existing literature does not display a shared understanding of their meaning or how to develop them (as detailed in the literature review on graduate skills in Section 3). There was clearly a need to address the learning and assessment of these generic skills in a discipline-specific context.

The scoping study and the BIHECC (2007) report have detailed the expectations of employers, so this project focused on representing the student and lecturer voice.

## 1.4 Project objectives

The broad objectives for our graduate skills project were to: develop a series of learning modules that could be used in an undergraduate business program in order to develop the graduate skills of undergraduates; and further, to embed these skills in the business curriculum of universities across Australia. To these ends, the project aimed to:

- conceptualise and define clearly a small number of graduate skills: sustainability, teamwork, critical thinking and ethical practice
- produce a literature review concerning graduate skills in business education
- produce a literature review on assessment of graduate skills in business education
- develop and trial a set of learning modules that embody good practice for promoting teaching and learning of the selected graduate skills
- develop a framework for assessing the success of the introduction of graduate



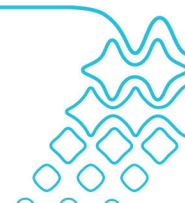
skills (learning) at different academic levels

- develop standards (levels of achievement) for guiding teaching and learning and the assessment of skills development.

## 1.5 Project outcomes

In brief, the outcomes of the project are as follows:

- Significant professional development for business academics from 20 Australian universities, using teaching methods and materials tested with 80 students from 15 Australian universities.
- A trialled series of learning modules relating to teamwork, critical thinking, ethical practice and sustainability. The modules include real world case studies and supplementary reading material; suggested teaching methods; and lesson plans. Alternatively, academics can use a template to develop their own materials; these can be added to the Graduate Skills website <[www.graduateskills.edu.au](http://www.graduateskills.edu.au)> after they have been reviewed by the team (see example in Appendix A). The modules are discussed in more detail in Section 4.1.
- Standards of Achievement for each skill were developed and tested, providing a framework to measure their attainment. There is a rubric specific to each of the four chosen skills in business programs, as well as a rubric of generic standards that can be adapted for other skills and disciplines (Tables 1–5). These are complemented by practical guides on how to use the standards to create rubrics and learning outcomes (see Section 4.2 for more detail).
- Two comprehensive literature reviews were produced that identify best and existing practice relating to graduate skills in business education; and assessment of those graduate skills (available at <[www.graduateskills.edu.au/literature-review](http://www.graduateskills.edu.au/literature-review)>; they are also included in Part 2).
- A Graduate Skills website hub <[www.graduateskills.edu.au](http://www.graduateskills.edu.au)> was established, which incorporates teaching and learning resources for academics, students, graduates and industry professionals. The website serves as a platform for the materials detailed above, in addition to academic papers and presentations by members of the project team. There are also practical materials to assist academics in using the resources in a classroom setting, and detailed procedures on how to facilitate graduate skills workshops. The website is a dynamic resource that encourages and supplements the learning and teaching of graduate skills in business education. It continues to be regularly accessed by visitors from around the world (56 countries as of September 2010). It is intended that the website will be enriched and maintained to assist with active dissemination of project outcomes for at least the next three years.





## 2. Project methodology

### 2.1 Research methodology and approach

Our project was underpinned by an action research methodology (Haggarty & Postlethwaite, 2003), which involved a cycle of deliberative activity: planning, acting, observing and reflecting. The participative techniques and shared reflective practice proved to be an effective way of approaching a process of renewal and change in learning and teaching. It was also appropriate to the staged nature of the project (see below). The project team received input from students, academics and industry representatives throughout the whole process, which significantly shaped our approaches as well as the development of the learning and teaching materials.

At each stage, the team presented progress reports to the ABDC meeting of associate deans, learning and teaching which is held three times a year. We incorporated the feedback received through this avenue into further development of the project strategies and outcomes.

### 2.2 Project plan

#### Stage 1A: July – December (Semester 2), 2008

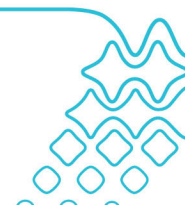
During the first stage, the project team met face-to-face and via teleconferences to define and refine the detail of the project and its methodology. Discussions were also held with the ABDC and other teams involved with ABDC-initiated projects. We employed a project manager; established a communications strategy; and initiated a literature search on graduate skills in general and how to assess these. A distributed work package was devised (based on the buddy system in which team members work in pairs on a specified task) to develop learning modules and standards, and to produce dissemination outputs.

#### Stage 1B: January – June (Semester 1), 2009

The project team defined the specific graduate skills considered to be of primary interest, and then produced a comprehensive literature review about graduate skills in general as well as for the four identified skills. Based on the findings, we produced an initial set of learning modules and standards that were trialled with 35 students from the seven collaborating institutions in an intensive three-day workshop (April 2009). The team worked closely during the workshop with students and industry representatives, and collected feedback on the learning and teaching materials as well as desired project outcomes. Academics were also surveyed via the ABDC T&L Network about their opinions on both existing and optimal strategies for embedding graduate skills into curricula. Using this data and considering the unique conditions at their own institutions, the team then refined the materials and devised strategies for implementation in the following semester for their specific undergraduate business programs.

#### Stage 2A: July – December 2009 (Semester 2), 2009

The team trialled the learning modules and standards at their respective institutions, and gathered feedback from students and staff on their experience with these materials. A literature review was produced on assessment of graduate skills. We also followed up with the students who participated at the April 2009 workshop about the continuing impact of the workshop on their studies. Using the accumulated data, the team continued to refine the materials and develop a revised set of learning modules. The online resource hub <[www.graduateskills.edu.au](http://www.graduateskills.edu.au)> was finalised and learning modules and draft standards were posted for adaptation. Also



made available were online evaluations for the learning modules; multimedia resources from the workshop; the literature reviews; and academic papers arising from the project.

### Stage 2B: January – July (Semester 1), 2010

During the final stage, the team continued to disseminate materials and strategies through open-invitation workshops for academics and students in Brisbane, Sydney and Melbourne. The website was redesigned, and the team wrote guides to using the website and the associated materials. Further modifications were made to the standards; additional learning modules were developed; and the team wrote guides to using the website and adapting learning modules and the standards, based on feedback from these workshops and trials in team institutions during the previous stage. Preparations were also made to develop the final report for distribution to the ALTC, the ABDC T&L Network, and other key stakeholders. In addition, a summative evaluation was conducted by an external evaluator (see 2.4).

### 2.3 Reference group

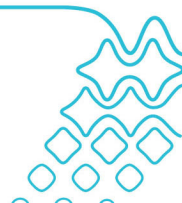
The reference group was regularly consulted on project activities and outcomes. They gave feedback on project materials, particularly the learning modules, standards of achievement and the Graduate Skills website. They also provided input on the value of graduate skills in higher education, and debated the preferred models of delivery of graduate skills in higher education. Their evaluation and guidance – from the perspectives of both academia and industry – have assisted the team with refining the project materials and improving their utility and accessibility for a variety of stakeholders.

The project reference group members were:

- Richard Atfield, UK Higher Education Academy, Business Management Accounting Finance Subject Centre (Assistant Director)
- Sandra Cormack, Australian Human Resources Institute (NSW and ACT Manager)
- Lisa Gay, Deloitte Australia (Graduate Recruitment Consultant)
- James Guthrie, Institute of Chartered Accountants (Head of Academic Relations)
- Samantha Hettihewa, University of Ballarat (Deputy Co-ordinator Teaching and Learning, School of Business)
- Chris Patel, Macquarie University (Department of Accounting and Finance, Faculty of Economics and Business)
- Lyn Simpson, Australian Business Deans Council, Teaching and Learning Network (Chair).

### 2.4 Independent evaluator

Patrick Boyle, consultant and Director at Q Associates, conducted a summative evaluation of the project. This focused on the project's strategies for project and program evaluation, and project design.



### 3. Why graduate skills?

The project included the production of two literature reviews. The first is on graduate skills in general as well as on four skills selected as essential by the project team (teamwork, critical thinking, ethical practice and sustainability). This review is titled, 'Review of graduate skills: critical thinking, teamwork, ethical practice and sustainability'. A further literature review was produced focusing on the assessment of graduate skills, 'The assessment of graduate skills: orienting students and standards for an uncertain future'. Both reviews are presented in Part 2 of this report, and they can also be accessed on the Graduate Skills website <[www.graduateskills.edu.au/literature-review](http://www.graduateskills.edu.au/literature-review)>.

In this section a discussion of the relevance and importance of graduate skills is presented, followed by a closer examination of the four selected skills. The section concludes with a presentation of issues relating to assessment of graduate skills in general.

#### 3.1 Relevance and importance of graduate skills

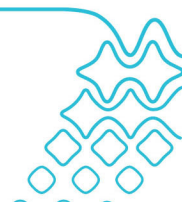
The importance and relevance of graduate skills is recognised not only by higher education institutions and professional industry bodies, but also by governments and accrediting bodies that deal with quality assurance (Treleavan & Voola, 2008). Statements from the academic boards of many universities about graduate attributes spell out the development and achievement of graduate skills considered crucial to an Australian university graduate, in particular: core competencies and skills to participate in the workforce; commitment to lifelong learning and renewal; and active and engaged involvement of graduates as citizens (at both the community and global levels). All of which skills contribute to a student's own personal, cognitive and affective development.

Bowden et al. (2000) suggest that there are three principal arguments for the inclusion of graduate skills in higher education, all of which relate to the shifting role of universities:

- It is now considered the role of universities to produce citizens, who can be agents for social change and good in the community.
- Upon graduation, students face, and need to be prepared for, an uncertain future.
- Employers expect to see a certain set of capabilities demonstrated by graduates.

There is a need to develop these skills and capabilities in all our graduates, which has led to the reshaping of the business curriculum in many ways. For example, changes have consequently occurred in what are considered to be the desired outcomes of students' learning; learning and teaching policy and practice; the modes of delivery; and assessment practices. Significantly, graduate skills are also having an impact on the academic standards which higher education institutions are expected to meet as well as the level of academic achievement required of students.

As part of the ALTC Discipline-Based Initiatives Scheme, the ABDC undertook extensive stakeholder consultation and research into the challenges, issues and opportunities facing business education. The resulting scoping study, 'Business as usual?' (Freeman et al., 2008), concluded that, "there was general agreement that graduate skills were important for graduates and that students were not demonstrating generic skill development from their university studies as well as they might be" (pp. 22–3). They identified particular graduate skills as being critical, including: communication; teamwork; the ability to use technology; emotional



intelligence; problem solving; managing and resolving conflict; acting autonomously; self-monitoring and planning; and initiative and enterprise (p. 14).

From this sample, our team selected teamwork, critical thinking and ethical practice. We also identified sustainability as a skill which lent the project a future-looking perspective to complement the retrospective offered by the scoping study. As predicted, sustainability has become a live and pertinent issue across a number of levels in business education, higher education and more broadly. This has generated substantial interest in the project. Along with ethical practice, we judged sustainability to be a more conceptual skill as opposed to teamwork and critical thinking, which are more procedural skills. This allowed for a more balanced focus in demonstrating that project outcomes can be applied to a wide variety of graduate skill types.

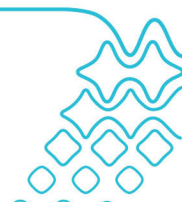
Part of our reasoning for the selection of graduate skills was purely practical, for instance the team decided it was not viable to cover all the skills mentioned due to time and resource constraints. In addition, the other graduate skills identified in the scoping study – such as communication and technology capabilities – are already and continue to be the focus of previous and ongoing projects. ABDC input decided us against addressing communication, since many universities (such as QUT) already have successful models in place; for instance, at Macquarie, communication work has been integrated into the Masters of Professional Accounting degree. Extra considerations that guided the selection were that the team had members with expertise in critical thinking, ethics and sustainability; and teamwork was an area that all members of the team considered could be improved at their own institutions.

### 3.2 Critical thinking

A panel of experts in the US and Canada defines critical thinking, “to be purposeful, self-regulatory judgement which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. Critical thinking is essential as a tool of inquiry” (Facione, 2006, p. 22). According to Pithers (2000, p. 239), who reviewed the education literature on critical thinking, “the term ‘critical thinking’ is used ... to describe reasonable, reflective thinking, focusing on task, people or belief ... It is a definition which attempts to exclude creative thinking”. Vardi (1999) aligns critical thinking with Bloom’s Taxonomy, highlighting this attribute as an incremental process of cognitive abilities and competencies. Vardi defines critical thinking as not only involving the evaluation of information, but also its conceptualisation, application, analysis and synthesis.

Researchers, academic staff, higher education institutions and industry bodies generally agree that critical thinking is fundamental to not only a meaningful education, but also to being an active and engaged global citizen and an effective employee (Facione, 2006; Moore, 2004). The outcomes of critical thinking instruction refer to both social consequences and individual learning, a base statement that can be made for graduate skills in general (McGuinness, 1993). There is disagreement, however, about its conceptualisation, which has direct implications for how it is to be located in teaching and learning processes. Disputes have been epistemological, revolving around two broad conceptualisations of critical thinking: on the one hand, critical thinking as a universal graduate skill and, on the other, critical thinking as a loose category of diverse modes of thought.

Representing the former – that is, a universal skill – Ennis’ (1962) definition has provided the theoretical framework for many critical thinking workshops, especially in the US (Moore, 2004, pp. 4–5). According to Ennis (p. 81), “critical thinking is the correct assessing of statements”. Later, he refined his definition to, “reasonable reflective thinking focused on deciding what to believe or do” (1989, p. 4). Ennis



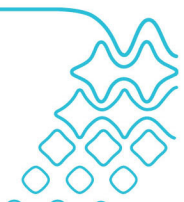
elaborated on this general statement, codifying an extensive list of aspects and sub-skills of critical thinking, and he “insists that they exist as a set of independent cognitive abilities which can be taught in relation to any propositional content” (Moore, 2004, p. 5). Teaching critical thinking from this perspective involves developing students’ skills and abilities, and the pedagogic goal of the ‘transfer of training’ or use of critical thinking skills in a variety of different disciplinary, professional and social contexts (Phillips & Bond, 2004).

Representing the conception of critical thinking as a loose category, McPeck (1981, p. 7) defines critical thinking as, “the appropriate use of reflective scepticism within the problem area under consideration”. He argues that critical thinking cannot be separated from the domain or context from which it is applied: “The transfer of skills is more likely to occur if the teaching of critical thinking uses ‘the power’ ... of discipline knowledge” (McPeck, 1990, p. 279). It has been suggested that, “The implications for teaching of the McPeck position are that the development of students’ critical abilities should always be pursued within the context of their study within the disciplines” (Moore, 2004, pp. 5–6). According to Moore, the debate in Australia is clearly moving in two directions, with the federal government appearing to have a disposition towards a generalist (Ennis) understanding as evident by the Graduate Skills Assessment, while some institutions favour a more general characterisation.

Many writers on the conceptualisation of critical thinking have attempted to move away from this debate, divorcing themselves from whether critical thinking should be embedded or addressed separately from disciplinary context, instead promoting an understanding of critical thinking as encompassing cognitive and affective processes and abilities, attitudes, dispositions and the learning environment (Vardi 1999; Barnett, 1997; Pithers, 2000; Facione, 2006; Oxman-Michelli, 1992). This echoes Ruggiero’s position (1988), which is that thinking needs to be fostered holistically, where a connection is made between dispositions, skills and processes. In particular, the notion of students possessing a ‘critical spirit’ or ‘critical being’ is seen by some as a necessary disposition to developing critical thinking skills. Facione (2006) emphasises the cognitive ability of self-regulation, “maybe the most remarkable cognitive skills of all ... because it allows good critical thinkers to improve their own thinking” (p. 6). Indeed, this notion that critical thinking is enhanced by self-regulated learning is echoed by Pithers (2000), Schunk and Zimmerman (1994), Boekaerts and Cascaller (2006), and Ladyshevsky (2006).

Considering these divergent conceptualisations of critical thinking, and the various aspects of cognitive and affective abilities and dispositions that it encompasses, it is not surprising that Vardi (1999) argues that the research literature does not offer any clear guidelines for promoting and applying critical thinking skills in a learning environment. One of the issues that still needs to be addressed is that, although numerous examples of critical thinking strategies are offered, instances of empirically informed research are rare. In addition, research suggests (such as by Phillips & Bond, 2004; Pithers, 2000) that there is a lack of shared understanding of what critical thinking is, and how it is acquired and achieved between instructors and students. According to Phillips and Bond (2004), the implications of this are that, “until pedagogic practices are aligned with those expected of students we cannot hope to achieve the higher order thinking that is said to be an outcome of a university education” (p. 293).

These issues give weight to the widely held notion that it is a fallacy to assume there is a ‘correct program’ for the development of critical thinking (Sternberg, 1987; Pithers, 2000). “Sternberg ... made the useful point that there is no one correct thinking programme: it depends on the programme goals and the content. It also depends ... on the context or culture in which the learner’s thinking is to be situated” (Pithers, 2000, p. 242). In a review of the literature, Pithers also proposes that



metacognitive and student-centred approaches, scaffolding, self-regulated learning, problem-based learning and learning environments anchored in 'human dialogue' characteristics are more effective in enhancing students' critical thinking skills than approaches that are technology-based.

Vardi's (1999) review of the literature reveals a number of various strategies divorced from disciplinary knowledge and context. She lists a selection of these strategies, based on research by Ruggiero (1988): Socratic questioning; debates and discussion; reflective journals and questioning; mind maps; and self-regulation strategies for critical reading. Vardi suggests that these strategies emphasise the need to vary the opportunities to develop a wide range of skills in students, which will inform their metacognitive, cognitive and affective processes of critical thinking.

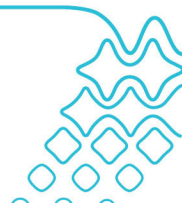
### 3.3 Teamwork

Many educators have recommended that the framework for designing activities to promote teamwork should be situated in cooperative learning theory and pedagogy (Koppenhaver & Shrader, 2003; Huff et al., 2002; Pfaff & Huddlestone, 2003; Kazlauskas et al., 2007). Indeed it has been suggested that, "for cooperative learning to occur, the instructor must carefully structure the learning experience ... the instructor needs to make decisions relative to the goals of the assignment and the size and structure of the group (Koppenhaver & Shrader, 2003, p. 4). Kazlauskas et al. (2007) note the difference between cooperative and collaborative learning, highlighting that the notion of collaboration is underpinned by a constructivist approach to learning and should reflect knowledge building, whereas cooperative learning is rather the sharing of ideas. Both notions imply the importance of goal attainment.

There is an assumption and almost unanimous consent in the literature that teamwork embedded within the curriculum can promote student capability and competence to collaborate and cooperate in group settings, as well as enhance their problem-solving, communication, leadership, interpersonal, social and critical thinking skills (Hansen, 2006; Ashraf, 2004; Hernandez, 2002; McCorkle et al., 1999). The effectiveness of this approach is perhaps because the use of teamwork as a critical learning pedagogy is founded in active learning, social constructivism and cooperative learning theory. However, these skills and capabilities are not acquired or developed without scaffolding and facilitation (Kazlauskas et al., 2007), that is, simply, "placing students into groups for class projects is not the same as developing teams" (Barker & Frank, 1997, p. 304, cited in Hansen, 2006, p. 12). The assignment of students into teams without addressing team development or team-building processes is recognised as a significant problem (Clinebell & Stecher, 2003). If the technique is applied without proper planning, it will not result in higher academic achievement nor the achievement of learning outcomes related to skill development and attainment, and it can result in unclear goals, mismanagement, conflict and inequalities (Hansen, 2006; Kazlauskas et al., 2007).

Although the literature generally reports mixed student perceptions of teamwork, there is a predisposition by academics towards the effectiveness of teamwork in the development and attainment of teamwork skills (McCorkle et al., 1999; Hansen, 2006; Kazlauskas et al., 2007). However, the research methods employed for collecting the data that give weight to student acceptance of teamwork are largely qualitative or experiential, and described by one researcher as lacking in rigour (Ashraf, 2004). There is, "an acknowledgement that group work has long suffered as a result of inadequate epistemology, and that principles of 'good practice' need to be identified and adhered [to] if effective group learning outcomes are to be realised" (Baskin et al., 2005, p. 23).

Therefore it is not surprising that a review of the literature reveals a



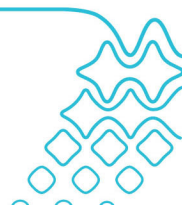
conceptualisation of teamwork – and the development of teamwork as a graduate skill – which focuses on the processes and outcomes of learning and team-building or group formation (Baskin et al., 2005; Pineda & Lerner, 2005; Page & Donelan, 2003; McKendall, 2000; Hansen, 2006; Huff et al., 2002; Pfaff & Huddleston, 2003; Kaazlauskas et al., 2007). For instance, “The idea of using team-building activities has often been suggested as a way to increase the overall success of a team” (Pineda & Lerner, 2006, p.19). Generally, most of the research has concentrated on addressing team-building challenges, processes and performance, rather than examining whether or not teamwork projects contribute to the students’ achievement of stated learning outcomes (McCorkle et al., 1999). There does seem to be evidence for a positive correlation between team-building processes and the various dimensions of positive team performance and achievement of learning outcomes (Pineda & Lerner, 2006; Page & Donelan, 2003); for example, Pineda and Lerner found that engaging in transition activities – such as establishing team goals, rules and guidelines; assessing member skills; and assigning roles – were positively associated with goal attainment, student satisfaction and learning. Team-building processes (either instructor-led or through student administrative processes) can also mitigate many of the problems associated with teamwork, which include specialisation of labour, social loafing, and inadequate rewards (Pfaff & Huddleston, 2003; McCorkle et al., 1999; Oakley et al., 2004).

### 3.4 Ethical practice

Although recent business scandals have acted as a catalyst for the extensive coverage of ethical practice in higher education, in the academic research literature regarding ethical practice, “little attention has been paid to undergraduate programs and curricula” as MBA programs proliferate (Nicholson & DeMoss, 2009, p. 214; Christensen et al., 2007). The teaching and learning of ethical practice is intended, like other attributes, to develop and enhance a variety of skills, competencies and behaviours including awareness and sensitivity; analytical skills; higher order thinking skills; and adaptation for a student’s future profession (Sims, 2002).

Two traditional approaches exist in regard to the teaching and learning of ethical practice: philosophical or theoretical, and practical (Hosmer, 2000; Hunt & Laverie, 2004; Lyer, 1998). The former places the emphasis on the background knowledge and analytical procedures needed for moral evaluation. In this approach, students are exposed to alternative ethical perspectives and well-established theoretical, religious and political conceptualisations of ethics (Hosmer, 2000). The practical view focuses more on the strategic and functional difficulties faced in business organisations and the application of ethics: “The critical issue is the means of achieving this balance between an active engagement with the issues and a critical analysis of the choices” (Hosmer, p. 171). Star and Hammer (2007) suggest that the locus of ethics instruction in business curricula should logically revolve around the decision-making process (p. 244).

Ritter (2006) notes that, “According to theorists, the ideal situation occurs when students learn basic philosophical theories underlying ethical decision-making in a required ethics class ... and ethics is further integrated throughout additional business classes to apply the concepts to specific contexts that the students may face in their careers” (p. 155). On the other hand, Felton and Sims (2005) point out that the, “fact that there exists a range of beliefs about the nature, function, and goals of ethics in personal, professional, and social life is a particularly relevant challenge” (p. 379). What also presents a challenge, as with the other attributes, is the dynamic and contentious conceptualisations of ethics which are informed by such a vast range of individual and societal contexts, from the historical, philosophical, religious, institutional and political through to the personal (Lam & Shi, 2008).



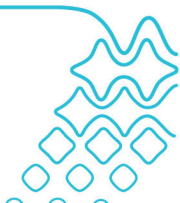
Ethical practice can be embedded in the learning process of critical reflexivity and is underpinned by ideas and preconceptions of morality and personal core values. The objectives and outcomes of the teaching and learning of ethical practice can be situated within a taxonomy of conceptual, procedural and professional knowledge and understanding. There is consensus in the literature regarding these objectives and outcomes (Sims, 2002; Weber & Glyptis, 2000; McDonald & Donleavy, 1995; Ritter, 2006; Felton & Sims, 2005; Falkenberg & Woiceshyn, 2008; Hosmer, 2000), and the theme that underpins these objectives and outcomes is the idea of moral development (Kohlberg, 1984). The first level of outcomes is generally accepted to incorporate: moral awareness; moral and critical reasoning; ethical sensitivity; ethical application and adaptation (behaviour, decision making); and ethical evaluation. While a student's level of achievement along this taxonomy will be affected by existing personal moral values, the key to the teaching and learning of ethical practice is the clarification of the distinction between ethics and moral values (Ritter, 2006). For example, "those wishing to ensure that students develop ethical dispositions, which extend beyond the practices of their profession, would need to transcend ethic-as-process components such as critical thinking and problem-solving" (Star & Hammer, p. 244).

### 3.5 Sustainability

The conceptualisation and advocacy for sustainability in general – and around education for and about sustainability – has been articulated at the national and international levels in a variety of institutional documents. The evolution of the concept has witnessed a shift from a focus on environmental education to a more holistic and integrated articulation in university documents across curricula. Pre-dating most of these documents was the creation of the notion of sustainable development, which originated as an international norm within the Stockholm Declaration (UNEP, 1972), and was concerned with the preservation and enhancement of the environment. The Brundtland Commission's (WCED, 1987) definition of sustainable development is now that most widely used, that is, "a process of change in which the exploitation of resources, direction of investments, orientation of technology development and institutional change are made consistent with future as well as present needs" (p. 9). Underlying this broad concept are the notions of ecological, social and financial or economic sustainability. This version has been widely articulated in many public and private institutions, including Macquarie University's own definition of sustainability.

The Brundtland Commission's conceptualisation was limited in terms of human needs and the difficulties of implementing the concern for future generations, and firmly entrenched the concept of sustainability in the neo-classical economic paradigm (Bannerjee, 2004). A further development came with the ratification of the Talloires Declaration (UNESCO, 1990), in which university administrators committed to sustainable development and broadened the dimensions of sustainability to include educational resources. Then came the UN Conference on Environment and Development in 1992, during which the wider international community reoriented education towards sustainability with a commitment to Agenda 21, which recognises, "education ... [as] critical for promoting sustainable development and improving the capacity of the people to address environmental and development issues (UNSD, 1992, 36.3). Furthermore, it was urged that sustainable development, "should be integrated in all disciplines".

The concept is still evolving and, according to Tilbury (2004), since Agenda 21 and the subsequent Johannesburg Summit in 2002, sustainability has come to be understood as a process of adaptive management and systems thinking, requiring creativity, flexibility and critical reflection. It was further emphasised at the summit that sustainable development must be located in all educational and disciplinary domains (Reid & Petocz, 2006). Subsequently, in 2004, the European Commission





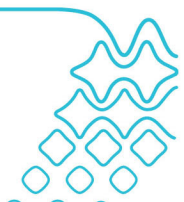
held its first regional meeting for education for sustainable development. Nationally, the Australian Research Institute in Education for Sustainability (ARIES) has conceptualised education for and about sustainability as requiring teamwork, critical thinking, and trans-disciplinary collaboration (Tilbury, Crawley & Berry, 2004): “It differs from the traditional environmental education approaches in that it goes beyond addressing values and attitudes of the individual to build their capacity for instigating and managing change” (p. 1).

As this discussion shows, sustainability envelopes such a diverse and sometimes contradictory range of paradigms that its conceptualisation is often simplified or reduced to maintaining three domains: economic, social and environmental. Contests and contradictions occur over attempts to maintain an equitable balance between these three domains, which include ideas of corporate social responsibility, triple-bottom line, product-life cycles, social justice, human needs, consumption, competition, preservation, growth, degradation, generational responsibility, biodiversity, development, management, resources, technology, and human rights. Since the Brundtland Commission, sustainability has implied the equitable integration of these domains and all they carry to, “meet the needs of the present without compromising the ability of future generations to meet their own needs” (UN, 1987). Thus an understanding has come to inform public discourse; namely that of ensuring equality for future generations; increasing and maintaining productivity; and meeting human needs.

Sustainability is now firmly established and embedded in corporate and public discourse, but remains less so in educational and academic discourse. The concept itself is controversial, and many academics agree that its location in the business curriculum needs to be critically positioned and oriented in order to promote students’ understanding, awareness and response to sustainability, and its relation to their own personal and professional lives (Christensen et al., 2007; Bannerjee, 2004; Springett, 2005; Wals & Jickling, 2002; Galea, 2004). The concept of sustainability suffers the same epistemic weaknesses as ethical practice, as it is predominantly confined to postgraduate courses and research involving MBA programs (Christensen et al., 2007).

In particular, there is a conceptual gap between corporate discourse on sustainability and a more critical, diverse discourse which seeks to move beyond the neo-classical growth paradigm (Bannerjee, 2004; Springett, 2005). This has implications for not only higher education’s articulation of sustainability, but also for appropriate teaching and learning approaches. Indeed, Wals and Jickling (2002) argue that the debate about the conceptualisation of sustainability can be an impediment, but nonetheless it can also represent an opportunity to engage students in critical knowledge building and questioning, and in the development of a range of graduate skills.

Bannerjee (2004) suggests that, at the corporate level, the focus of sustainability has generally been restricted to environmental impacts and a business-driven agenda, an agenda of long-term, competitive advantage in which equity is often unaccounted for. Springett (2005) suggests that the business curriculum has offered the greatest challenge to the corporate focus in its integration of ecological and social sustainability: “Education for sustainability ... has represented a threat to the orthodox paradigm of business and business theory” (p. 148). Thus, literature on business has often incorporated attempts to integrate sustainability into its own discourse, in which issues and solutions are explored with a focus on management, technical expertise, conservation and accountability, and alongside establishing a ‘business case’ for sustainability (Willard, 2004; Coulson & Thomson, 2006; Bridges & Wilhelm, 2008). Wals and Jickling (2002) also highlight this contradiction in the notion of ‘education for sustainability’ and the status of sustainability as a concept in education. They argue that the concept contradicts progressive notions of education



as, “it breathes a kind of intellectual exclusivity and determinism that conflicts with ideas of emancipation, local knowledge, democracy and self-determination” (p. 222).

Consequently some educators advocate for engagement of students critically with, and in the processes of, sustainability. Rather than teaching and learning being prescriptive, it is argued – in common with the other graduate skills – that processes need to be situated within constructivist pedagogy. Furthermore, it has been suggested that adopting a critical perspective on education for and about sustainability in activity and assessment design can enhance and promote a range of graduate skills, including critical thinking, ethical practice and teamwork (Bannerjee, 2004; Springett, 2005; Walks & Jickling, 2002): “A critical theorization of education for sustainability in the business studies curriculum influences not only the content, but also the philosophical and values base of the course, the pedagogical approach and the goal of student self-reflection” (Springett, p. 156). In this context, a multidisciplinary approach is regarded as essential, to enable students to critically engage with the issues. All of these complexities bring new teaching and learning opportunities: “In other words, serious attempts to integrate sustainability into higher education bring academics into whole new pedagogical worlds – experiential, epistemic and systemic” (Wals & Jickling, p. 229).

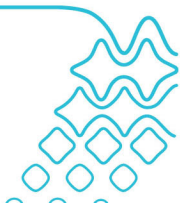
Similarly, the ARIES framework for sustainability calls for, “new learning approaches that help us to explore sustainability and build skills that enable change such as mentoring, facilitation, participative inquiry, action learning and action research” (Tilbury et al., 2004, p. 2). Higher education research in the teaching and learning of sustainability is a newly emerging area, exemplified by the recent creation of a number of new international journals, and demonstrates a number of limitations. It has been largely confined to postgraduate business curricula, in particular MBA programs (Christensen et al., 2007; Tilbury et al., 2004; Stubbs & Cocklin, 2008; Willard, 2004), and there is a lack of conceptual alignment across studies and disciplines, with limited empirical research or evidence to demonstrate the effectiveness of recommended activities and assessments. Those activities and assessment strategies offered as ‘best’ practice are generally resource intensive; time consuming; impeded by a lack of teacher training; and exclude the needs of students from non English speaking backgrounds.

### 3.6 Assessment of graduate skills

There has been recent concern with academic standards relating to the development and assessment of graduate skills. For instance, the Australian Universities Quality Agency (AUQA, 2009) states that one of the principal focuses of academic standards should be the development of standards of achievement for generic (graduate) skills. Although most Australian universities have produced statements on the skills they expect their graduates to possess, few have formalised academic standards against which to measure students’ achievement. A convergence of mapping graduate skills has taken place worldwide, as evidenced by the UK Quality Assurance Benchmark Statements (QAA, 2010); the European Tuning Process (Tuning Report, 2008); the consideration of a ‘Bologna Process for U.S. Eyes’ (Adelman, 2009); and the development of the Australian Qualifications Framework (AQF, 2010). However, these processes do not currently specify standards of achievement. Indeed, only a few Australian universities have embedded and made explicit reference to graduate skills in their assessment policies and there are few specific standards for achievement for graduate skills.<sup>2</sup>

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<sup>2</sup> The Association of American Colleges and Universities (AACU) have developed non-discipline specific assessment rubrics for a range of graduate skills, including critical thinking, teamwork and ethical reasoning. Although explicitly described as ‘not for grading’, the rubrics give a clear, though weak, conceptualisation of each graduate skill and how each skill could be assessed. For example, the teamwork rubric states that the assessment of teamwork can encompass such sources as self-



Student assessment can be firmly located within the concept of academic standards. Beyond a reputation that depends on size, research outcomes and history, the reputation of a university also depends on the academic standards that it sets for student achievement. AUQA recommends that, “Any consideration of academic achievement standards should take account of achievement in these more general areas (graduate attributes/skills)” (AUQA, 2009, p. 5).

AUQA (2009) also argues that, “unless academic achievement standards become a definite focus, the value of grades as ‘warrants’ of demonstrated intellectual and professional learning cannot be substantiated” (p. 7). However, the reform agenda for academic standards and outcomes-based learning has highlighted the under-development of assessment practices in higher education, and offers an opportunity for rethinking and reorienting assessment. For the effectiveness of student learning and student achievement of graduate skills, which is seen increasingly as the dominant outcome of higher education (Rigby et al., 2009), “Australian higher education would benefit from greater exploration of the possibilities for using assessment not only as a mechanism for making standards more concrete and explicit, but also as a more sophisticated and strategic tool for helping shape effective teaching and learning processes” (James 2003, p. 198).

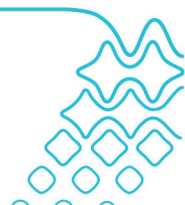
In the wider context of employer dissatisfaction, internationalisation and government and public concern over academic standards, it is crucial that the importance of assessment is acknowledged in the teaching and learning process. James and McInnis (2001) have these comments to offer: “Assessment literally defines the curriculum for most students – by spelling out the learning that will be rewarded, it is a potent strategic device for educators. Equally, poorly designed assessment has the potential to hinder effective learning or stifle curriculum innovation” (p. 4).

There is a lack of empirical evidence demonstrating the effectiveness of activities that can effectively promote certain graduate skills. This illustrates not only the problem of designing activities but also assessments that can accurately measure achievement of relevant learning outcomes while providing opportunities for students to enhance their learning and demonstrate their achievement. James (2003) suggests that, “The assessment of generic skills is uneven and far from fully integrated into assessment regimes” (p. 197). Academics’ decisions about the assessment of graduate skills can reflect their understanding of graduate skills, and while there is a growing body of research literature on graduate skill development, “the assessment of graduate attribute outcomes remains problematic” (Graduate Attributes Project, 2009).

This shift in the role of universities has also witnessed a parallel and complementary shift in the teaching and learning pedagogies employed: a shift from a knowledge-transmitting paradigm towards a constructivist model of teaching and learning. However, despite the current popularity of constructivism in university curricula, research has shown that constructivist principles are not always transmitted in practice (Tenenbaum et al., 2001).

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assessment, peer-assessment and an external assessor. The rubrics are useful for institutional-level evaluation and discussion around student learning, assessment and graduate skills.



## 4. Learning and teaching resources

### 4.1 Learning modules and activities

Our project aimed to advance existing knowledge through the design, development and dissemination of learning and teaching resources for the improvement of student learning outcomes in the four areas of critical thinking, ethical practice, sustainability and teamwork. In particular, this project has used: findings from previous research; student workshops and evaluations; and professional knowledge in order to design learning and teaching activities and academic standards.

The literature reviews described in Section 3 highlighted a number of weaknesses in the current practice of the teaching, learning and assessment of graduate skills. Significantly, there are no singular best practices for promoting and enhancing the development of graduate skills. Moreover, those practices that do exist and are recommended within the literature have not been thoroughly evaluated to determine whether they can effectively promote student learning of graduate skills. The review did identify normative principles and practices for learning; these provide the foundation for approaches to enhance student learning outcomes in the business curriculum.

The major findings of the graduate skills review include:

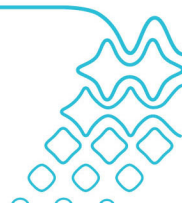
- It appears that the development of graduate skills is best fostered within the context of disciplinary learning. Thus within the discipline of business, more attention needs to be paid to how graduate skills are acquired and developed, and to the role of instructors' teaching and learning strategies in promoting and enhancing these skills.
- A learner-centred approach, located in constructivist pedagogy, is generally considered best practice as it situates the experiences, goals, and values of the students at the centre of the learning process, thus 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.

Therefore, it appears necessary for teachers to provide opportunities for students not only to develop their graduate skills, but also their self-regulation capabilities, which are considered to complement the development of any one graduate skill.

The Graduate Skills project builds on previous research by manipulating and embedding these principles of pedagogical theory into the design of learning and teaching activities, with the aim of improving student learning outcomes in relation to graduate skills. An important aspect of the development of these resources was their evaluation by students and teachers, using both qualitative and quantitative measures. The resources can also act as templates for the design of other activities to promote and enhance a variety of graduate skills across the business curriculum. (These resources are publicly available on the Graduate Skills website as clear and adaptable lesson plans <[www.graduateskills.edu.au](http://www.graduateskills.edu.au)>.)

A sustainability and teamwork resource that this project developed – the 'Gunns Mill Scenario' (see Appendix A) – exemplifies how this project has built upon existing knowledge, research and pedagogical principles. For instance, it:

- Sets out clear learning outcomes, which will allow for constructive alignment and



more effective and targeted assessment.

- Allows students to critically engage with the concept, policy and practice of sustainability in the business environment rather than prescribing a problematic and narrow 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.
- Is based on 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.
- Builds on and develops 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.

All modules and activities developed or refined for use in the project are presented in Part 2 of this report. Our approaches included:

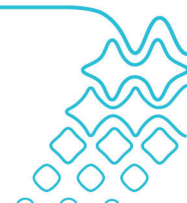
- an intensive workshop model (see Section 6.2 for more detail)
- other case studies, such as one on drug testing and another on the Moreton Bay (Queensland) oil spill
- the immediate feedback assessment technique
- icebreakers
- debates
- the jigsaw method
- ethical dilemma scenarios.

## 4.2 Standards of Achievement

Assessment practices and academic standards were the other major focus of the project, with the goal of promoting and supporting strategic change in higher education. A second literature review was produced to illuminate current practices – by building on the principles, practices and gaps identified in the review, the project has contributed significantly to both the Academic Standards and Assessment and Reporting Practices topics in the ALTC program priorities.

Despite a global drive and reform agenda towards academic standards in higher education, research on standards for the business curriculum has been minimal and under-theorised. There is a particular lack of information on academic standards pertaining to the development and assessment of graduate skills. Even though most Australian universities have produced statements on desirable graduate skills, few have formalised academic standards against which to measure students' achievements.

Based on the findings of the literature review, the team developed academic standards for the four particular graduate skills (see Standards of Achievement, Tables 1–4) and a generic model for standards of achievement (see Table 5). The process itself was particularly useful, firstly, because it enabled the project team to conceptualise each graduate skill in a consistent way; this will contribute to how this skill is embedded and assessed in the business curriculum into the future. (A major weakness identified in the first literature review was that of confusion and inconsistency in the conceptualisation of graduate skills.) Secondly, the assessment literature review identified several major gaps in current assessment practices in



higher education, in particular, the lack of consistent, clear and developmental academic standards for assessment of student learning.

Thus, the proposed academic standards build directly on previous research about assessment criteria; conceptual, procedural and professional knowledge; assessment for learning; and learning taxonomies. The standards in the tables are focused at the graduate level, so that higher levels within the suites are appropriate for third or fourth year assessments. Academics can then adjust them as necessary for use at lower levels. The standards – as presented in the tables – include guidance on creating criteria and levels of achievement to suit the particular task being assessed as well as the appropriate level for students.

The articulation of these standards – in particular, the verbs that express how students are expected to learn/demonstrate achievement – provides the opportunity to be constructively aligned with learning outcomes and learning activities; this supports theories of constructive alignment for student learning. Using both Bloom's Taxonomy and the SOLO Taxonomy as guides, the standards allow 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.

These standards also discriminate and recognise three different domains of knowledge, in accordance with cognitive learning theory – conceptual, procedural and professional knowledge. Not only does this allow teachers to design learning and assessment tasks that give students the opportunity to demonstrate their conceptual understanding of the graduate skill, but also to show their professional application of the skill's principles and practices.

Significantly, feedback and results from student evaluations and testing at the project's national workshop in April 2009 also informed the development of these standards (described in Section 8).

Also provided in this report is a generic standards rubric, which is not specific to any particular discipline (see Table 5). This allows teachers, faculties and institutions to adapt the standards for their own assessment purposes across discipline and skill domains.

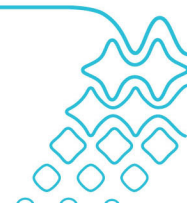


Table 1. Critical Thinking Standards of Achievement

	Conceptual	Procedural	Professional
<b>Level 4</b> <b>HD</b>	<p>Conceptualises critical thinking as the theorising and assessment of information, ideas, materials using various modes of thinking for effective interpretation.</p> <p>Conceptualises critical thinking as the articulation of an argument to support a particular perspective and its justification of one or more conclusions drawn.</p>	<p>Thinks open-mindedly about a situation, recognising and assessing their assumptions, implications, and practical consequences in coming up with alternative solutions.</p> <p>Gathers and assesses relevant information, using abstract ideas to interpret the given materials effectively.</p>	<p>Is able to synthesise, analyse and evaluate a variety of viewpoints of a complex situation and articulate clearly well-reasoned solutions and conclusions.</p>
<b>Level 3</b> <b>D</b>	<p>Conceptualises critical thinking as a self-monitoring and self-correcting process; discernment which can also be applied to work produced by their peers.</p> <p>Conceptualises critical thinking as the consideration of various perspectives to formulate clear, concise arguments.</p>	<p>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.</p> <p>Can form good, clear arguments that include various perspectives.</p>	<p>Comes to well-reasoned conclusions and solutions about a professional situation, testing them against relevant criteria and standards.</p>
<b>Level 2</b> <b>C</b>	<p>Comprehends critical thinking as the ability to discern patterns and relationships between concepts.</p> <p>Understands the application of basic critical thinking concepts such as a reasoned argument.</p> <p>Understands critical thinking as the selection, collection, analysis, interpretation and evaluation of source materials.</p>	<p>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.</p>	<p>Able to investigate a professional situation and determine facts and fallacies appropriate to the situation.</p>
<b>Level 1</b> <b>P</b>	<p>Defines thinking as one or more of its basic manifestations like logic, types of argument, bias and laws.</p>	<p>Can apply logical thinking (inference and deduction) to simple logic exercises.</p> <p>Is able to take simple arguments and deconstruct them to determine the conclusion and the evidence that supports that conclusion.</p>	<p>Demonstrates a basic understanding of logic and analysis of argument but has little understanding of how to apply these in professional situations.</p>
<b>Level 0</b> <b>F</b>	<p>Defines critical thinking as memorisation and/or the acceptance of information without filtering.</p> <p>Finds sources only to confirm their own point of view.</p>	<p>Unable to express themselves in a logical manner.</p> <p>Unable to analyse an argument or make a valid argument; accepting information at face value.</p>	<p>Unable to apply critical thinking tools to professional situations.</p>

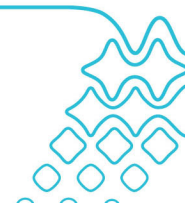


Table 2. Ethical Practice Standards of Achievement

	Conceptual	Procedural	Professional
<b>Level 4</b> <b>HD</b>	<p>Demonstrates an in-depth and substantive knowledge of the theoretical frameworks, accurately explaining the details of each.</p> <p>Demonstrates critically reflective self-awareness, discussing and analysing core personal beliefs and their sources with clarity.</p>	<p>Demonstrates ability to identify ethical issues in complex, multilayered contexts and can identify cross-relationships between issues.</p> <p>Demonstrates the independent ability to apply the main frameworks to an ethical dilemma, find solution/s, and consider the implications of such.</p>	<p>Able to innovatively evaluate and adjust ethical conduct strategically to fit the organisational context and recognises the need to act with integrity and consideration of responsibility to society.</p>
<b>Level 3</b> <b>D</b>	<p>Demonstrates substantial knowledge of the theoretical frameworks and their details that exist to resolve ethical dilemmas.</p> <p>Demonstrates critical self-awareness, discussing and analysing personal core beliefs and their sources.</p>	<p>Able to recognise ethical issues in complex, multilayered situations or identify cross-relationships between issues.</p> <p>Demonstrates ability to apply theoretical frameworks in identifying alternative solutions to ethical dilemmas without considering full implications.</p>	<p>Demonstrates an appreciation of the main ethical issues and the complexities, interrelationships and connection between them and professional practice.</p>
<b>Level 2</b> <b>C</b>	<p>Demonstrates an understanding that ethical practice involves more than personal beliefs recognising the relevance of external authorities, societal rules, and organisational agendas.</p> <p>Demonstrates heightened self-awareness, stating both core personal beliefs and their sources.</p>	<p>Demonstrates the ability to recognise and analyse basic/obvious ethical situations and has a basic understanding of how ethical frameworks might be applied to decision making.</p>	<p>Can identify the key issues involved and demonstrates a basic knowledge of their complexities, interrelationships and impact on professional practice.</p>
<b>Level 1</b> <b>P</b>	<p>Demonstrates a basic understanding of ethical practice as something to do with the notion of right and wrong.</p> <p>Able to state either core personal beliefs or their sources, but not both.</p>	<p>Can identify the main ethical frameworks.</p> <p>Demonstrates the ability to recognise basic/obvious ethical issues of given situation.</p>	<p>Demonstrates a basic understanding of the issues but does not demonstrate an understanding of their complexities and significance for professional practice.</p>
<b>Level 0</b> <b>F</b>	<p>Unable to identify a major ethical framework.</p> <p>Unable to demonstrate ethical self-awareness.</p>	<p>Unable to demonstrate the application of the main ethical frameworks in any given situation.</p>	<p>Unable to demonstrate a basic understanding of the issues or significance for professional practice.</p>





Table 3. Sustainability Standards of Achievement

	Conceptual	Procedural	Professional
<b>Level 4</b> <b>HD</b>	Demonstrates a critically reflective theorisation of the concept, recognising its evolution in the public discourse, controversial nature and location within certain theoretical and disciplinary paradigms.  Defines sustainability as a complex process of adaptive management and systems thinking across disciplines and sub-discipline areas.	Identifies and critically examines the full range of sustainability aspects in any given situation, recommending and justifying an appropriate response.  Demonstrates the ability to make connections with other attributes, such as critical thinking, ethical practice and teamwork.	Demonstrates the ability to innovatively evaluate and adjust sustainable conduct strategically to fit the organisational context and consider competing demands.
<b>Level 3</b> <b>D</b>	Demonstrates an understanding that the concept is constitutive of more than personal views and the three domains, critically recognising the relevance of external authorities, societal rules and organisational agendas.  Demonstrates knowledge of certain aspects of the process of sustainability such as lifecycles, stakeholder interpretation and systemic thinking.	Demonstrates the ability to analyse the sustainability aspects of given situations and identify and support a range of recommendations for action using certain processes and frameworks.	Demonstrates an appreciation of the main sustainability issues, taking account of legislative and organisational requirements.
<b>Level 2</b> <b>C</b>	Discerns sustainability across three broad domains of economic, social and environmental, acknowledging the notion of generational responsibility.	Demonstrates a knowledge of the existence of sustainability frameworks and a basic understanding of how those frameworks might be applied to decision making.	Can identify the key issues involved and demonstrates a basic knowledge of their impact on professional practice.
<b>Level 1</b> <b>P</b>	Demonstrates a basic understanding of the environmental domain of sustainability.	Demonstrates knowledge of the ways of dealing with environmental aspects of sustainability, such as recycling.	Demonstrates a basic but limited understanding of the resource issues of sustainability in the workplace.
<b>Level 0</b> <b>F</b>	Understanding of sustainability limited to the idea of “keeping self or business going”. Unable to define sustainability in any of the three broad domains.	Unable to use any aspect of sustainability beyond the definition. Unable to apply even basic notions of sustainability to practice.	Only focus is keeping their business or employment going. Unable to apply legislative requirements to a professional situation.

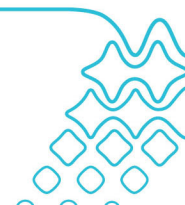


Table 4. Teamwork Standards of Achievement

	Conceptual	Procedural	Professional
<b>Level 4</b> <b>HD</b>	<p>Demonstrates an understanding that teamwork involves individuals cooperating and collaborating to maximise outcomes in achieving a shared goal.</p> <p>Conceives the notion of teamwork as involving monitoring, individual accountability and reporting.</p> <p>Understands that teamwork requires effectively managing and negotiating group dynamics inherent in teamwork.</p>	<p>Collaborative leader. Demonstrates the ability to facilitate and effectively synthesise team member's contributions.</p> <p>Demonstrates ability to lead, and to develop relationships and procedures for working with others in novel ways.</p> <p>Demonstrates a deep commitment to the team's goals through substantive contributions both during and outside of team meetings.</p>	<p>Demonstrates the ability to take a strategic view to lead and work with others to enable innovative outcomes in complex situations.</p> <p>Demonstrates the ability to directly address destructive conflict, supporting the management and resolution of conflict in a professional manner that strengthens team cohesiveness and effectiveness.</p>
<b>Level 3</b> <b>D</b>	<p>Demonstrates awareness that teamwork involves coordinating individual efforts to maximise outcomes to achieve a shared goal.</p> <p>Understands that teamwork and effective team-building requires communication, leadership, social and interpersonal skills.</p> <p>Demonstrates an awareness of the group dynamics that are inherent in the team-building process.</p>	<p>Unifying co-operator. Demonstrates ability to articulate a shared goal and to collaborate with others to maximise the outcomes from shared work.</p> <p>Demonstrates substantial individual contributions to team's goals outside of meetings/sessions.</p>	<p>Demonstrates capability to take the initiative in working cooperatively to maximise the outcomes of a shared goal.</p> <p>Demonstrates the ability to identify and acknowledge conflict, but engages and responds constructively to it. Resolutions are sought and the team is focused on shared goals and task.</p>
<b>Level 2</b> <b>C</b>	<p>Demonstrates awareness that teamwork is a combination of individual effort designed to achieve a given goal.</p> <p>Conceptualises teamwork as a team-building process that requires cohesion.</p>	<p>Cooperative follower. Some guidance required. Demonstrates ability to work with others to achieve a given goal.</p> <p>Demonstrates satisfactory contributions.</p>	<p>Demonstrates capability to adapt to a given professional situation and people in order to work towards a given goal.</p> <p>Demonstrates the ability to identify conflict. However, does not constructively address this nor focusing the team on the shared goal and task.</p>
<b>Level 1</b> <b>P</b>	<p>Conceptualises teamwork as a process that involves individual contributions to a shared task.</p>	<p>Dependent follower. Working alone with little or no interaction with others. Basic understanding of the shared nature of the task.</p> <p>Demonstrates basic contributions to team meetings/sessions.</p>	<p>Demonstrates basic capability to work cooperatively.</p> <p>Has basic understanding of the significance of the shared objectives to practice.</p>
<b>Level 0</b> <b>F</b>	<p>Unable to demonstrate any understanding of teamwork principles and processes.</p>	<p>Unable to contribute constructively to group processes.</p> <p>May act as a disunifying or disruptive influence and retard process of reaching a shared goal.</p>	<p>Unable to demonstrate an understanding of the need to act cooperatively.</p> <p>Cannot recognise when this is appropriate or required in the work context.</p>

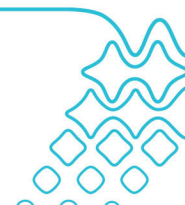
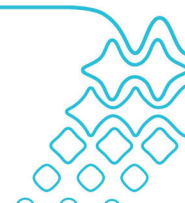


Table 5. Model Standards of Achievement

	<b>Conceptual</b> Domain-specific and/or skill-specific conceptual knowledge – ‘knowing that’ (i.e. concepts, facts, propositions – surface to deep) (e.g. Glaser, 1989)	<b>Procedural</b> Domain-specific and/or skills specific procedural knowledge – ‘knowing how’ (i.e. specific to strategic procedures) (e.g. Anderson, 1993)	<b>Professional</b> Professional knowledge - ‘knowing for’ (i.e. values, attitudes) related to practice (e.g. Perkins et al., 1993), includes graduate capabilities
<b>Level 4</b> <b>HD</b>	The concept is linked and integrated with other concepts, resulting in a new pattern of understanding. The depth and breadth of the concept is understood in such a way that the individual is inspired to reorganise other concepts, and motivated to make creative and innovative applications.	Demonstrates the capacity to create/develop new valid procedures. Rules are applied in novel ways, or new rules are derived from deep understanding.	Demonstrates a strategic view to enable innovative outcomes in complex situations.
<b>Level 3</b> <b>D</b>	The understanding of concept is broadened, appreciated from different angles, and this elaboration reflects in the ability to consider the concept in other contexts and from different perspectives.	Demonstrates the ability to select appropriate procedures in a given context. Procedures no longer need to be given.	Demonstrates the ability to adapt to new environments.
<b>Level 2</b> <b>C</b>	Some personal meaning has been extracted and their understanding reflects this internalised view. The concept has become a part of their knowledge. Nevertheless, the concept remains narrow and shallow and relatively disconnected from other concepts.	Demonstrates the ability to apply given rules and procedures in a variety of contexts and to novel problems.	Can evaluate a professional situation and identify key issues.
<b>Level 1</b> <b>P</b>	Demonstrates the ability to describe and define the basic concepts of the skill, subject-matter, and/or knowledge domain, but has not demonstrated an ability to be able to elaborate or reflect on the meaning of the concept(s).	Demonstrates knowledge of the rules and can practice the rules of a given procedure and/or skill.	Demonstrates a basic understanding of processes and functions but basic understanding of the significance of these in professional practice.
<b>Level 0</b> <b>F</b>	Demonstrates inability to describe and define the basic concepts of the skill, subject-matter, and/or knowledge domain.	Demonstrates no knowledge of the rules and is not able to practice the rules of a given procedure and/or skill.	Demonstrates no understanding of processes and functions or the significance of these in professional practice.



### 4.3 Links to other ALTC projects

The Graduate Skills project outcomes relate to these ALTC projects:

‘Business As Usual? A collaborative and inclusive investigation of the existing resources, strengths, gaps and challenges to be addressed for sustainability in teaching and learning in Australian university business faculties’ (Freeman et al., 2008)

As part of the ALTC Discipline-Based Initiatives Scheme, the ABDC conducted this scoping study of the challenges, issues and opportunities facing business education. The study identified key themes of concern and interest through extensive research and consultation with academics and business professionals. It was recommended that three funding proposals be submitted for further research into these areas, one of which was our Graduate Skills project. The data collected and analysed from industry representatives in the scoping study allowed our team to focus on researching the voice of students and academics in the debate over graduate skills.

‘Engaging industry: embedding professionally relevant learning in the business curriculum’ (Theo Papadopoulos (lead), Tracy Taylor, Eveline Fallshaw, Michael Zanko; funded in 2008)

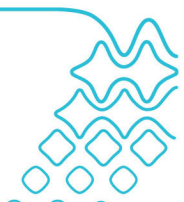
This project was initiated by the ABDC T&L Network in response to the need for graduates to be career- and work-ready, as identified in the *Business As Usual?* scoping study. Employability skills feature in all undergraduate programs in Australia, and universities are increasingly mindful that graduates’ transition into the workplace should be supported by a range of preparatory initiatives in the curriculum. The project team has established a framework for categorising professionally relevant learning in the business curriculum; identified good practice principles for enhancing professionally relevant learning; developed exemplary case studies showcasing innovative curricula, pedagogy and assessment models; and analysed the engagement of industry in developing, delivering and evaluating business curriculum. Complementary to this project, the Graduate Skills project has developed professionally relevant teaching and learning resources for the graduate skills valued by industry, as informed by industry feedback.

‘Beyond numbers: valuing quality teaching’ (Jenny Kent (lead), Fiona Rohde, Marie Kavanagh, Beth Tennant, Graeme Mitchell; funded in 2008)

The *Beyond numbers* project was also initiated by the ABDC T&L Network, in this case to address widespread concerns across Australian business faculties about the low quality of value attributed to teaching. The project aims to embed strategic systemic approaches to enhancing the value of teaching in business faculties. It is identifying appropriate indicators of quality teaching, and related policies and procedures to support and value quality teaching. Another aim is to increase academic recognition of the need for and benefits from developing teaching capacity and leadership.

‘Facilitating staff and student engagement with graduate attribute development, assessment and standards in business faculties’ (Tracy Taylor (lead), Darrall Thompson, Lyn Simpson, Andrew Paltridge, Mark Freeman, Lesley Treleaven, Fiona Rohde; 2008)

Here an approach was developed to embed graduate attributes in the business curriculum using an online assessment system. The project collected practice-based evidence of how students develop their graduate attributes during their course. It focused on introducing academics to methodologies of embedding graduate attributes into their teaching, through aligning assessment criteria and feedback with



graduate attributes. Where this project has demonstrated a system for embedding graduate attributes, the Graduate Skills project has provided specific learning modules and assessment standards for staff to develop and assess the four targeted graduate skills.

‘Accounting for the future: more than numbers’ (Phil Hancock (lead), Bryan Howieson, Marie Kavanagh, Jenny Kent, Irene Tempone; 2009)

This project undertook comprehensive consultation with: employers of accounting graduates; professional accounting bodies; a sample of public sector bodies and private sector companies; accounting students and recent graduates; and business academics. The research identified various initiatives and strategies for developing and assessing non-technical skills in subjects that are required for accreditation by professional accounting bodies. The study identified two of the skills targeted in the Graduate Skills Project – that is, teamwork and problem solving (relevant to critical thinking) – as non-technical skills valued by professional accounting bodies, a range of accounting firms, recruiters, academics, graduates and students.

The Graduate Skills project formed collaborative links with the following ALTC projects:

‘The national graduate attributes project: integration and assessment of graduate attributes in curriculum’ (Simon Barrie (lead), Clair Hughes, Calvin Smith, Kate Thomson; 2008)

This scoping study investigated institutional strategies and policy issues related to embedding and assessing graduate attributes. A range of curriculum renewal strategies and recommendations were identified as significant for achievement of graduate attributes in Australian universities, and resources were developed for embedding and assessing graduate attributes. The project also established an international network of discipline and strategic learning experts to form an ongoing community of practice. The findings of our graduate skills literature review were reviewed by the GAP project team, and the literature review in full was hosted on the GAP website. In turn, the Graduate Skills project drew on GAP findings and outcomes to inform the design of learning and teaching materials and strategies.

‘Learning and Teaching Academic Standards’ (Australian Learning & Teaching Council; funded in 2009)

In this project, ALTC disciplinary scholars are working with discipline communities to define learning and teaching standards in the context of regulatory environments. The project outcomes will be discipline-specific learning outcomes, including a subset of national core learning outcomes; universities will then need to ensure that curricula are aligned with program goals and that suitable program-embedded assessment is designed. The Graduate Skills project standards have fed directly into this process, with the Discipline Scholar for Business, Management and Economics, members of the Leaders Forum and a member of the Accounting Expert Advisory Group providing constructive criticism of the Graduate Skills standards. Our projects’ exemplars and guides on use of the standards will be especially useful for business academics in the context of implementing LTAS project outcomes.

‘Capstone courses in undergraduate business degrees: better course design, better learning activities, better assessment’ (Elizabeth van Acker (lead), Janis Bailey, Lorelle Frazer, Raymond Hibbins, Keithia Wilson; funded in 2010)

This recently funded project has been initiated in response to a broad lack of understanding about the purpose of capstone courses within undergraduate



business degrees, and about the best approaches to course design, learning activities and assessment. It will develop resources to enable universities to improve the design, delivery and assessment of their undergraduate business capstone courses, ultimately enhancing student learning outcomes. The Graduate Skills learning modules, standards and guides will provide a starting point for the project's planned resources on accessible, practical guides regarding the design, learning activities and assessment of capstone courses in business programs.



## 5. Dissemination

The Graduate Skills project incorporated the use of a wide range of dissemination strategies. We aimed to consult with as many stakeholders as possible, to inform them about the processes and products and to receive suggestions for inclusions and improvements, with a focus on multi-directional transformation. A diversity of strategies was implemented (described in more detail below) including:

- workshops for students and academics in a variety of locations
- publications in academic journals and series
- presentations to ABDC T&L Network meetings
- presentations at conferences
- presentations at the project team institutions
- embedding learning models at the project team institutions
- establishment of a Graduate Skills website, which showcases the processes and presents learning and teaching resources produced during the project.

### 5.1 Workshops

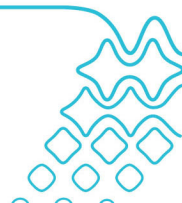
A key principle underpinning the concept of embedding is that it is not simply a process of information transfer but rather that it involves a degree of transformation in the way that graduate skills are conceived and applied to relevant situations; for example, through case studies, problem solving, debates and class discussion. A critical factor throughout the project, therefore, has been the quality of the interaction between student, teacher and resource materials. A workshop scenario was selected as an appropriate transformative mechanism, and there is a detailed description of the model we used in Section 6.2.

#### National workshop: students and academics

Direct student participation and engagement with materials has informed the development and refinement of learning modules and standards throughout the project. Thirty-five students from the seven team institutions around Australia participated in a three-day workshop, 'Building Business Professionals', in Sydney (April 2009). The workshop featured a welcoming icebreaker activity session, interactive mini-lectures and eight learning modules. Students were tested before and after the workshop on their understanding of the four graduate skills; allocated to teams for collaborative work and presentations; and asked to provide feedback on the materials. Student presentations on the final day were viewed by visiting industry liaison representatives from Deloitte Australia, General Electric and Resource 88 Centre for Sustainable Practice. The workshop was facilitated by the team members, who worked closely with students to investigate ways of enhancing student receptiveness to learning and practising each of the four skill areas.

The workshop was a crucial step, as it affirmed the relevance of the graduate skills selected and gave the team confidence that the theoretical underpinnings of the project were educationally sound and resonated with students. It also attested to the efficacy of social interaction as an effective means of improving students' understanding of these capabilities. The workshop provides a transformational model for professional development.

Student participants responded enthusiastically to the workshop and many gave presentations to external audiences advocating the benefits of graduate skills, based on their positive experiences at the workshop. For example:



- Edith Cowan University participants explained the relevance of graduate skills and the national workshop to first year students in the pre-existing ECU Business Edge generic skills units (August 2009).
- University of Canberra participants briefed the Faculty of Business and Government Education Committee about the learning modules and embedding strategies (May 2009).
- University of Southern Queensland (USQ) students showcased the icebreaker material at the 9th Students in Free Enterprise Conference, Sydney (July 2009); the icebreakers have now been permanently included in the annual conference.
- USQ students used the teamwork modules in the USQ BEAMS mentoring program in local school.
- La Trobe University students formed a reference group that meets quarterly to provide feedback on new teaching and learning initiatives in the School of Management.

These flow-on student activities represent encouraging and significant outcomes in terms of dissemination and impact. Successful uptake of graduate skills at the undergraduate level relies not just on learning and teaching policy and procedure, but also student acceptance.

#### **Northern Australia workshop: students and academics**

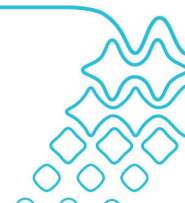
A second workshop was held in Brisbane in July 2010. This brought together student and academic participants from 13 universities in the northern region of Australia, including 25 students from five universities in south-east Queensland and 18 academics from nine universities; the universities represented included Central Queensland University, Charles Darwin University, Griffith University, James Cook University, Southern Cross University, The University of Queensland, University of Southern Queensland, and University of the Sunshine Coast.

The workshop adopted a 'hands on' approach and ran a concurrent program involving both students and academics. Learning modules and activities structured around the four skills as utilised in previous workshops were adapted (based on feedback) in order to accommodate the needs of both groups of participants. The program resulted in staff and students being engaged together in the activities – students doing and learning; academics observing, and reflecting on practice and application. Academics also applied the standards of achievement rubrics (outlined in Section 4.2) to measure the outcomes of student work, and their comments on the predictability, usability and application of these rubrics were very insightful. Academics were also involved in providing feedback to the students on various activities conducted over the three days. Student presentations on the final day were viewed by visiting industry personnel from CPA Australia and the Institute of Chartered Accountants Australia.

Both academic and student feedback was very positive, and there were many supportive emails after the event congratulating the organisers and, in particular, the presenting team. Each of the participating academics indicated they would adapt the learning modules and activities used in the workshop, and use the standards of achievement to create their own assessment rubrics. Some academics' comments indicated their intention of involving their colleagues in revising practice in developing and assessing graduate skills.

#### **Macquarie University workshop: students and academics**

A three-day residential workshop for 22 high-achieving students was held at





Macquarie University (July 2010). Academics and educational developers from a range of disciplines – including the Director of Sustainability at Macquarie and the President of Australasian Campuses Towards Sustainability – facilitated the workshop sessions. Each session was structured around the four skills targeted by the project, in addition to an introductory session on icebreakers. Facilitators ran the Graduate Skills learning modules, with the exception of one academic who created a new module based on the jigsaw method used in the Gunns Mill Scenario learning module (Appendix A). Student outcomes were very positive, with a high level of engagement which is continuing in the form of a Facebook group of participants.

### Victoria workshop: academics

Twenty-six academics and educational developers participated in a hands-on, practical half-day workshop, 'Embedding Graduate Skills', held in Melbourne (June 2010). The academics who attended the workshop included heads of school, academic skill advisors and academic developers, and they came from Australian Catholic University, La Trobe University, RMIT University, Swinburne University of Technology, University of Ballarat and Victoria University. Academic participants shared their own conceptions of graduate skills, and used a selection of case studies and processes from the Graduate Skills website in a series of practical exercises. These were linked to the standards developed for each of the graduate skills through discussion and practical exercises in the development of rubrics. The workshop concluded after half a day with a general discussion of how these could be adapted for the participants' teaching practice, and the ways in which their conceptions of graduate skills had changed as a result of the workshop.

Of the evaluation responses from these academics, 94 per cent stated that the project website contained materials that they could use in their teaching; 100 per cent indicated that they had learnt something useful about graduate skills and their assessment standards which they could adapt for use in their subject area; and 79 per cent included in their comments that they would indeed adapt the learning modules for their teaching.

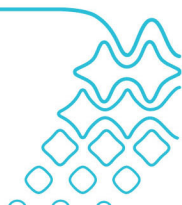
### New South Wales workshop: academics

Twenty-two academics from universities around Australia attended another half-day workshop at Macquarie University during Learning and Teaching Week (September 2010). Following an overview of the range of project materials, the workshop focused on the development and use of Standards of Achievements for assessing graduate skills. The facilitators led a discussion about the two 'dimensions' of such a standards rubric: the types of knowledge (conceptual, procedural, professional) and levels of attainment (HD, D, C, P, F).

In groups, participants considered a graduate skill that had not been examined in our project – creativity – and investigate how a rubric for assessing creativity might be constructed. Interesting differences emerged between the groups working on this question. Some designed a task that might be used to assess creativity (designing and setting up a blog on a particular topic) and drew conclusions about the overall standards rubric from this activity. Another group grappled with the nature of creativity itself and the different aspects and levels at which it could be demonstrated. The lessons and feedback from this workshop will provide background for further workshops on the topic of assessment and standards of graduate skills.

## 5.2 Academic publications

The team will publish a special edition of *Asian Social Science* dedicated to strategies for teaching, assessing and embedding graduate skills in business



developed in the project. The papers include an investigation of sustainability and ethics as graduate dispositions in business education, examples of developing critical thinking in first year students, using the workshop model for high achieving students, and using icebreakers to facilitate students' transition to the university environment, amongst others. The special edition will be published in April 2011.

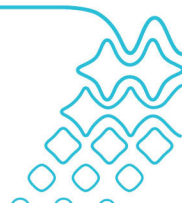
The team will publish a case study on the project in the UK Higher Education Academy *Enhancing graduate impact* publication. This is a joint Subject Centre case study publication between the Business Management Accounting and Finance Network and Hospitality, Leisure, Sport and Tourism Network, and will focus on the impact that graduates are likely to deliver outside education. The case study showcases the project resources and discusses their implementation at a program level at the University of Tasmania and in a workshop for high-achieving students at Macquarie University. These will be received by an international audience as examples from the Australian higher education sector of effective strategies to develop graduate skills across a range of subject programmes. *Enhancing graduate impact* is due for publication in June 2011.

### 5.3 Presentations

Presentations have been made at each of the five ABDC T&L Network meetings since January 2009. The team has benefited from the input of 38 Associate Deans (Learning and Teaching) from the early stages of the project, during selection of the four graduate skills, through to the development and finalisation of learning modules and standards and other project activities.

Presentations have also been made at each of our participating universities. In addition team members have given a number of presentations at conferences. These are listed below and are available online  
<[www.graduateskills.edu.au/project](http://www.graduateskills.edu.au/project)>

- The project's teamwork learning modules and standards were featured in a one-hour workshop – led by one of the team members – at the Australian Catholic University (ACU) Learning and Teaching Conference (July 2010). The workshop showcased how teamwork skills can be developed and assessed from first year through to third year, and practical ways in which teachers can help students learn how to work effectively in teams were addressed.
- A paper and a poster were also presented by one of our team at the Australian Technology Network Assessment Conference (November 2009). The paper 'Embedding generic skills means assessing generic skills' featured in the session 'Assessing in the Disciplines' and was published in the conference proceedings as a research paper (Thomas et al., 2009).
- A presentation on the project, titled 'Embedding graduate attributes in an undergraduate business program – ACU', was given by a team member at the 3rd National Graduates Attributes Project Symposium in Melbourne. It was featured as a practical example of embedding generic graduate skills in the curriculum (August 2009).
- A poster presentation was included in the Accounting and Finance Association of Australia and New Zealand conference in Adelaide (July 2009).
- A presentation to An Afternoon of Enhanced Sustainability at Macquarie University about the sustainability component of the project has been distributed on [YouTube](#) (Wood, 2009).
- The project was also featured in the 3rd Annual Australian Higher Education Congress (March 2010) through a presentation by the Executive Dean of the Faculty of Business and Economics, Macquarie University, titled 'Graduate capabilities for the new business environment'.



## 5.4 Embedding learning modules

Learning modules were implemented and integrated into a number of undergraduate business units during the 2009 spring semester at the project team institutions. This engaged course coordinators, lecturers and a wider representation of students at these universities. It also provided an opportunity to evaluate the effectiveness of learning modules in a practical setting outside a workshop context. The team received feedback through print and online evaluation forms completed by teachers and students. A more detailed description of implementation is given in Section 6.1.

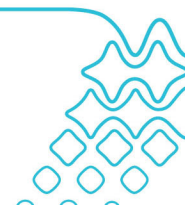
## 5.5 Graduate Skills website

The Graduate Skills project website <[www.graduateskills.edu.au](http://www.graduateskills.edu.au)> is the platform for the teaching and learning resource package developed during the project. This package contains exemplars, templates and guides on using, adapting and creating modules, standards and teaching strategies for graduate skills. More specifically, the website offers the following resources:

- learning modules (activities and resources) in PDF and Word format to allow users to adapt the modules to their specific teaching needs
- standards of achievement for sustainability, ethical practice, teamwork and critical thinking (as in Tables 1–4 above)
- a guide to using the standards to create criteria for assessment rubrics;
- a guide to using the standards to design learning outcomes for activities, assessment and/or units
- a generic set of standards, which can be used as a basis for creating standards in other disciplines (as in Table 5 above)
- a generic template that can be used by academics to develop their own modules, which they can upload to the website for review by team members and then they can post a final version
- both literature reviews on graduate skills and assessment
- links to academic papers and conference presentations by team members
- video interviews with industry representatives, academics and student participants on the value of graduate skills
- detailed run-sheets to serve as a guide to facilitating graduate skills workshops with students and academics.

The website is designed to be the resource hub for the teaching and learning of graduate skills in Australian and international tertiary institutions. The interaction of academics, students, graduates and business professionals with the website should encourage them to participate in the continual creation of teaching and learning around these graduate skills. The website is linked to the Graduate Skills presence on Twitter, Facebook and YouTube. Since the website was created in October 2009, there have been 6,745 page views from 1,963 visitors in 56 countries (statistics current at September 2010). The most visited pages and downloaded documents are the learning modules, standards and academic papers relating to the project. The website will continue to be maintained and updated for at least the next three years.

The teaching and learning resources are also available on the Graduate Skills ALTC Exchange page <[www.altcexchange.edu.au/group/generic-skills-business-curriculum](http://www.altcexchange.edu.au/group/generic-skills-business-curriculum)>



## 6. Implementation

In this section we offer some practical descriptions of models based on our experience in the Graduate Skills project, along with discussions about potential advantages and disadvantages for guidance. 'Models of embedding graduate skills' and 'Workshop models' have been selected for discussion here, as being areas that offer utility but which can be difficult to implement. A discussion of experiences with implementation at the partner institutions is also presented, in Section 6.3.

### 6.1 Models of embedding graduate skills

Different universities have different contexts and so may emphasise different skills. In this project, we identified and developed comprehensive learning and teaching resources for key skills in depth, so that business faculties are able to adapt the teaching and learning situations to their own context and assure student capability for the specific set of skills. The trial of the learning modules across the participating institutions in spring semester 2009 is evidence that they can be readily used in undergraduate business programs, in their original or adapted form.

Graduate skills are embedded in the curriculum in different ways and many universities use a combination of the models described below. We have set out some advantages and disadvantages for each of the models. What is clear, however, from the various ways of embedding skills is the need for program-wide planning to develop, assess and communicate graduate skills to students, staff and employers.

#### Specific units

Graduate skills are taught in separate, dedicated units of study through a student's degree program. This can take the form of a sequence of units, or just one or two. Examples include capstone units, which consolidate and assess a student's graduate skills upon exit from the university; and general studies units, where students take units outside their main discipline.

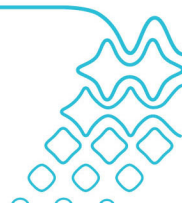
One example from the participating universities is the implementation of the Business Edge program at Edith Cowan University in Western Australia. There is one unit in first year as a transition to university; two units in second year; and one unit in third year as a transition to work. Graduate skills are taught and assessed in all units.

*Advantages:* Clear mapping of graduate capabilities and development of skills.  
*Disadvantages:* Less time for discipline-specific material; resistance from staff and students who are unaccustomed to the concepts; difficulty in finding appropriate teaching staff; no student choice due to its compulsory nature.

#### General units

Many universities require students to study subjects outside their discipline major. These are commonly called general studies units and the approach may require, for instance, a business student to study an arts or science unit; or, alternatively, an arts student to study a science or business unit. For example, at Macquarie University all students are required to study one 'People' unit and one 'Planet' unit outside their main area of study. The contribution to graduate skills is implicit rather than explicit. By studying outside their discipline it is assumed that students will develop a wider range of graduate skills.

*Advantages:* Students can choose to follow their interests and what they perceive is



important for their own development. It offers them, and course designers, a range of interesting possibilities.

*Disadvantages:* Difficulty in mapping graduate capabilities since students do a wide range of units, that is, to ensure that specific graduate skills are developed.

### Integration across the curriculum

Graduate skills are taught through discipline-specific materials that are embedded into the curriculum. For example, in marketing units some of the teaching and assessment may refer to the graduate skill of critical thinking.

*Advantages:* The skills are taught and assessed in context which makes it easier to use in the workplace.

*Disadvantages:* Staff training in teaching and assessing the graduate skills can be problematic; need to clearly map the development and assessment of the skills.

### Combination of separate units with integrated approach

Graduate skills are taught in separate units but applied or 'infused' in units across the curriculum. ACU uses this approach, with separate units in 'Reasoning and Communication' in first year and 'Business Ethics' in second year; there is an expectation that lecturers across the curriculum will apply what has been learnt in those units. The curriculum is mapped and audited to ensure learning of the skills.

At Macquarie University all business programs now have a capstone unit which is used to ensure learning of the graduate skills. This was introduced in 2010. Another example is from the University of Tasmania, which will introduce a core skills unit from 2011 in its Bachelor of Business program. It is proposed to further embed those skills in major strands of study at intermediate and advanced level.

*Advantages:* Teaching of the skills is undertaken by people specialised in the area. Students are given specific instruction in critical thinking and the communication skills required at university.

*Disadvantages:* Staff training is needed so they know what has been taught and understand that they have a responsibility to develop and assess these skills in their units. A clear map of the development of the skills and where they are taught and assessed is needed.

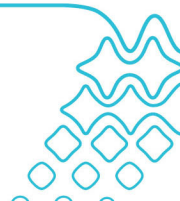
### External

The skills are taught and assessed outside of formal classes – even if they are presented within the same institution – for example through:

- internships or work experience
- workshops, such as those developed and implemented within this project <[www.graduateskills.edu.au](http://www.graduateskills.edu.au)>
- study in other countries, or volunteer work.

*Advantages:* Like general units, students can choose to follow their interests and what they consider to be important. These avenues also can provide experience for them in real workplaces. From the institution's point of view, they may be cheaper and require less general commitment of the staff than methods which assume skills are taught across the whole curriculum.

*Disadvantages:* Similar to general units: difficulty in mapping graduate capabilities since students do a wide range of activities, that is, to ensure that specific graduate skills are developed.



All these methods have their merits and shortcomings and the best options will differ according to circumstance. However, the evaluation results from the 2009 workshop suggest that intensive workshops (discussed in more detail below) could be an excellent option for initiating the development and assessment of graduate skills. A first year, first semester unit that integrates the ideas from the workshop is another option that could be used to teach the basic skills that are then developed throughout the course.

## 6.2 Workshop model

The graduate skills literature review revealed that, while the importance of graduate skills is widely acknowledged and discussed, there is no general consensus as to the most effective models of delivery. This lack of consensus is partly a reflection of variations in approach necessitated by differences in university policies, departmental cultures (Al-Mahmood & Gruba, 2007) and student cohorts. It also points to the need for continuing systematic research into the area.

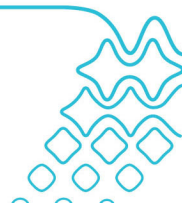
The three models of delivery presented in Section 6.1 – the embedded, the dedicated and the infused – are those most widely discussed in the literature. The embedded approach appears to be the most popular, probably because it engages subject teachers in the issue of graduate skills in higher education; relates these skills to a subject context (considered as educationally sound); and increases student perceptions of their importance (Bowden et al., 2000; Al-Mahmood & Gruba, 2007; Molyneaux, 2004; McDonald, 2004). However, this approach is also resource intensive, as it requires an overhaul of the curriculum as well as staff induction and training (McDonald, 2004).

These issues are less problematic with the dedicated approach, since the program is designed and delivered within stand-alone units by specialist staff. Done expertly, this approach creates a strong sense of social cohesion or community amongst staff and students. A social context has been shown to encourage a better understanding of principles as it facilitates greater discussion including self-explanation, an important meta-cognitive skill (Atkinson et al., 2000). This in turn facilitates the transfer of graduate skills to the work context (Billing, 2007). Because one of the key aims of a graduate skills education is to equip graduates with employment-ready skills, this represents a key strength of this approach. However, dedicated graduate skills subjects are often perceived as a 'soft' addition by some subject staff and students – this may not only detract from their effectiveness but can create a communication barrier between staff members.

Al-Mahmood and Gruba (2007) also describe an infused model which is a combination of the two. Here graduate skills development occurs in separate modules or lectures within each subject. They consider that this infusion can be catered for by specialist teachers on an as-required basis throughout the course, and that this may inject new energy into existing subjects. However, they also point out that the approach may jeopardise the sense of continuity within both the curriculum and the teaching program.

A variation of the dedicated approach – an intensive workshop model – was developed for this project. There are few references in the literature to a workshop-style model, which may be because it is resource intensive; less viable with larger groups; or because it requires 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.

An intensive three-day workshop was held at Macquarie University in April 2009.



Approximately five third year representatives from each of the team institutions accompanied by an academic staff member attended; altogether 35 students were involved. 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. These activities were led by academic staff and they all had been compiled to focus on a range of ways of encouraging the development of each of these skills. The three-day event culminated in a series of group presentations where each group received feedback from other students, staff and selected business representatives. Students were invited to comment on their experience at the conclusion of the event. This was followed up three months later when they were contacted for their reflections on the experience.

### Teaching

From a teaching perspective it is important to develop resources which are relevant, stimulating and challenging. The resources developed for and used in the workshop provided a solid base for a high-quality educational experience for both students and staff. After the workshop these were refined and expanded, and formed the core of the materials now available on the Graduate Skills website. These resources can be adapted to a range of contexts and are not limited to a workshop model. 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 it provided the opportunity to focus on particular exercises.

### Learning

At the end of the workshop students were invited to provide feedback and some were also interviewed, to ascertain an assessment of the workshop's effectiveness (see Section 8 for more detail). 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:

#### a. *Academic benefit*

The main academic benefits appear to be a heightened awareness of the nature of the four graduate skills, their capacity as students to shape their learning experience, and the opportunity to learn from other people.

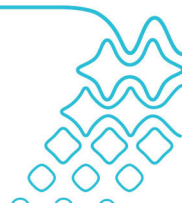
For that degree they [the graduate skills] are essential to successfully doing a degree and then getting into the workforce. ... that was definitely something that I discovered while I was at the workshop, if only because you've never thought of it prior to that ... when you're doing an assignment, a group assignment, you don't sit there and go, 'how can I get this team to work more effectively', whereas the workshop pointed out that you'd probably benefit more if you do get your team working effectively. I hadn't really even thought of the skills themselves until I actually attended the workshop.

I've always been able to work quite well in a team or on my own. I think what the workshop did was to help me realise where I stood in that team. It encouraged me to actually lead a group ... I think what helped was in the workshop we had so many strong personalities that you had to realise where there was a clash and where there wasn't.

It was actually quite useful because we did have a few group presentations, that kind of thing ... I guess one of the things was sometimes we wouldn't set out exactly what people were going to be responsible for. Whereas in the workshop we set that out and then when I went back to university we used that quite clearly rather than people saying, 'oh, I thought you were going to do that.' It was really clear what people were responsible for.

#### b. *Personal development*

For many students the workshop appeared to engender a reflective attitude



towards aspects of their personal life.

Probably sustainability actually. Because I guess my definition of it was almost entirely different to what we were taught at Macquarie. ... My original idea was just ... having like sustainable resources and stuff like that ... but when we got down into it, it was more in depth. So instead of just covering just the environment and stuff like that, it became ... more like sustaining how you deal with people as well, in a sense. ... it did open my eyes to the meaning of sustainability and I guess how I deal with things these days. So I am more conscious of how I use electricity, how I use water, etcetera.

I think the workshop has helped me to prioritise what needs to be done and set a large goal and in order to achieve that goal, small goals have to be placed.

I think it has given me more confidence with myself, especially in reducing self-doubt, and it's also helped me in terms of looking in the long term and challenging myself to ask the big questions in life, in terms of what do I want to do with my degree which will not only stimulate my critical thinking but is also looking at how I can help both ethically and in a sustainable manner, as well as understanding, evaluating my own strengths and weaknesses in order to provide the very best to the table as a team player.

### c. *Social context*

The students were particularly positive about the socialisation exercise and the social context for learning. Research suggests that a social context for learning facilitates a more effective transfer of skills across to other contexts, as it encourages students to use their meta-cognitive capabilities (Billing, 2007).

In the workshop we have a lot of participations. Like we have many students from many different universities around Australia. In the workshop you kind of exchange idea and exchange our opinion. So it is more general and more critical than what I do out in my unit. So I think without the workshop I would not have that general and broad knowledge of ethics and sustainability.

Everyone has different views ... So not just to take mine as the one and only view out there, like to listen to what other students have to say. At the workshop we found out a lot of people are very different and what they believe is right and wrong and stuff like that.

### d. *Transferability to employment*

Some students were particularly aware of the usefulness of the skills learned in the workshop to their current employment or to their post-workshop search for employment.

The teamwork section of the workshop – that definitely helped. Because I was applying [for] graduate positions, and so when I went into an interview I was more aware of what sort of skills that the employers were looking for that was ideal for the workplace. How you would deal with problems within the team and how you work in a team. The sort of skills, for example allocating the tasks according to different skills and expertise. ... I applied all of those, that knowledge and understanding to my interview so that's how I structured my responses.

Because from the workshop I learnt – they kind of told us what employees are looking for so I kind of took away from that that I need to do more than just my degree and I need to get out there and do other activities. So I joined different groups at university so hopefully on my resumé employers will see that and think that's an initiative to learning new skills.

I suppose the teamwork thing was a big thing that came out of it. I haven't been to interviews. A lot of their interview processes is based on teamwork and a lot of them how you function in a team. So to be exposed to the current trains of thoughts around teamwork would be really beneficial. There was the whole presentation component of it towards the end of the seminar, it was also very, very good because you do spend a lot of time presenting and then speaking in interviews which I suppose is a form of presenting yourself.





#### e. *Transferability to other cultures*

Interestingly, many of the international students commented on how profoundly affected they were by the experience of the workshop, mainly because it appears to stand in sharp contrast to the learning experience in their home country.

One is they get to meet more people from different countries. It's really a good way to be networking as well. The topic in the workshop that we discuss were very interesting and as I said it really different from what I experienced in my country and in my life experience so I think international student are very keen on knowing and discussing all this kind of thing.

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.

The character and aptitude and personality in specific in my culture are very different from Australian culture and sometimes I really have to be very struggle in my interview because in Australia they have some kind of social and brave attitude. Where in my country we are not that open and we are shy, and I really found that a limitation in a job interview process.

Facilitator: Do you think these skills that you learnt from the workshop would help you get a job in Cambodia as well?

Participant: I guess so because right now we have international investment coming to Cambodia. So I think this kind of characteristic is really, really like fit in the job market. It's kind of, we are having a come and see attitude. Very social, I mean socialisation; it's really improved the business.

#### f. *General praise*

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.

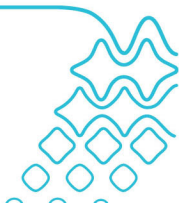
I would like to say that the workshop was very interesting and stimulating. It was really nice to meet such different, strong-minded personalities both in terms of my fellow colleagues as well as the different lecturers there. I think that the project is an excellent initiative to help understand the needs and demands of students, in order to be better employees and citizens in the future.

I thought the workshop was very successful and educational. It was well planned out and the location was perfect. It would be good to have such a workshop held annually for high achievers, since this group of students is sometimes overlooked. The focus is usually on assisting under-achievers, poor performers or international students. Well done to all involved in organising this event.

### 6.3 Embedding learning and teaching resources

Learning modules were implemented as stand-alone modules within selected undergraduate business units during the 2009 spring semester at all project team institutions. This engaged course coordinators, lecturers and a wider representation of students at these universities. Each university involved in the project was at a different level in their integration of graduate skills into their business courses. For this reason each university used different aspects of the activities developed and found the project beneficial in different ways.

Table 6 details the units in which project learning and teaching resources were embedded across the team institutions.



## Australian Catholic University

The Bachelor of Business course had been reviewed in the period 2007–2008 and the first year of the new course was being implemented in 2009. As part of the review the graduate attributes for the university were mapped across the core units of the business degree and within the different discipline majors. ACU were therefore looking for ways in which they could develop the different skills and attributes in the units already identified.

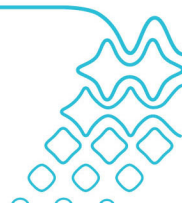
Various ethical dilemmas were used in the core Business Ethics unit, as was the Gunns Mill exercise on sustainability to help students understand the need to consider the interests of various stakeholders. The debate activity was developed by a staff member at ACU and used in the same unit. Some of the icebreakers were used by staff in first tutorials or in orientation activities. The new course included a unit called 'Reasoning and Critical Thinking', and the essay in the unit adapted some of the ideas used in the 'Critical Thinking Argumentative Essay' activity. Variations on some of the teamwork activities were also integrated into various units, and a specific workshop on teamwork was organised for 28 staff members at a learning and teaching conference in Sydney in July 2010.

## Edith Cowan University

The embedding of graduate skills was already well advanced in the Bachelor of Business at Edith Cowan University (ECU) at the start of the project. In 2006 ECU conducted a major review of its Bachelor of Business degree, and in 2007 a new program was launched which includes four units focused on employability skills (graduate skills); this is referred to as the Business Edge program. These units are compulsory for all students, with two units being taken in first year, one in second year and one in third year. ECU was thus able to contribute its experience with this exercise to the project. Because these units are already well established, with appropriate expert staff and content, the activities developed by the project have not been adopted as much at ECU as they have been at some other universities. However, not all the faculty's courses are able to include the Business Edge units and in those discipline areas work is progressing to embed graduate skills within discipline-based units. In these areas the work of the project has been and will continue to be extremely valuable. It is anticipated that the Standards of Achievement and the way in which they can be used to develop marking rubrics will be particularly helpful to staff.

## La Trobe University

At the commencement of the project, La Trobe University was embarking on a major initiative designed to ensure that the university's key graduate capabilities were developed and enhanced in all courses in a systematic and coherent way. In the business area the graduate capabilities have been mapped across all subjects to identify the degree of coverage and consistency between year levels and subject offerings. Business has been exploring ways of incorporating the development of graduate capabilities among its courses, and staff members have found the resources developed by the project to be very useful. The Gunns Mill scenario, combined with the jigsaw method, has been adapted as a case study for a teamwork assignment in a third year subject, 'Interpersonal Skills and Conflict'. The jigsaw method has been used successfully in a range of other subjects with a group-work focus, and group formation has been found to be easier when preceded by some of the project's icebreaker exercises. After the Melbourne workshop disseminating the project's outcomes, three lecturers in the accounting area have used a range of the resources on 'teamwork', including the assessment standards, team contract and the jigsaw method. Further workshops which focus on how the resources developed by the project can assist in embedding the skills of teamwork



and ethical behaviour in business subjects have been planned for second semester, 2010, at the university.

### Macquarie University

The project teamwork activities were used in a first year business subject of 1,000 students. The ethical practice Standards of Achievement provided the basis for mapping ethics across curricula in accounting at an undergraduate level. In a second year applied statistics subject, the icebreakers were used in early tutorials and classes to introduce ideas of teamwork to students and to establish positive grounds for team activities throughout the course. Examples of sustainability formed the basis of examination questions, and ethical practice components of projects contributed to the overall mark for students' projects.

In the Faculty of Business and Economics (FBE) a direct implementation of project outcomes has been the newly developed workshop program for Merit Scholars. This program will service students who have received a high university entrance score, and it will include an average of 40 scholars each year with 25 from business and economics. From 2010, all students in the Merit Scholars program – not only those in business and economics – will take part in the student workshop trialled in the Graduate Skills project.

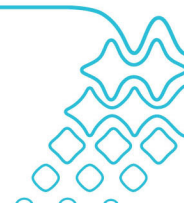
As discussed in Section 5.1, the first of these workshops was held in July 2010. Academics from a range of disciplines facilitated the workshop sessions, with one session for each of the four skills in addition to an icebreaker session. The workshop program is an effective ongoing professional development initiative for academics, to equip them in embedding graduate skills into their own teaching. The program also provides an opportunity to integrate the project materials across disciplines to cater for Merit Scholars, who are drawn from different faculties.

A number of the learning modules are being integrated into the Learning Excellence and Development or LEAD program run by a multidisciplinary group of academics in FBE with the aim of nurturing a responsive teaching culture. The project materials on icebreakers and on teamwork will be developed into two professional development booklets, comprising a set of guidelines and examples for academics on how to use the modules in their teaching. These guides will be distributed to every academic in the faculty.

All degrees in FBE have a foundation program consisting of five subjects with each concentrating on one graduate skill as well as their discipline content. Each degree and major has a capstone unit; these were introduced in 2010 and, though the introduction was not a direct result of the project, the project outcomes have been used to inform the design of assessment. The standards have been distributed to academics as guidelines to grade foundation units and capstones across the faculty. This offers a systematic opportunity for academics and students alike to engage with the project standards.

### University of Canberra

At the University of Canberra, project materials – particularly the literature review on teaching graduate skills – were used as input into a new university policy on graduate skills developed in 2009. The resources and insights from the project have been shared with all the associate deans (education) within the university and have provided significant input to the discussions in this group on graduate skills. The project outcomes have spread into the wider university community; for example, the website resources have been used in the development of a university-wide sustainability major and minor.



The resources are particularly relevant for the undergraduate programs in commerce, business administration, management and applied economics run by the Faculty of Business and Government. Case study material has been successfully used in individual units. The faculty is developing an orientation program for new students which will include material on team building and critical thinking developed in this project. The resources have been highlighted in staff development workshops on graduate skills within the faculty.

### University of Southern Queensland

At the University of Southern Queensland (USQ) the embedding of graduate skills was already well advanced in the Bachelor of Commerce at the start of the project. In 2007 USQ conducted a major review of its Bachelor of Commerce degree in order to facilitate knowledge and skills development with particular emphasis on employability skills (graduate skills). The development of a new degree program in accounting and business sustainability and postgraduate courses in sustainable business also occurred in 2008. The Recycled Water case study and the case study of the Moreton Island oil spill were used in postgraduate courses in financial accounting and sustainability, and further case studies surrounding the BP oil disaster have been developed and applied. The Graduate Skills learning modules and activities can be incorporated into the Bachelor of Accounting and Sustainable Business program, Commerce and Business programs as case studies and used as formative assessment items. Academics from other subject areas are also utilising the resources developed by this project in their courses. Where applicable, staff members are being encouraged to take time to develop rubrics to be used as marking guides for assessment of graduate skills.

### University of Tasmania

The Bachelor of Business program was substantially reviewed during 2009 to comply with the university's common course structure. In concert with this, the Faculty of Business has been engaged in mapping graduate attributes across major strands of study, and is further considering a substantial change to the common first year core in the Bachelor of Business program with a view to specific coverage of graduate skills. The resources and insights of the project have been particularly useful in informing those processes.

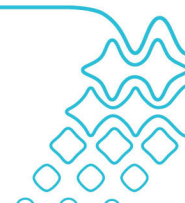
The ethical dilemma scenarios have been considered for use in a capstone ethics unit. The jigsaw method of student engagement has been used in a second year industrial relations unit.

The Faculty of Business is proposing to introduce from 2011 a new compulsory core unit into its Bachelor of Business program, which will cover communication, teamwork, critical thinking, academic writing, and computer literacy. The unit coordinator intends to make use of some of the resources and assessment rubrics developed by the project.



Table 6. Project teaching and learning resources embedded at team institutions

<b>Institution</b>	<b>Level</b>	<b>Subject</b>	<b>Discipline</b>	<b>Learning module</b>
ACU	1 <sup>st</sup> year	Orientation sessions	Business	Icebreakers
ACU	1 <sup>st</sup> year	Reasoning and Communication	Business	Argumentative essay
ACU	2 <sup>nd</sup> year	Business Ethics	Business	Gunns Mill case study
ACU	2 <sup>nd</sup> year	Business Ethics	Business	Debate
ACU	2 <sup>nd</sup> year	Business Ethics	Interdisciplinary	Ethical dilemmas
ACU	2 <sup>nd</sup> year	Interpersonal Communication	Interdisciplinary	Teamwork
ACU	2 <sup>nd</sup> year	Interpersonal Communication	Interdisciplinary	Immediate Feedback Assessment Technique
ACU	2 <sup>nd</sup> year	Interpersonal Communication	Interdisciplinary	Gunns Mill case study
ACU	2 <sup>nd</sup> year	Human Resource Management	Human Resources	Team contract
ECU	3 <sup>rd</sup> year	Business Career Development	Business	Gunns Mill case study
MQ	2 <sup>nd</sup> year	Applied Statistics	Statistics	Icebreakers
MQ	2 <sup>nd</sup> year	Applied Statistics	Statistics	Sustainability literature
MQ	2 <sup>nd</sup> year	Applied Statistics	Statistics	Ethics literature
MQ	1 <sup>st</sup> year	Principles of Management	Business	Teamwork
MQ	Undergraduate	Curriculum mapping	Accounting	Ethical Practice Standards of Achievement
UC	2 <sup>nd</sup> / 3 <sup>rd</sup> year	Human Resource Economics	Human Resources	Drug-testing case study
UC	1 <sup>st</sup> year	Orientation	Interdisciplinary	Icebreakers
UC	3 <sup>rd</sup> year	Contemporary Issues in Microeconomics	Economics	Bailing out the banks case study
La Trobe	3 <sup>rd</sup> year	Interpersonal Skills and Conflict Management	Management	Gunns Mill case study
USQ	Postgraduate	Finance and Accounting for Sustainability	Accounting	Recycled water case study
USQ	Postgraduate	Finance and Accounting for Sustainability	Accounting	Moreton Bay oil spill case study
UTas	3 <sup>rd</sup> year	Managerial Social Responsibility	Management	Ethical dilemma scenarios
UTas	2 <sup>nd</sup> year	Workplace Relations	Management	Jigsaw method



## 7. Lessons learnt for future projects

### 7.1 Critical success factors

A major feature for the success of the project was face-to-face meetings, which were extremely valuable given the geographical diversity of team members. Team meetings were attached to each of the ABDC T&L Network meetings, which most team members were attending in any case. Including a social element in the meeting promoted team cohesiveness and ultimately improved productivity.

We also found that a blended communication strategy was essential to maintaining momentum between these face-to-face meetings. Mechanisms included regular meetings via teleconferences, and Google Docs was used as an online platform for collaborative authoring that would be visible to all team members.

The team met more frequently in the first half of the project – whether face-to-face or through teleconferences – as it was crucial to clarify critical project terms, objectives and strategies. Initial meetings were devoted to developing a shared and clear conceptualisation of graduate skills generally, the four chosen skills, and the types of knowledge (conceptual, professional, and procedural) framing the standards of achievement. An agreed understanding was essential for effective communication within the team and with external stakeholders.

The buddy system, in which team members work in pairs on a specified task, was applied successfully throughout the project. With the perennially busy schedules of team members, mutual encouragement and feedback was critical to maintaining momentum. This was also an efficient way to allocate tasks amongst a large group.

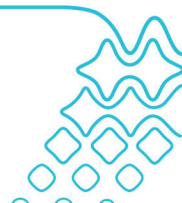
Ownership of project activity amongst the team was critical to maintaining team motivation and engagement. The team took a very hands-on approach in the design and execution of the workshops and activities, and experienced firsthand the value of graduate skills by working closely with students and academics on graduate skills teaching strategies. This approach gave support to the concept that engaging with graduate skills involves a degree of transformation for all concerned. The enthusiasm generated from this interactive approach continued to drive progress in the later stages.

The ability of team members to engage other academics with the issue of graduate skills has been essential. The team was primarily made up of associate deans for teaching and learning in their own institutions, who were also members of the ABDC T&L Network. These factors enabled them to generate support for using the project's learning and teaching resources and for effecting general cultural change amongst academics. The universities' cooperation was particularly valuable in the 2009 spring semester trial of learning modules in various undergraduate business units. Their support was also evident in the strong attendance at project workshops by a range of academics from different institutions.

### 7.2 Challenges

Support from academics is both a critical success factor and a challenge. While support for outcomes was demonstrated throughout the project, it remains difficult to change attitudes and culture within the academic and business community over only a two-year period.

Changes in personnel delayed progress at various points during the project. The embedding manager resigned in January 2009 and was not replaced. This meant that the team members themselves played a greater role than initially expected in



the embedding and dissemination phases of the project. Two team members were replaced in the first six months, owing to changes in appointment within their universities. The previous project manager responsible for operational aspects left the position in August 2009 and was replaced in November 2009. This had the advantage of bringing a new perspective to the project, but having such a change created pressure on the new project manager to catch up and maintain momentum. Several project activities such as follow-up evaluations with workshop participants and securing approval for ethics amendments were consequently delayed.

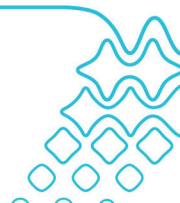
Two members were restructured out of their university's business faculty midway through the project. This had the effect of limiting the members' influence over policy and practice in that university's business faculty. For one member, this has also limited the time available for the project, because of their altered responsibilities and workload. However, both members offered an interdisciplinary approach to the project, which has only confirmed the importance of varied graduate skills in an undergraduate business program.

### 7.3 General lessons learnt

The team now appreciates the importance of finalising an official terms of reference document with key stakeholders from the outset of the project, or from the time of their engagement. Such a reference would be useful in terms of formalising roles and responsibilities throughout the project in relation to activities and outcomes, for example, those of the external evaluator, sponsor organisation and reference group. Similarly, the roles and expectations of team members, the means and extent of communication, and procedure for harvesting outcomes in terms of research as a result of a project need to be clearly defined.

There is much that academics and administrators can learn from other institutions. The collaborative nature of the project was illuminating for team members, in the sense that they were exposed to a range of policy and practice specific to each institution. Rotating locations for face-to-face meetings across different team institutions promoted this process of mutual learning.

The team were confronted by the importance of balancing the local and global contexts of their learning modules. The initial modules developed by the team were real world case studies situated in a contemporary Australian environment. Feedback from lecturers, tutors and the Institute of Chartered Accountants suggested that they welcome Australian teaching resources in the context of pre-packaged textbooks from international providers in which local context is stripped out. Conversely, the feedback also indicated a need for some international examples, given the levels of cultural difference which exist across the student population. The team recognise that an international emphasis aligns with the growing trend of curriculum internationalisation within undergraduate business programs, which has occurred as a result of the need to prepare students to work in a global economy. In this context, the team understands the need to trial and refine learning and teaching resources once produced.



## 8. Evaluation

An overall summative external evaluation of this project was undertaken by Patrick Boyle of Q Associates and this has been forwarded to the ALTC.

During the project, since the team members themselves were integral effectors of the project, self-evaluation was used throughout the project to identify successes and challenges as they arose. Periodic surveys of the team were conducted to evaluate three dimensions of success: understanding of the project, motivation, and actions to disseminate and embed.

As specified in the project plan, the team also conducted an ongoing stakeholder review of specific project events and initiatives. These included a range of activities engaging students, academics and industry representatives, from surveys about specific aspects of learning modules, to invited responses obtained from presentations, and reflections obtained about the workshops for academics and students. These internal and external evaluation processes were used to improve the delivery of project activities and progress against the objectives.

More specifically, students' understanding of the four selected graduate skills were tested immediately before and after the three-day national workshop (April 2009) and the feedback was analysed by team members. The students were invited to provide open-ended feedback during the workshop. In addition, 21 of the 35 original workshop participants were interviewed as a follow-up assessment of the workshop's effectiveness. The open-ended questions related to how their understanding and application of graduate skills had improved and developed since the workshop (see also Section 6.2 for more detail about their responses). Input from students led to refinement of the learning modules and subsequent workshops in 2009 and 2010.

During the 2009 spring semester trial of learning modules, evaluation forms were distributed to participating academics and students. They were asked to rank their level of engagement (using a Likert scale) with the learning modules and the modules' effectiveness in developing their understanding of graduate skills. Evaluation forms are also on the website, and users are encouraged to complete them when downloading the learning modules and standards. Evaluation of the learning modules indicates that the majority of students considered that the learning module prompted them to ask questions in class; to discuss the main issues with their peers; to do additional research into the issue presented in the module; and that it improved their understanding of the graduate skills targeted by the module.

Academics from 15 universities who participated in workshops in Victoria (June 2010) and Northern Australia (July 2010) provided very positive feedback on project outcomes. In their evaluations, many academics indicated they would adapt the learning modules and activities for their teaching. They also commented that they would use the project's standards of achievements to create their own assessment rubrics. The responses also suggest that they had learnt relevant concepts about teaching strategies and assessment standards for graduate skills. Several indicated they would share feedback on their experience with colleagues in their own university and work with others to change practice in developing and assessing graduate skills.

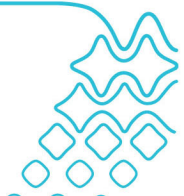
The reference group – which was comprised of representatives from both academia and industry – were also consulted on project activities and outcomes. They were asked to evaluate the learning modules, standards and the website. The group was also invited to give their opinions of the value of graduate skills and desired models of delivery in higher education, in terms of whether this would improve the





employability of students and the expectations of university graduates.

Google Analytics is continuing to be used to track traffic and usage of the Graduate Skills website, including the number of times each resource is downloaded and each page viewed, as well as the profile of each visitor. In combination with voluntary survey data, this has enabled effective redesign of the website to promote access to particular learning and teaching resources.



## 9. Limitations and summary

### 9.1 Limitations

#### Time

The project team is a group of associate deans for learning and teaching in business faculties. Because of their duties, time to devote to the project was limited which meant that the project was overly constrained in terms of time and budget. Hence the aims of the project were too ambitious for the resources available, one result of which was that the embedding part of the project was less developed than other sections. For the future, the team will continue working on a 'Models of delivery' paper that is to be delivered to the next ABDC meeting and published internationally. We also expect to be engaging in other forms of dissemination of the project outcomes over the next year.

#### Policy

Policy developments in the sector and internationally have had positive impacts on the project. Many universities in Australia are working towards accreditation with the Association to Advance Collegiate Schools of Business (AACSB) [www.aacsb.edu/accreditation/](http://www.aacsb.edu/accreditation/) which has models of embedding that support the implementation of the graduate skills investigated in this project. The standards agenda has also supported attendance at the workshops, since staff realised the need for training in defining and implementing standards of achievement.

It is difficult to say whether the results of the project will be able to be implemented exactly as developed, considering the changes in policy at present. For instance, the standards being developed in the Accounting discipline (Mark Freeman, ALTC Discipline Scholar) within the Learning and Teaching Academic Standards project may be in a different format to the standards of achievement developed and tested in our project.

#### Professional development

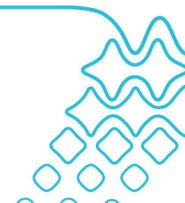
Business education in Australia has large numbers of students and academics. The professional development needs of academics to support their teaching and assessment of graduate skills as well as their own discipline area is significant. Business teaching is funded at a low rate in Australia so classes are large. This makes developing and assessing graduate skills more difficult than for other disciplines.

#### Students

In a limited way the project addressed how students can be motivated to engage with graduate skills – even a change in terminology from generic to graduate skills can influence the engagement of students. Nevertheless more needs to be done to motivate students to engage with these skills.

### 9.2 Summary of project outcomes

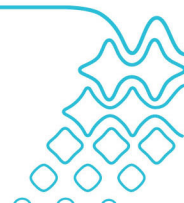
All universities represented in the ABDC L&T Network are grappling with the embedding and assessing of graduate skills throughout business programs in Australia. Given the range of contexts, one model does not fit all situations. This project has identified and disseminated several models that are current around Australia. We tested and disseminated a new model – that of a comprehensive workshop – with positive outcomes for students and professional development of academics.



The team worked well together, and we have made an original contribution to the graduate skills agenda through the development and testing of learning resources and standards of achievement. In particular, the use of the jigsaw method for stakeholder analysis in ethical practice and sustainability in business contexts will be implemented in business departments across Australia. The project has international impact through the Graduate Skills website, and will continue to have an impact as the team disseminate outcomes at national and international conferences and in international journals.

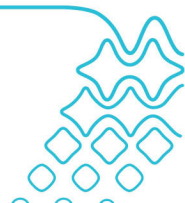
The Graduate Skills website is another significant output of the project. It is a dynamic resource that encourages and supplements the learning and teaching of graduate skills in business education. The website continues to be regularly accessed by visitors from around the world (56 countries as of September 2010). Users can access and adapt practical materials for developing and assessing graduate skills. This will be disseminated through the ABDC T&L Network. It is intended that the website will be enriched and maintained to assist with active dissemination of the project outcomes for at least the next three years.

The team thanks the ALTC for the opportunity to work on this project and make a difference to business education.

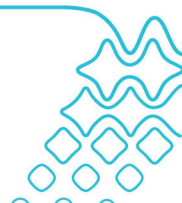


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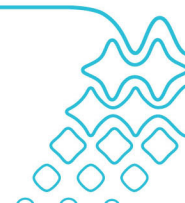
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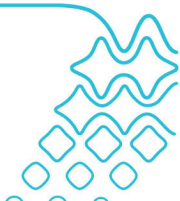
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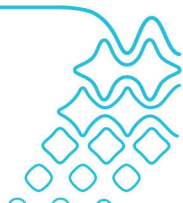
## Appendix A – Learning and teaching module example



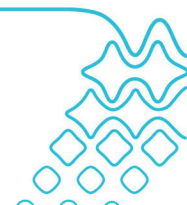
# Sustainability and Teamwork

## Gunns Mill Scenario

Description	Case Study Analysis
Task Type	In-class or tutorial activity
Time	50 minutes
Level	Advanced
Class Size	Up to 35 students
Learning Outcomes	<p>Student should be able to:</p> <ul style="list-style-type: none"> <li>✦ Demonstrate an understanding of sustainability in three dimensions: environmental (green; organisational (long term)); responsibility for present and future generations</li> <li>✦ Develop an argument and counterargument in two contexts</li> </ul>
Method	<p>Choose a case example of an organisational activity that raises sustainability issues ('the Project')</p> <p>Prepare a general factual introduction and up to five statements of the viewpoints of stakeholders.</p>
Concluding Activity	<p>Link this back to learning about sustainability from the student activity. Issues to address might be:</p> <ul style="list-style-type: none"> <li>✦ What do we mean by sustainability?</li> <li>✦ How do stakeholders view sustainability differently?</li> </ul>
Tips	Keeping time is key to the success of this activity



<p>Student Instructions</p>	<p>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.</p> <p>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?</p> <p>The original groups will then reconvene and will now contain an expert on each stakeholder's views.</p> <p>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.</p> <p>Your discussion should include, but need not be limited to the following:</p> <ul style="list-style-type: none"> <li>✦ What sustainability issues does the Project raise?</li> <li>✦ How would the stakeholder you are representing argue the sustainability case?</li> <li>✦ Based on your view of sustainability should the Project proceed?</li> <li>✦ 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?</li> </ul> <p>You will have about 25 minutes to work on this: 10 minutes for each expert group, and then 15 minutes for the original groups.</p> <p>At the end of this time each original group must give a 5 minute group presentation which addresses the following questions:</p> <ul style="list-style-type: none"> <li>✦ What sustainability issues are relevant to the Project?</li> <li>✦ Did you reach a consensus?</li> <li>✦ How did your group arrive at a consensus?</li> <li>✦ What conclusion did you reach as to whether this Project can proceed in a sustainable way?</li> </ul>
<p>Additional Material</p>	<p>attached below</p>



# Information Sheet

Gunns Limited is proposing to build a \$2 billion pulp mill in the Tamar Valley near Launceston in Tasmania.

The proposed mill will use the Kraft process Elemental Chlorine free bleaching and will process eucalypt forest and plantation timber.

The proposed mill has polarised public opinion in Tasmania, and in Australia as a whole. Some say that 61% of Australians are opposed to the project. A similar proposal in 1989 to establish a pulp mill at Wesley Vale (near Devonport) in Tasmania also polarised public opinion. This proposal did not proceed mainly for the reason that it used elemental chlorine in the production process.

The project has been assessed and approved (subject to conditions) by relevant State and Federal Government agencies. Considerable debate has ensued regarding the process by which these approvals were obtained.

The project has been delayed partly due to the proponent's inability to secure finance and partly due to the imposition of a number of additional conditions by the Federal Government that relate principally to the effect of emissions from the proposed mill into Bass Strait.

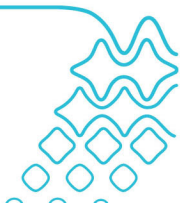
Supporters of the project argue that it will create employment within the Tamar Valley region both during construction and during the operational phase.

Tasmania is a small State with a population of just over 500, 000. It has in the past relied on a number of large projects to support economic growth – the most notable of these was 'hydro industrialisation' which involved the construction of a number of hydro electric power developments in the western region of the State to supply power at attractive rates to a number of industries that relocated to Tasmania. Some argue that similar motives underpin the Tasmanian Government's support of this project.

About half of the land surface of Tasmania is forested – half of the forested area is reserved. About 80% of old growth forests on public land are reserved and almost all wilderness forests are reserved. Forest practices with a view to the long term sustainability of the resource are managed by the Forestry Commission. The forest and wood products industries are one of the largest sectors in Tasmania's manufacturing base.

The project raises two main environmental issues:

- ✦ First the question of emissions from the proposed mill – both into the atmosphere and into the ocean.
- ✦ Second the question of supply of timber to the proposed mill and the effect that this may have both on the sustainability of the Tasmanian forests and broader issues relating to climate change.



## Perspective of Gunns Limited

Gunns Limited is a listed Australian company that operates within Tasmania. Its principal business is forest products although it has diversified into managed investment schemes, wine making, merchandising, and project management and design. Revenue for the 2008 financial year was \$861.9 million and its profit after tax was \$64.5 million. The net profit generated earnings per share of 14.2 cents with an annual dividend payment of 10 cents per share.

Its rationale for the proposed pulp mill is that it will value add to its renewable, sustainable forest estate thereby generating shareholder wealth and economic growth, employment and community benefits.

The Company argues that the proposed pulp mill will have no adverse environmental effects as:

- ✦ there will no increases in timber harvesting: the project will divert woodchips that would be exported from Tasmania to the mill for downstream processing;
- ✦ no old growth forests will be harvested;
- ✦ there will no conversion of native forest to plantation or cleared land;
- ✦ the mill will export 90MW of power to the national grid and will reduce carbon emissions in consequence;
- ✦ the project is based on the use of the Company's managed plantations with a minimum of 60% at commencement increasing to 100% within 5 years;
- ✦ the project has received separate regulatory approvals from the State and Federal Governments and the Company is working towards satisfying outstanding conditions within the time frames allowed

As to its forest practices the Company now has a total plantation estate of 200,000 hectares which in its view provides the basis for its continued operations (including the proposed mill). The Company claims to observe a range of sustainability practices and complies with the relevant standards. Recent surveillance audits have confirmed this. About 45,000 hectares of the Company's plantations are reserved for a range of flora, fauna, heritage biodiversity, soil and water landscape values.

The Company has not yet secured finance to fund the project and has experienced a number of setbacks in that regard – the most significant of these was the refusal of its principal banker (the ANZ Bank) to be involved. In more recent times the Company has been exploring joint venture partners and financing from a number of overseas sources. Its 2008 Annual Report stated that the Company could not be at all sure that the project would proceed.



## Perspective of Government

The proposed pulp mill requires a range of approvals as to environmental effects, building, transport, water supply and a whole host of incidental matters. Responsibility for granting these approvals rests with the Tasmanian and Federal Governments and both of their associated agencies or instrumentalities.

A number of Integrated Impact Statements were prepared by Gunns for submission to both Governments and/or their relevant agencies/instrumentalities. The Tasmanian Government obtained an independent assessment from an offshore consultant and the Federal Government at a later stage in the assessment process sought advice from its Chief Scientist.

The Tasmanian Government has been an enthusiastic supporter of the proposed pulp mill. This has not come without criticism from the opponents of the proposal who have accused the Tasmanian Government of lacking objectivity and of breaching established process to 'fast track' approval of the project. The Tasmanian Government's view essentially is that the long term benefits of the project (increased employment, increased economic activity, and increased contribution to earnings for the Tasmanian community as a whole) as outweighing potential adverse environmental effects which it thought could be effectively managed by the permit process. It was thinking similar to this that drove the earlier 'hydro industrialisation' policy in the last third of the 20th century.

After lengthy delays in the Tasmanian approval system the Government determined to have the Tasmanian Parliament grant the necessary approvals and permits (subject to conditions) and this occurred in spite of considerable public disquiet during 2007. The effect of Parliament's action was to substitute its approval for those ordinarily given by the Resource Planning and Development Commission and further to circumvent any legal appeals.

The Federal Government gave conditional approval to the Project in 2007 but limited to its jurisdiction – mainly this relates to the environmental effects of the discharge of effluent from the proposed pulp mill into Bass Strait. Those conditions were varied in 2009. Final approval is not expected until later in 2010 and is subject to Gunns undertaking further modelling of the likely impacts of the operation of the proposed pulp mill.

Aspects of the approval process are the subject of a number of legal challenges.



## Perspective of Workers

The Tasmanian forest and wood product industries employ about 11,000 people (about 1 in 20 of all persons employed in Tasmania), contribute more than \$1.3 billion to the State's economy, and are the second largest industry sector. The amount generated by these industries is about equivalent to total spending on education and health in Tasmania.

Gunns Limited is the largest participant in these industries and holds about a 50% market share. The unemployment rate in Tasmania is currently 4.5%. Much of the employment in these industries is in small rural districts and towns and as such is considered to be essential to the survival of many of those communities.

The areas of employment include:

- ✚ Forest operations: road construction; harvesting and supporting trees; regeneration works; establishment of new forests. Many of these activities are undertaken by independent contractors some of whom have substantial investments in plant and equipment
- ✚ Forest management: forest practices plans; research; supervision; control
- ✚ Manufacturing: veneers; sold timber (hardwood & pine)
- ✚ Timber processing: pulp and paper mills (2); medium density fibreboard mills; value adding

Construction of the proposed pulp mill will provide direct employment for about 2,500 people, and indirect employment for another 1,500 people. There is conjecture as to the number of continuing jobs that will be provided by the project during the operational phase – some put this at about 320 skilled positions.

If the proposed pulp mill is not built Gunns has said that it will merely continue to export woodchip products offshore or interstate. Its position is that existing employment in the forest and timber industries ought not be affected, all other things being equal.

Workers and contractors employed in the forest and wood product industries and represented by a range of industry and union bodies. The most significant of these is the Forest Industries Association of Tasmania which has maintained a policy of strong support for the proposed pulp mill.



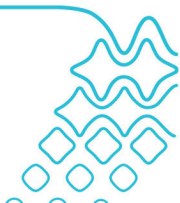
## Perspective of Conservationists

Opposition to the proposed pulp mill has not surprisingly been led by the conservation lobby. The most prominent member of this lobby is the Wilderness Society which has a history of leading environmental activism over many years commencing most notably with opposition to the Tasmanian policy of hydro industrialisation and its effect on the natural environment.

The major arguments of the conservation lobby include the following:

- ✦ A flawed approval process: it is argued that the Tasmanian Government in its support for the proposal circumvented process by allowing the proposal to escape the usual approvals and instead to substitute those approvals with a decision of the Parliament; this is seen as a fundamental breach of human rights
- ✦ Economic costs: taxpayer subsidies; jobs will be taken up by non Tasmanians; very few jobs remain after the construction period
- ✦ Environmental effects: adverse effects on marine life and environment caused by the release of effluent into Bass Strait; atmospheric pollution caused by emissions into the already polluted Tamar Valley; change in the ecological balance by the harvesting of timber wherever situated; visual pollution of the Tamar Valley
- ✦ Technology: questioning the appropriateness of the selected technology for the bleaching process in the pulp mill and the lack of evidence as to its safety both in terms of storage of the chemical and the operation of the mill
- ✦ Timber Supply: the alleged use of 'old growth' timber to fuel the pulp mill (and not plantation timber as claimed by the proponent); forest destruction (4.5 million tons consumed annually)
- ✦ Water Supply: the proposed pulp mill will use considerable quantities of fresh water diverted from domestic or agricultural use; the amount used would supply three major cities in Tasmania annually
- ✦ Site Selection: the worst possible place in Tasmania (close to Launceston)
- ✦ Climate change: the destruction of forest resources and an increase in Australia's total greenhouse gas emission by 2%

Opposition to the proposed pulp mill is being undertaken on a number of fronts and using a variety of communication strategies. Many public rallies have been held in the Launceston area beginning in 2006. These rallies have attracted crowds of up to 10,000. Additionally a number of legal challenges have been mounted against the approval process – some of these are unresolved.



## Perspective of Community

Launceston is the second largest city in Tasmania with a population of nearly 100,000. It is situated at the head of the Tamar Valley at the confluence of the North and South Esk Rivers which combine to form the Tamar River which flows into Bass Strait just to the west of George Town on the North Coast. Bell Bay, Launceston's port is situated to the south east of George Town and handles the greater part of container traffic into Tasmania. Bell Bay itself is a port and general industrial complex. Gunns Limited has an existing woodchip mill at Longreach (just to the South east of the Port) and proposes to build the pulp mill on land adjacent to this site. The Bell Bay and Longreach areas are zoned heavy industrial and industries already operating in those areas include an aluminium smelter, a ferro alloy processing plant, a gas fired power station, woodchip mills and other light industrial concerns.

The topography of the Tamar Valley combined with calm winter days and extensive use of wood for heating has resulted in high levels of air pollution in the winter months. This is exacerbated by motor vehicle pollution. The number of woodheaters has been reduced over the past five years as a result of action by the Launceston City Council in introducing a woodheater replacement program. There has been an active campaign by respiratory physicians to draw attention to the question of air pollution in Launceston that has heightened community awareness of this issue. Linked to this awareness is the question of whether the proposed pulp mill will increase the levels of air pollution in the Tamar Valley.

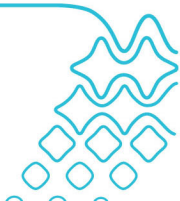
The Tamar Valley is a very popular tourist destination. There are a number of vineyards situated on both sides of the River and wine tourism has been very actively marketed. There is community concern that the proposed pulp mill will have adverse effects on the wine industry in particular and other agricultural pursuits in general, particularly with respect to perceived levels of pollution. Some argue that the proposed pulp mill will have adverse effects on the tourism industry in that the appearance of the upper reaches of the Tamar River will be visually changed.

Launceston is now a service centre for its surrounding hinterland. There is a substantial timber and forestry industry in that hinterland that supports a range of occupations and contractors. It previously sustained a number of manufacturing operations (textiles, railway workshops, and general engineering) which have now closed or relocated elsewhere. Leaving aside the effects of the present world economic crisis Launceston has in the past not shown growth in employment patterns and strong community support could be expected for any project that increased employment.

An area of concern to the community is the effect that the proposed pulp mill will have on the road network. There is a perception that traffic will increase on an already inadequate road system largely due to the inability of the Tasmanian Government and the operator of the State Railway system to provide a satisfactory rail transport access to the pulp mill site. This is closely linked to the tourism issue.



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PO Box 2375 Strawberry Hills NSW 2012 Australia

Telephone 02 8667 8500 Facsimile 02 8667 8515

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