



Review of Graduate Skills

Critical thinking, team work, ethical practice and sustainability

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Table of contents

1. Generic Skills.....	3
1.1 Defining Generic Skills.....	3
1.2 The Importance Of Graduate Skills: Personal And Societal	5
2. 'Best' Practice For The Teaching And Learning Of Graduate Skills.....	6
2.1 Promoting Graduate Skills	6
2.2 Graduate Skills Development.....	6
2.3 Embedding Graduate Skills	7
2.4 Research As Learning	8
2.5 Self-Regulated Learning	8
3. Strategies And Activities For Promoting And Enhancing The Development Of Graduate Skills.....	9
3.1 Critical Thinking.....	9
3.2 Teamwork	11
3.3 Ethical Practice.....	14
3.4 Sustainability.....	17
4. Conclusion	19
5. References.....	20

1. Generic skills

1.1 Defining Generic Skills

There is much contestation and divergence surrounding the definition of generic skills, from the perspective of different stakeholders. Treleavan & Voola (2008) highlight the various, interchangeable terms related to generic skills: key skills; key competencies; transferable skills; graduate attributes; employability skills (Curtis & McKenzie, 2002); soft skills (BIHECC, 2007; Freeman et al., 2008); graduate capabilities (Bowden et al., 2000); generic graduate attributes (Barrie, 2004; Bowden et al., 2000); professional skills; personal transferable skills (Drummond et al., 1998) and generic competencies (Tuning Report, 2008). However, such phrases as generic skills, graduate attributes, graduate qualities, etc. can be thought of as synonymous/hyponymous (Bowden et al., 2000). This project prefers, and will refer to, the notion of 'graduate skills'.

From the perspective of industry bodies and government initiatives, the conceptualisation of generic skills has focused on the notions of employability and transferability (Mayer Committee, 1992; Australian Industry Group, 2000). Recently, the Australian Chamber of Commerce and Industry and the Business Council of Australia (2002) produced an expanded list of skills as the basis for employability, which included key competencies and personal attributes, which were perceived by employers as producing high levels of job-performance. The international project of DeSeCo (Definition and Selection of Competencies), supported by the OECD, details an alternative approach to defining generic skills. A theoretical and conceptual basis was created by involving academics from the disciplines of philosophy, anthropology, economics, sociology and psychology. The project concluded with the identification of three broad competencies: acting autonomously and reflectively; using tools interactively; and joining and functioning in socially heterogeneous groups (NCVER, 2003).

Underpinning Australian Universities' academic board statements on generic skills are a number of the aforementioned conceptualisations. In particular, the notion of life-long learning; the expectations of industry bodies; need to produce active, engaged citizenry; prepare students for an uncertain future; student-centred pedagogy (constructivism); student's ability to demonstrate competency/achievement of generic skills; the three broad competencies as identified by the DeSeCo project. The generic skills academic board statements from the following universities embody such: QUT, Macquarie University, University of Sydney, University of Tasmania, Griffith University. The broad conceptualisation of generic skills allows it to encompass anything from skill components to attitudes, values, dispositions, capabilities, and competencies.

Recognising these conceptualisations of generic skills is significant to realise, as the way in which generic skills, graduate attributes, etc. are conceptualised and articulated will have a direct and significant effect on the teaching and learning process that occur in the learning environment and the extent to which students develop these skills and achieve respective learning outcomes (Barrie, 2004). In particular, on whether generic skills are integrated into the curriculum or developed in separate, non-discipline specific courses. In university academic board statements, generic skills have a very strong normative dimension, and also thematic similarities across Australian universities can be identified. However, in the extant research literature, there is much more divergence.

Treleavan & Voola (2008) adopt the notion of graduate attributes as defined by the Higher Education Council of Australia (1992): as "the skills, personal attributes and values which should be acquired by all graduates, regardless of their discipline or field of study. In other words, they should represent the central achievements of higher education as a process" (p.20). Bowden et al. (2000) envisage graduate attributes as "the qualities, skills and understandings a university community agrees its students would desirably develop during their [studies]...and...shape the contribution they are able to make to their profession and as a citizen". "Broadly speaking, generic graduate attributes have come to be accepted as being the skills, knowledge and abilities of university graduates, beyond disciplinary content knowledge which are applicable to a range of contexts" (Barrie, 2004, p.262). Bowden (1999) offers an alternative more precise definition, in which the four graduate attributes can be situated. Bowden states that graduate attributes can foster a commitment to learning from every new situation students encounter, and the capability to make context-sensitive decision and judgements in the areas of teamwork, communication, creativity, critical analysis, and environmental awareness: a knowledge capability, which enables them to deal effectively with each new situation they encounter in their

professional and social lives. "...the term 'generic skills' is widely used to refer to a range of qualities and capacities that are increasingly viewed as important in higher education" (Hager, Holland & Beckett, 2002, p.3). These authors include: logical and analytical reasoning, problem-solving, effective communication skills, teamwork skills and personal attributes such as imagination, ethical practice, integrity and tolerance. Within any of the above definitions are notions of personal development for not only professional environments, but also for participation in the community as an engaged citizen. In general, generic skills can be conceptualised as both outcomes and processes underpinning curriculum, design and classroom teaching and learning (Barrie, 2007).

As stated by Sin & Reid, and evident throughout the literature on generic skills, "a key weakness in the literature is the vagueness in the conception of generic skills and the proliferation of terms on the literature..." (2005, p.5). Barrie (2002, 2004) also reports on a lack of shared understanding of what generic graduate attributes are, and when and how to integrate and develop such in the curriculum and classroom. The centralisation of generic skills in university curricula has created tension between discipline knowledge and the development of generic skills, the predominant argument being over where to situate the teaching and learning of generic skills.

This discrepancy, vagueness and overall lack of convergence on the conceptualisation and integration of generic skills can be attributed perhaps, amongst other factors such as the internationalisation of higher education and the broadening of stakeholders involved in the policy process to the shifting role of universities as sites of epistemic communities of teaching, learning and research to one in which emphasis is placed on quality assurance, vocational learning and graduate achievement of sets of skills and capabilities that will allow graduates to be active participants in the community and work force, and as global citizens. Some researchers link "this shift to the emergence of an 'information society'...where greater pressures are placed on professionals...and workers to both manage and master particular kinds of knowledge" (Star & Hammer, 2008, pp.238-9). The development of the concept of generic skills represents a shift from the traditional curriculum focus on 'content' and knowledge to one which emphasises 'process': a fundamental shift in the role and idea of the university as a site of teaching, learning and research.

The shift in the role of universities has broadened the dimension of participating groups in higher education policy and teaching and learning processes, with particular pressure for generic skills coming from industry and government bodies, concerned about the type of employee/citizen universities are producing. "The continual focus on graduate skills is really part of a bigger, as yet unresolved, debate about the purpose of university education and how to develop educated persons who are both employable and capable of contributing to civil society" (Business Higher Education Round Table, cited in James et al., 2004, p.175).

There is also now the added dimension of students as paying customers, increasing student expectations of teaching quality and learning support. Further exacerbated by the internationalisation of higher education and curricula in Australia. In particular, the growing representation of international students in the cohort, who generate 15% of Australian universities' revenue (*The Australian*, 14/07/09), and of the 544,000 international students in Australia in 2008, 39% were enrolled in higher education (Access Economics, 2009). The majority of international students are from China and India, and bring with them the differing expectations and learning needs that must be accounted for and addressed in not only curricula planning and design, but also teaching and learning pedagogy and research. This takes on particular significance in regard to recent government policy, which seeks to reward tertiary institutions for high levels of student satisfaction (Illing, 2005).

The actual set and sub-sets of skills, values, and attributes identified as central to students' achievement by HECA, are consistently found across and within the various conceptualisations of generic skills. Although the terminology may shift from author to author, institution to institution, the content and substance of such is generally consistent and reflects contemporary concerns of a wide range of stakeholders in higher education, particularly in Australia. Of particular importance, to academic staff, industry representatives, employers and government bodies, are critical thinking and teamwork skills, and sensitivity to sustainability and ethical practice.

1.2 The importance of graduate skills: personal and societal

The importance and relevance of graduate skills is now recognised not only by higher education institutions and professional industry bodies, but also by governments and accrediting bodies for quality assurance (Treleavan & Voola, 2008). The academic board statements on generic skills/graduate attributes clearly identify why the development and achievement of graduate skills is both highly important and crucial to an Australian university graduate: core competencies and skills to participate in the work force; commitment to life-long learning and renewal; being an active and engaged citizen at both the community and global levels; for a student's own personal, cognitive and affective development. The articulation of graduate skills in Australian university academic board statements sends a critical message regarding what type of citizens and potential employees the university wants to produce; what knowledge is valued and how it expects that knowledge to be used for individual, community and national development. It makes an explicit statement about the role of that particular university in the future tense, not just as a teaching, learning and research process, but in the dynamic processes and intersection of community, social, economic and political development. Hager, Holland & Beckett (2002) highlight the educational importance of graduate skills in regard to: course development, as they provide common course outcomes; course delivery and assessment; and can provide for quality assurance measures. In addition, graduate skills can promote and enhance students' commitment to life-long learning (Candy, 1991), and reflective and self regulated learning (Boekaerts, 1997; Luca & Oliver, 2003; Boekaerts & Cascaller, 2006).

According to Bowden et al. (2000), there are three principle arguments for the importance and inclusion of graduate skills in higher education, all of which relate to the shifting role of universities. First, it is now considered the role of universities to produce citizens, who can be agents for social change and good in the community. Second, upon graduation, students face an uncertain future and need to be prepared for such. Third, employers expect to see a certain set of generic capabilities demonstrated by graduates. Graduate skills are argued to be able to provide for and achieve the above assumptions and propositions. 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 normative framework for constructivism present in university curricula, research has shown that such principles are not always transmitted in practice (Tenenbaum et al., 2001).

From interviews with key academic, professional and industry stakeholders, the Australian Business Deans' Council's *Business as usual* report (Freeman et al., 2008) identifies the development of graduate skills in higher education as a salient theme. However, "there was little agreement about the degree to which generic skills were important...whose responsibility they were to teach...or how they should be assess" (p.23). Although, "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). Interviewees also expressed concern about professionally relevant learning, the internationalisation of higher education and the teaching of large classes (resource issues), of which all concerns are relevant to the teaching and learning of generic skills.

The final report of the Business, Industry and Higher Education Collaboration Council (BIHECC, 2007) highlights the development and promotion of critical thinking, teamwork, global sustainability, ethical practice and life-long learning as expected outcomes of business education (Barrie, 2004; Bath et al., 2004). There is strong research-based evidence that professional employability requires that graduates develop and demonstrate their achievement of graduate attributes (Treleavan & Voola, 2008; Hoban et al., 2004; Kember & Leung, 2005). "In the Australian context, employers have been so dissatisfied with the skills and competencies of graduates that the Australian government considered for a time linking graduate skills testing with federal funding" (Treleavan & Voola, p.161). The Australian Chamber of Commerce and Industry and the BCA both claim that many university graduates do not have appropriate 'soft skills', including those of teamwork, communication, problem-solving, life-long learning, creativity, inter-cultural competence, etc. A recent BCA report (2006, cited in Thompson et al., 2008) claims that employers continue to be dissatisfied with the skill level of university graduates. It also identified critical thinking, teamwork and ethical practice as key graduate skills that need to be addressed in higher education. Indeed, "universities should be concerned about claims of a skills deficit of their graduates" (Star & Hammer, p.240).

In accounting practice, the ASCPA & ICAA, in 1997 released a joint accreditation statement urging tertiary educational institutions to explicitly teach a range of graduate skills in their accredited programs. "The professional organizations expect accounting student to have acquired a range of generic skills by the end of their university studies and thus be work ready to join the profession" (Sin & Reid, 2005, p.2). The findings of NCVER (2003, p.2) relate the importance of generic skills to employability, and describe them as "service-oriented", and students with the requisite graduate skills will have a "comparative advantage in the labour market" according to the report. However, it also mentions that graduate skills enable students to be reflective and self-directed learners, active citizens and community participants. "Generic skills feature prominently in this body of literature as fundamental to developing progressive communities". The Kirby Report (2000, cited in Hager et al., 2002) highlights the shift to a knowledge-based economy, and the demands and expectations of employers for graduates who are able to successfully participate and contribute to this economy. A DETYA-funded report (2000, cited in Hager et al., 2002), *Employer satisfaction with generic skills*, reports that the overall performance of graduates was only "reasonable". Of particular importance, was the perceived lack of graduate capacity for independent and critical thinking. The report notes that "this skill is of great importance to employers, and seems to be the skill that most sets apart successful from unsuccessful applicants: in other words, employers value this skills, and can find it but it is rare" (viii, cited in Hager et al., p.4).

2. 'Best' practice for the teaching and learning of graduate skills

2.1 Promoting graduate skills

The development of graduate skills rests on a specific provision to foster them, in the context of disciplinary learning; to go beyond curriculum mapping and embedding to the design and implementation of effective teaching and learning strategies that are shown to promote/enhance graduate attributes (Bowden et al., 2000). Recently, researchers have reoriented the direction of research, moving beyond curriculum mapping and embedding. They argue that more emphasis needs to be placed on how graduate skills are acquired and developed, and the role of teaching and learning strategies used by instructors to promote/enhance such (Hoban et al., 2004). Research by Barrie (2002) suggests that Australian university teachers do not share a common understanding of either the nature of outcomes related to graduate skills, or the teaching and learning processes the might facilitate the development of these outcomes. They hold qualitatively different views in terms of what is learned and how such outcomes are achieved.

However, 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. "According to constructivism, learning is not passive reception of information but a learner's active continuous process of constructing and reconstructing his or her conceptions of phenomena", and the implications of such requires not only fundamental changes in teaching and learning approaches, but also in assessment procedures (Tynjala, 1999, p.364; Tenebaum et al., 2001). Bath et al. (2004, p.317) argue that in the environment of quality assurance and accountability "it is increasingly important for universities to develop methods for measuring and monitoring their achievement of learning and other outcomes". For these authors, qualitative measures such as student self-evaluation, although methodologically problematic and weak, are preferable to that of more objective, quantitative measures. For example, they state that the Graduate Skills Assessment (GSA) will give no clues as to the causes of the outcomes being measured. "An alternative approach...to validating the achievement of graduate skills would be to rely upon the assessment protocols in place within classroom contexts" (Bath et al., 314).

2.2 Graduate skills development

Australian universities' academic board statements concerning graduate skills demonstrate a wide and varied range of skills, capabilities, competencies and values, which have been explicitly articulated, mapped and embedded in business course curricula and programming. This has significant implications beyond mapping and embedding concerning teaching and learning pedagogy and assessment practices. In particular, there is the implication of a need to go beyond mapping and embedding to actual research into how graduate skills are acquired, developed and fostered (Hoban et al., 2004). In regard to assessment, how can instructors measure students' achievement of learning outcomes linked to graduate attributes and/or the effectiveness of teaching and learning strategies designed to promote graduate skills? (Bath et al., 2004). Although the normative

framework may reflect a shared rhetoric of graduate skills, it is clear from a review of the extant literature that there is a shared lack of understanding and consensus as to what are effective strategies and how they can best be fostered and developed. "...the experiences of authors reporting in the literature on initiatives to foster the development of such attributes...would suggest the need to question the extent to which this rhetoric does reflect a shared understanding" (Barrie, 2004, p.263). However, research suggests that a number of aspects of the teaching and learning process can be manipulated in such a way as to promote not only these four particular graduate skills, but also any number of graduate attributes, skills, competencies, etc. This includes the embedding of graduate skills, enquiry-based approaches to teaching and learning; the structure of the learning environment; and self-regulated learning.

Furthermore, recent research by Barrie (2002) suggest that Australian university teachers do not share a common understanding of either the nature of outcomes related to graduate skills, or the teaching and learning processes that might facilitate the development of these outcomes. They hold qualitatively different views in terms of what is learned and how learning outcomes are achieved. This is evident not only in researchers' conceptualisation of graduate skills such as critical thinking and sustainability, but also in their suggested 'best' practice activity designs for promoting such. The effectiveness of such practices is rarely measured qualitatively or quantitatively, and activities are rated as successful based on the researcher's own teaching experience. Where the effectiveness of activities has been measured, it is the students' perceptions of achievement that are measured. However, the majority of activities suggested in the extant research are conceptually grounded in well-researched teaching and learning pedagogy: active and student-centred learning; constructivist pedagogy; collaborative learning; and self-regulated learning. These pedagogies also underpin the conceptualisation of universities' graduate attributes policy statements, and curricula mapping and embedding. Kember & Leung (2005), in their study of CEQ graduate surveys, suggest that conventional, didactic teaching strategies are less effective in developing cognitive capabilities than other forms of teaching and learning involving active student participation. "If universities wish to produce graduates with the capabilities needed for knowledge-based societies, they should be looking at the types of teaching employed in their courses" (p.167).

2.3 Embedding graduate skills

"Generic attributes are seen to be inextricable linked with the learning or disciplinary content, but in an explicit rather than implicit manner" (Bowden et al., 2000). The first key practice to note is that of embedding graduate skills in disciplinary curricula. Research has consistently identified that high-level graduate skills are most effectively developed in the context of disciplinary knowledge, embedded within disciplinary curricula rather than addressed by separate strategies that are divorced from the discipline context (Barrie, 2004; Sin & Reid, 2005; Thompson et al., 2008; Bowden et al., 2000; Star & Hammer; Drummond et al., 1998; Bath et al., 2004). Remedial courses, separate non-discipline specific workshops that are removed from the disciplinary learning environments "run the risk of promoting a shallow, technical approach to teaching and learning" (Star & Hammer, p.241). However, these same authors also question whether embedding skills such as critical thinking in context-specific learning leads to students adopting a critical perspective in relation to other practices and other forms of knowledge outside of that discipline.

As researchers and academics have come to address the teaching and learning of graduate skills, there has been and still is a clear polarisation, between the embedding and integration of graduate skills in the curriculum (Barrie, 2004; Thompson et al., 2008; Star & Hammer; Bath et al., 2004; Bowden et al., 2000) and the creation of separate, non-discipline specific courses/workshops (Cranmer, 2006). Broadly, this reflects a "pedagogical trading zone between the graduate skills agenda and education's higher historic purpose" (Star & Hammer, p.244). That is, it reflects academics' fundamental attitudes to core teaching and learning pedagogy. For the former approach, it reflects the view that teaching must change to meet the learning needs of an increasing diverse student cohort, and student-centred pedagogy is one particular manifestation of this position (Biggs, 2003). For the latter, there is a distinct focus on what the student lacks, and it is a position that does not perceive students' learning difficulties and deficiencies as a reflection of teaching practice. Rather, there are a large number of local and international students who start their tertiary studies without the necessary skills to engage in their discipline community. A study by McInnis (2000) reports that academic staff protest of too many students in each classroom, each with a wide range of skills, abilities and needs, creating the need for separate workshops to teach students the necessary graduate skills.

This debate can also be found in the extant literature pertaining to specific graduate skills, such as critical thinking and ethical practice, and whether such skills should be embedded in course curricula or taught in a separate, non-discipline specific course/workshop. Although many researchers agree that graduate skills need to be integrated and embedded into existing course curricula (Barrie, 2004; Thompson et al., 2008; Star & Hammer, p.241; Bath et al., 2004; Bowden et al., 2000; Treleavan & Voola, 2008), "...the effective integration of these into developmental approaches in the classroom has been somewhat elusive" (Thompson et al., p.2). According to the research of Sin & Reid (2005), the teaching and learning strategies used varied in different tertiary institutions across Australia. "Strategies ranged from token acknowledgement in the course outline...to the inclusion of assessable tasks such as group assignments or oral presentations that call for skills that students were in fact presumed to have" (p.2).

This implementation gap can be partly linked to the divergent and conflicting understandings and conceptualisations of graduate skills (and the specific skills themselves) found amongst academic staff. Researchers state that the notion of graduate skills has a very weak theoretical and conceptual base (Barrie, 2004; Clanchy & Ballard, 1995; Sin & Reid, 2005). Drummond, Nixon & Wilkshire's (1998) research from the UK highlights the inherent difficulties in implementing good practice models for skills development. The authors identified institutional, departmental and individual barriers, and that the " 'dissemination' of information regarding what constitutes good practice will not, in itself, be sufficient to ensure meaningful development" (p.19). There is also evidence that embedding and integrating skills development has been "difficult to operationalise effectively" (p.21).

2.4 Research as learning

Malcolm (2008) emphasises the link between applied research by students, as engaged participants in the learning process, and teaching, in its primary role as providing opportunities for students to develop graduate attributes. The author argues, based on two years of research within the business, marketing, accounting and finance faculties of higher education institutions, that using research as a student project for learning promotes 'research-related' attributes: critical thinking skills, understanding and application of sustainability concepts, and understanding of the need for a high level of ethics and social, cultural and environmental aspects. Case studies are offered as examples of best practice, "and of the opportunity that teaching integrated with research process and practice offer...in which broad conceptions of learning and its associated outcomes can flourish" (p.21). This enquiry-based approach, in which students are engaged as active researchers in designing, analysing and presenting authentic projects, underpins transdisciplinary case studies, a strategy advocated by researchers for promoting and enhancing sustainability (Steiner & Laws, 2006; Steiner & Posch, 2006).

2.5 Self-regulated learning

The notion of an autonomous learner, of reflective and self-directed learning as articulated in different institutions' conceptualisation of graduate skills, is directly linked to the notion of self-regulated learning. The development of graduate skills in general, and of these four in particular, is multidimensional and cannot be captured or enhanced through activity design (Drummond et al., 1998). Research suggests that students' development of graduate skills is directly motivated and affected by their ability to self-regulate their learning (Luca & Oliver, 2003; Boekaerts & Cascaller, 2006). Boekaerts & Cascaller argue that it is essential to adopt an approach to teaching and learning that allows instructors 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 instructors to provide opportunities for students to not only develop their graduate skills, but also their self-regulation capabilities, which are considered to complement the development of any one graduate skill.

Luca & Oliver (2003) report on an instructional model based on three key teaching and learning strategies used in combination with a web delivery system to promote 'generic skill development'. The three encompassing elements of self-regulated learning, reflection and authenticity that support generic skill development are "consistent with the plethora of descriptions describing successful teaching learning in higher education..." (p.2). According to the authors' evaluation of pre- and post-text data, all measures of 'workplace skills' increased significantly, suggesting that embedding these principles in course design and delivery can positively affect students' achievement of learning outcomes related to generic skill development.

3. Strategies and activities for promoting and enhancing the development of graduate skills

The problematic in identifying 'best' practice in activity design for the promotion and enhancement of graduate skills in general, and of these four in particular, has been and continues to be how student achievement is captured and measured, the generalisability of research results, assessment practices, application of activities and strategies across disciplinary contexts and institutions, and the diversity in student profiles and learning needs (in particular, addressing the needs of students from non-English speaking backgrounds). The review will present a critical analysis of the extant literature as it relates to promoting and enhancing critical thinking, teamwork, sustainability and ethical practice through activity design. Although not exhaustive by any means, there are identifiable currents and underlying principles in activity design, which includes contested ideas of student-centred pedagogy, active, experiential and problem-based learning, reflection, collaboration, authenticity, and the notion that there is no single 'best' practice.

3.1 Critical thinking

A panel of experts in the U.S. and Canada define 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 judgement is based. Critical thinking is essential as a tool of inquiry" (Facione, 2006, p.22). According to Pithers (2000, p.239), who reviews critical thinking in the education literature, "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 a prospective employee (Facione, 2006; Moore, T., 2004). The outcomes of critical thinking instruction can be stated in terms of societal consequences and individual learning, a base statement that can be made for graduate skills in general (McGuinness, 1993). There is contestation over its conceptualisation, which has direct implications for its location in teaching and learning processes. The contestation has been epistemological, revolving around two broad conceptualisations of critical thinking; between critical thinking as a universal graduate skill and critical thinking as a loose category of diverse modes of thought. Representing the former, Ennis' (1962) definition has provided the theoretical framework for many critical thinking workshops, especially in the U.S. (Moore, T., 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 elaborates on this general statement, codifying an extensive list of aspects and sub-skills of critical thinking, and "insists that they exist as a set of independent cognitive abilities which can be taught in relation to any propositional content" (Moore, T., p.5). Teaching critical thinking from this perspective involves developing students' skills and abilities, and the pedagogic goal in 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 latter, 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/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). "The implications for teaching of the McPeck position are that the development students' critical abilities should always be pursued within the context of their student within the disciplines" (Moore, T., pp.5-6). According to Moore, the debate in Australia is clearly moving in two directions, the federal government appearing to have a disposition towards a generalist (Ennis) understanding as evident by the GSA.

Recently, the conceptualisation of critical thinking has attempted to move away from this debate, divorcing itself from whether critical thinking should be embedded or addressed separately from disciplinary context, to 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 is after Ruggiero (1988), who states that thinking needs to be fostered holistically, in which 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 (p.6) 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". Indeed, this notion that critical thinking is enhanced by self-regulated learning is echoed by Pithers (2000), Schunk & Zimmerman (1994), Boekaerts & Cascaller (2006) and Ladyshevsky (2006).

Perhaps as a result of these divergent conceptualisations of critical thinking, and the various aspects of cognitive and affective abilities and dispositions that it encompasses, Vardi (1999) argues that the extant research literature does not offer any clear guidelines for promoting and applying critical thinking skills in a learning environment. However, this is no longer the case, as the research literature offers a range of general guidelines and discipline-based strategies, and there are far more pressing issues that must be addressed. First, although numerous examples of critical thinking strategies are offered, instances of empirically informed research are rare. Second, research (Phillips & Bond, 2004; Pithers, 2000) suggests that there is also a lack of shared understanding of what critical thinking is and how it is acquired and achieved between instructors and students. According to Phillips & Bond (p.293), the implications of such 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".

These two issues give weight the widely held notion that it is a fallacy to assume there is a 'correct programme' 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, p.242). According to Pithers, the teaching and learning of critical thinking can be enhanced if the eight fallacies identified by Sternberg are avoided, and the myths of Langer (1997) dispelled. On a review of the extant research literature, Pithers also suggests metacognitive and student-centred approaches, scaffolding, self-regulated learning, problem-based learning and learning environments anchored in 'human dialogue' characteristics rather than technology-based in order to enhance students' critical thinking skills.

Vardi's (1999) review of the literature reveals a number of various strategies divorced from disciplinary knowledge and context. The following is a list of strategies given by Vardi from the research of 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 inform the metacognitive, cognitive and affective processes of critical thinking. The case study method has been, and still is, a very popular pedagogic tool in the various disciplines encompassed by business faculties, as academic staff maintain a strong commitment to case pedagogy. However, research demonstrates that the changing role and context of higher education is having an effect on the use of case study methods in the teaching and learning of undergraduate business courses. The research of Booth et al. (2000), based on qualitative survey data collected from both students and academic staff, reveals a set of strong tensions in the use of case studies in a mass higher education context. "Pressure to reduce costs, tighter enforcement of copyright laws, increased external monitoring, coupled with increasing complexity in the management and delivery of large courses and changes in students expectations have led staff to abandon, modify or develop their use of cases" (p.73). Furthermore, the authors highlight the underdevelopment of research focusing on the use of case studies as a pedagogic tool for undergraduate teaching and learning, stating that most of the extant literature has focused on its role in postgraduate business studies.

'Best' practice teaching and learning activities and strategies

Peach et al. (2007) report on the University of West Florida's college of business to develop learning outcomes and the assessment of critical thinking. "Critical thinking is recognized as an important, but difficult, ability to assess" (p.313). The key activity for developing critical thinking in this course was a case analysis. "A major pedagogical tool...is a series of cases analyses where student prepare an analysis outside of class and then participate in a classroom discussion of their analysis...culminates in an individual written assignment" (p.314). However, specific details on the case analysis activities and the written assignment are vague, and it is not

made clear how critical thinking is promoted using either of these strategies. Results, captured quantitatively using a marking rubric, indicate an overall improvement in the achievement of critical thinking. However, “it was not clear whether the improvement was a result of the intervention in the course...or the intensive review of the capstone course” (p.315).

Twardy (2004) and van Gelder (2005) report on the use of argument maps to promote critical thinking. Strong empirical data is presented by Twardy from a quantitative critical thinking skills test, after Ennis’ concept, and in terms of teaching deliberate practice, from van Gelder (2005). “This means that our students will improve their critical thinking skills most effectively just to the extent that they engage in lots of deliberate practice in critical thinking” (p.43). Thomas, Davis & Kazlauskas (ND) also highlight identifying and analysing the structured arguments of writers in order to promote critical thinking, as well as small thinking exercises in logic. Measurement of students’ achievement of learning outcomes, critical thinking was captured through student and lecturer reflections. Page & Mukherjee (2007) present negotiation role-plays (NRP) as a strategy to provide students with active, cooperative and multiple classroom experiences to enhance critical thinking. The activities associated with the process for NRP were aligned with the higher-order cognitive skills on Bloom’s Taxonomy. Although “no attempt [was made] to measure the level or extent to which higher order thinking skills were used...[or] provide evidence of improvements in these skills on the basis of pre- and posttests”, the authors advocate the general applicability of this approach across the business faculty (p.255).

Ladyshevsky (2006) reports on the use of peer coaching in a postgraduate business course to promote critical thinking skills. This approach is grounded in the concept of cognitive development theory, which posits that peer interaction promotes cognitive development because of the occurrence of critical cognitive conflicts, and within a less threatening environment in which the “issues of evaluation and power are minimized” (p.70). A total of 43 students participated in a peer-coaching program over one year, in which they were required to establish learning objectives and the maintenance of reflective learning journals for one unit of study. Students were also required to submit peer-coaching reports, which were qualitatively analysed by the author. The results are described as ‘positive’, the author stating that many students perceived the program as enhancing their critical thinking and the heightening meta-cognition. “Peer coaching also enhanced students *self-confidence* and *self-efficacy*” (p.80). The outcomes of this study support the use of authentic, reflective and self-regulated learning in the promotion of critical thinking, as students engaged in meta-cognitively rich discussions in a safe and non-evaluative learning environment.

A pilot study by Celuch & Slama (1999), while underpinned by situated, active and self-regulated learning pedagogies, is very vague in offering descriptions of the strategies and activities used to promote critical thinking. Furthermore, the student self-assessment scores used as qualitative data to measure the effectiveness of the course under study “are not meant to be taken as scientific” (p.139). Vo & Morris (2006), based on a review of the extant research literature, argue that the role of debate as a valuable pedagogic tool for promoting active learning, critical thinking and creativity skills in economics is underrepresented. “There is evidence from sociology substantiating the value of debate in promoting critical thinking” (p.316). The implementation of the debate and its embedment in the courses was very well structured and supported. Each student had to produce a research paper analysing his or her debate issue. Student assessment of achievement consisted of a 10-statement survey distributed to the three sections of the undergraduate economics course (n=97). The results of a survey suggest that empirical support for the hypotheses concerning long-term objectives was less consistent than those with short-term outcomes. However, 61% of students perceived that the debate experience enhanced their critical thinking skills. The majority of the agreement came from the macroeconomics class (72%). “The enthusiastic short-term assessments by students suggest that debate can be a valuable teaching tool” (p.319).

3.2 Teamwork

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 & Huddleston, 2003; Kazlauskas et al., 2007). Indeed, “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. 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 is rather the sharing of ideas . Both notions imply the notion of goal attainment.

There is an assumption and almost unanimous consent in the literature that teamwork, embedded in the curriculum, can promote students capability and competence to collaborate and cooperate in group settings, and enhance their problem solving, communication, leadership, interpersonal, social and critical thinking skills (Hansen, 2006; Ashraf, 2004; Hernandez, 2002; McCorkle et al., 1999). This is perhaps because active learning, social constructivism and cooperative learning theory underpin teamwork, as a critical learning pedagogy. However, these skills and capabilities are not acquired nor developed without scaffolding and facilitation (Kazlauskas et al., 2007). Simply, “placing students into groups for class projects is not the same as developing teams” (Barker & Frank, 1997, p.304, cited in Hansen, 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). Research demonstrates that placing students into teams without preparation, scaffolding and facilitation does not result in higher academic achievement nor the achievement of learning outcomes related to skill development and attainment, and can result in unclear goals, mismanagement, conflict and inequalities (Hansen, 2006; Kazlauskas et al., 2007). Furthermore, research generally reports mixed student perceptions of teamwork, and that teamwork can be effective 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 gives weight to such a conclusion is 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 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 extant research 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/group formation (Baskin et al., 2005; Pineda & Lerner, 2005; Page & Donelan, 2003; McKendall, 2000; Hansen, 2006; Huff et al., 2002; Pfaff & Huddleston, 2003; Chan, Shun & Lai, 1996; Kazlauskas et al., 2007). “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 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). Research does demonstrate 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). Specifically, Pineda & Lerner find that engaging in transition activities such as establishing team goals, rules and guidelines, assessing member skills and assigning roles are positively associated with goal attainment, student satisfaction and learning through teamwork. Team-building processes, either instructor-led or by way of student administrative processes, can also mitigate many of the problems associated with teamwork, such as specialisation of labour, social loafing, and inadequate rewards. (Pfaff & Huddleston, 2003; McCorkle et al., 1999; Oakley et al., 2004).

Based on an extensive review of the extant research literature, Hansen (2006, pp.13-4) lists ‘best’ practices in guiding and scaffolding the design and implementation of team-building strategies/activities. This review has generally found the research literature to be consistent and positively correlated with Hansen’s list.

‘Best’ practice teaching and learning activities and strategies

- Emphasising the importance and relevance of teamwork (Pfaff & Huddleston, 2003; Page & Donelan, 2003).
- Explicit teaching of team development and teamwork skills (Huff et al., 2002; Kazlauskas et al., 2007; Page & Donelan, 2003; Oakley et al., 2004)
- Conduct team building exercises to create cohesion (Deeter-Schmelz et al., 2002). The authors’ study found that the level of cohesion “plays a critical role in effective teamwork and as such contributes indirectly to task performance and goal achievement” (p.120). They list five exercises that are effective for building cohesion and consensus (p.121). It is suggested that these activities can be used early and be devoted to team building, team goal setting and conflict resolution.

- Determining the best method of team formation. Research tends to suggest that the most effective method is for instructors to assign teams (Hernandez, 2002; Koppenhaver & Shrader, 2003; Oakley et al., 2004). However, Bacon et al. (1999 in K & S) note that instructors have little to guide their decision-making process. Koppenhaver & Shrader suggest that instructors use student profiles and information to assign teams.
- Assigning a reasonable workload and establishing clear goals (Page & Donelan, 2003; Pfaff & Huddleston, 2003)
- Requiring groups to have specific or assigned roles (Page & Donelan, 2003; Pfaff & Huddleston, 2003). However, this can create what McCorkle et al. call a 'specialisation of labour', and it is suggested that roles be rotated if possible (Clinebell & Stecher, 2003).
- Provide class time for team meetings (McKendall, 2000; Pfaff & Huddleston, 2003; Kazlauskas et al., 2007).
- Requesting multiple feedback points for monitoring (McKendall, 2000; Page & Donelan, 2003; Oakley et al., 2004).
- Requiring individuals to be personally accountable (Page & Donelan, 2003; Pfaff & Huddleston, 2003; Joyce, 1999)
- Using peer evaluations as part of assessment (McKendall, 2000; Pfaff & Huddleston, 2003; Erez et al., 2002; Clinebell & Stecher, 2003; Oakley et al., 2004).

From qualitative data captured through student surveys and reflections, the following strategies are also given as effective for promoting team-building and teamwork skills: team contract or charter (McKendall, 2000; Page & Donelan, 2003; Clinebell & Stecher, 2003; Oakley et al., 2004); rotated leadership (Erez et al., 2002; Pfaff & Huddleston, 2003); building trust (Huff et al., 2002). Kazlauskas et al. (2007), on the basis of a qualitative analysis of student comments regarding teamwork and a limited literature review, suggest that collaborative assignments and learning environment need to be scaffolded and carefully structured. To achieve a meaningful learning experience, students must be explicitly guided through the individual and team aspects of a task, and given an opportunity to critically reflect on the process. From the analysis of student comments, it is suggested that for a successful teamwork experience to occur, there is a need to ensure: development of interpersonal skills; opportunity to make social contacts; addressing student concerns about meeting times, language difficulties and conflict resolution; fairness in marking and contribution; and extra concern for international students and their language learning needs. Although many of the aforementioned researchers present strategies consist with the above, Kazlauskas et al. are one of the few to explicitly identify the needs of students from non-English speaking backgrounds.

“Is it possible that despite their potential benefits, group projects may produce a net negative learning result compared to individual projects?” (McCorkle et al., 1999, p.109). Due to the number of problems associated with teamwork, both Ashraf (2004) and McCorkle et al. (1999) question the effectiveness and authenticity of teamwork as a pedagogic tool. McCorkle et al. (p.114) suggest that instructors re-examine the use of group projects as a pedagogical tool, in regard to its effectiveness in the development of discipline-based knowledge and skills. Of more value is Ashraf’s correct observation and concern regarding the use of anecdotal and experiential evidence in measuring the effectiveness and value of teamwork in the achievement of student learning outcomes. “The studies rely on survey data and lack rigor in collection and data analysis” (p.214).

Overall, organisational, design and developmental aspects are critical to consider. It is also critical to reconsider the learning outcomes associated with teamwork, as their articulation and assessment will have direct effects on the teaching and learning processes of team-building and teamwork. Both students and instructors have mutually reinforcing roles to play in the effective development not only of team-building, but also in the development of teamwork skills that are acquired in the learning process, and to mitigate problems that will arise in the team-building process. The findings of this review largely agree with the comments of Ashraf in regards to research methodology, which gives cause for concern in implementing teamwork as an effective and critical pedagogic tool. The results of the extant research literature are primarily obtained by experiential or qualitative means. However, the aforementioned strategies articulate and embody the

theoretical principles of social constructivist pedagogy, which can facilitate and enhance students' learning and level of cognitive and affective achievement. It is imperative to consider such research and to develop guidelines for 'best' practice as there is an educative/personal need and a market/societal need in higher education to produce graduates, who have to capacity to function as members of a group/team in any context.

3.3 Ethical Practice

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

In regard to the teaching and learning of ethical practice, two traditional approaches exist: philosophical/theoretical and practical (Hosmer, 2000; Hunt & Lavarie, 2004; Iyer, 1998). The former stresses 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 latter focuses more on the strategic and functional problematic of 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" (Homser, p.171). The locus of ethics instruction, in business curricula, should logically revolve around the decision-making process (Star & Hammer, 2007, p.244)

"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" (Ritter, 2006, p.155). However, 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" (Felton & Sims, 2005, p.379). What also represents a problematic and challenge, as with the other attributes, is the dynamic and contentious conceptualisations of ethics, which are informed by a range of historical, philosophical, religious, institutional, political, social and personal moral considerations and affiliations (Lam & Shi, 2008).

Ethical practice can be embedded in the learning process of critical reflexivity and is underpinned by ideas and preconceptions of morality, moral codes and/or personal core values. The objectives/outcomes of the teaching and learning of ethical practice can be situated along a taxonomy of conceptual, procedural and professional knowledge and understanding. There is consensus in the extant research literature regarding these objectives/outcomes (Sims, 2002; Weber & Glyptis, 2000; McDonald & Donleavy, 1995; Ritter, 2006; Felton & Sims, 2005; Falkenberg & Woiceshyn, 2008; Hosmer, 2000). What underpins these outcomes is the idea of moral development (Kohlberg, 1984). From the beginning, these outcomes are: moral awareness; moral/critical reasoning; ethical sensitivity; ethical application and adaptation (behaviour, decision-making); and ethical evaluation. While a students' level of achievement along this taxonomy will be affected by predisposed personal moral codes/values prior to higher educational studies, the key to the teaching and learning of ethical practice is the clarification of the distinction between ethics and moral values (Ritter, 2006). "...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).

Therefore, it is of no surprise that a number of researchers emphasise the notion that no one 'right' approach exists to teaching and learning ethical practice (Sims, 2002; Sims & Felton, 2006; Ritter, 2006). Ritter (2006) states that there are no simple answer to either the empirical or theoretical research to questions concerning ethical decision-making strategies, pedagogical approaches to teaching and learning, and content. Felton & Sims (2005, p.384) state that pedagogical approaches to the teaching and learning of ethical practice should be determined by institutional goals, student needs, the business and social environment, and learning objectives. Sims & Felton (2006, p.299) argue that while there is no 'best' practice for the teaching and learning of ethical practice, "the real challenge to effectively teaching ethics require the business ethics teacher to give focused attention to four principle questions": What are the objectives/outcomes of the course? What kind of learning

environment should be created? What learning processes need to be employed? What are the roles of the participants in the learning experience?

Research and theory suggests that the teaching and learning of ethical practice in business can be effective in developing students' moral reasoning, ethical sensitivity and ethical behaviour (Sims, 2002, Hunt & Lavarie, 2004; Ritter, 2006; Weber & Glyptis, 2000; McDonald & Donleavy, 1995). Sims (2002) provides guidelines, supported by the research literature, for the effective teaching and learning of ethical practice:

- Articulation and consensus as to the objectives/learning outcomes (McDonald & Donleavy, 1995; Hunt & Lavarie, 2004; Felton & Sims, 2005).
- Perceived as relevant by students (Sims, 2002).
- Use of experiential pedagogy (Ritter, 2006; Sims, 2002; Sims & Felton, 2006; Hunt & Lavarie, 2004; DesJardins & Diedrich, 2003).
- Creation of a safe and trusting learning environment (Sims, 2002; Ritter, 2006).
- Critical reflection is part of the learning process (Hunt & Lavarie, 2004; Sims, 2002).
- Design and implementation is consistently renewed (Sims, 2002).

However, the extant research literature has been generally inconclusive as to the effect of the teaching and learning of ethical practice, and there is disagreement and contention over effective strategies (Lam & Shi, 2008; Ritter, 2006; Hunt & Lavarie, 2004). Despite the number, and recent increase, of research articles that describe activities and strategies for the teaching and learning of ethical practice in the business curriculum, "rarely do studies...measure the results of classroom activities in terms of their ability to change student attitudes" (Bodkin & Stevenson, 2007, p.209). Furthermore, "scant empirical evidence exists on the ethical perceptions of students" (D'Aquila et al., 2004, cited in Cagle, Glasgo & Holmes, 2008, p.163). Studies that have measured the ethical perceptions of students, and the effect of strategies of students' attitudes and behaviours, are not longitudinal and thus, generally limited by their inability to measure the long-term effects (Lam & Shi, 2006; Bodkin & Stevenson, 2007; Cagle et al., 2008).

Ethical Practice	Evidence		
	Quantitative	Qualitative	Experiential
Case study; vignettes; ethical dilemmas		Cagle (2005) Cagle & Baucus (2006) Bodkin & Stevenson (2007) Cagle, Glasgo & Holmers (2008) Ritter (2006)	Hosmer (2000) Sims (2002) Felton & Sims (2005) Sims & Felton (2006) Hunt & Lavarie (2004) Falkenberg & Woiceshyn (2008) Hess & Norman (2004) DesJardins & Diedrich (2003)
Role plays		Bodkin & Stevenson (2007)	Sims (2002) McDonald & Donleavy (1995) Felton & Sims (2005)
Student creation of code of ethics			Sims (2002)
Community service learning; field- based application; internships		Weber & Glyptis (2000) Boss (1994)	Sims (2002) Felton & Sims (2005)
Ethics Bingo		Haywood et al. (2004)	
Critical reflection; journals		Weber & Glyptis (2000) Bodkin & Stevenson (2007)	Hunt & Lavarie (2004) Sims & Felton (2006)
Experiential pedagogical approach		Ritter (2006)	Hunt & Lavarie (2004) Sims (2002) Sims & Felton (2006) DesJardins & Diedrich (2003)
Small group learning; collaborative learning		Ritter (2006)	Hunt & Lavarie (2004) Sims & Felton (2006)

Table 1. 'Best' practice teaching and learning activities and strategies

Despite the proliferation of research articles exploring the integration of ethical practice into the business curricula and its articulation in university and accreditation bodies' policy statements, there appears to be a significant implementation gap between current practice and normative notions of the teaching and learning of ethical practice (Nicholson & DeMoss, 2009). A number of studies identify the various barriers within higher education institutions to the teaching and learning of ethical practice (Nicholson & DeMoss, 2009; McDonald & Donleavy, 1995; Haywood et al., 2004). Although research and theory suggests that ethical practice can be taught and/or learnt, the results of these studies generally are more ambiguous and inconclusive than any single article tends to suggest. Furthermore, there is disagreement over whether ethical practice should be embedded in business curricula or taught through non-discipline specific workshops/courses (McDonald & Donleavy, 1995; Nicholson & DeMoss, 2009). Overall, the research generally suggests that some pedagogical approaches are more effective than others "but it is difficult to affect long-run change in those predisposed to unethical behaviour" (Bodkin & Stevenson, 2007, p.207). Although those activities and strategies espoused as 'best' practice are generally done so on experiential evidence, the strategies and activities are designed within critical, constructivist, and active learning pedagogies: well-considered the most effective pedagogical approaches for enhancing students learning and teaching practices in regard to fostering higher-order skills, autonomous and collaborative learning. "Future researchers need to examine actual course content at the program level to determine the inclusion across courses and pedagogy tools used or needed to teach it" (Nicholson & DeMoss, 2009, p.217). Despite the trend in the extant research literature, "no emerging model shows the best pedagogy to use while integrating business ethics into the broader curriculum" (Cagle et al., 2008, p.77).

3.4 Sustainability

The conceptualisation and advocacy for sustainability in general, and for education for and about sustainability in particular, has been articulated at the national and international levels, in a variety of institutional documents. The evolution of the concept of sustainability as articulated in these documents has witnessed the shift of the concept's focus in environmental education to a much more holistic and integrated articulation in university documents across curricula, and the creation of the notion of sustainable development. Sustainable development originated as an international norm within the Stockholm Declaration (UNEP, 1972), and was concerned with the preservation and enhancement of the environment. However, it is the Brundtland Commission's (WCED, 1987) definition that is most widely used. Sustainable development 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" (WCED, 1987, p.9). Underlying this broad concept are the notions of ecological, social and financial/economic sustainability. This understanding has been widely articulated in many public and private institutions, including Macquarie University's own definition of sustainability. Although introducing the notion of generational responsibility, this conceptualisation does not elaborate on the notion of human needs, the problematic of operationalising the concern for future generations, and firmly entrenches the concept of sustainability in the neo-classical economic paradigm (Bannerjee, 2004). However, from this, came the ratification of the Talloires Declaration (UNESCO, 1990), in which university administrators committed to sustainable development, broadening the dimensions of sustainability to include educational resources. Arguably more significant in this context, was the U.N. Conference on Environment and Development in 1992, during which the wider international community reorientated education towards sustainability with a commitment to *Agenda 21*. This commitment 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".

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, Australian Research Institute in Education for Sustainability (ARIES) has conceptualised education for and about sustainability as requiring teamwork, critical thinking, and transdisciplinary 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).

The problematic of sustainability and education

Sustainability is a broad concept, enveloping 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. Within such, 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", and as such an understanding has come to inform public discourse. 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, and as such "we need to exercise caution in understanding how it is being used, and by whom and for what purpose" (Bannerjee, 2004, p.34). For the concept itself is controversial, and many authors agree that its location in education needs to be critically positioned and oriented in order to promote students' understanding, awareness and response to sustainability in the business curriculum, and their own personal and professional lives (Christensen et al., 2007; Bannerjee, 2004; Springett, 2005; Wals & Jickling, 2002; Galea, 2004). Sustainability in the undergraduate business curriculum

and extant research literature also 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 the teaching and learning approaches to educating for and about sustainability. Indeed, Wals & Jickling (2002) argue that the confusion and contestation over the conceptualisation of sustainability is an impediment, but also an opportunity to engage students in critical knowledge-building and questioning, the teaching and learning process, and the development of a range of graduate skills.

Bannerjee (2004) argues that at the organisation, corporate level, the focus of sustainability has generally been restricted to the environment and a business-driven agenda: an agenda of long-term, sustainable competitive advantage, in which equity is often unaccounted for. Springett (2005) suggests that the business curriculum has offered the most problematic site for integrating ecological and social sustainability into the curriculum. "Education for sustainability...has represented a threat to the orthodox paradigm of business and business theory..."(p.148). Thus, the business literature has often attempted 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 has established a "business case for" sustainability (Willard, 2004; Coulson & Thomson, 2006; Bridges & Wilhelm, 2008). Wals & Jickling (2002) also highlight this contradiction in the concept of 'education for sustainability' and the status of sustainability as a concept in education. They argue that the concept contradicts the 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).

Thus, there is an advocacy for higher education to engage students critically with and in the processes of sustainability. Rather than teaching and learning being prescriptive, it is argued, as with the other graduate skills, that it needs to be situated in a constructivist pedagogy. Furthermore, it is suggested that taking a critical theorisation and perspective to 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; Wals & 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). Researchers argue that a multidisciplinary approach is essential to critically engage, with a focus on competencies and a re-orientation to student-centred, collaborative and self-regulated learning, with an active engagement in critical thinking. "In other words, serious attempts to integrate sustainability into higher education brings academics into whole new pedagogical worlds – experiential, epistemic and systemic" (Wals & Jickling, p.229).

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 is a newly emerging area in the teaching and learning of sustainability, in particular with the recent creation of the *International Journal of Sustainability in Higher Education*, and as such demonstrates a number of limitations. Research is largely confined to postgraduate business curricula, with particular regard to MBA programs (Christensen et al., 2007; Tilbury et al., 2004; Stubbs & Cocklin, 2008; Willard, 2004). In addition, there is a lack of conceptual alignment across studies and disciplines and a consistent lack of empirical research and evidence demonstrating the effectiveness of suggested 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 exclusive of meeting the needs of students from non-English speaking background.

'Best' practice teaching and learning activities and strategies

Arbuthnott (2009) emphasises the need to address the gap between intention and behaviour, in particular contextual barriers, arguing that the presentation of specific examples and case studies to illustrate abstract concepts, and developing class exercises and assignments based on specific behaviours (problem-based learning), would be valuable teaching and learning strategies. Bridges and Wilhelm (2008) seek to integrate

sustainability into the marketing curriculum, as the coverage of sustainability in the marketing literature remains marginal. Although the authors situate sustainability concepts in the 4Ps typology, they offer no discrete activities, learning exercises or assessments. However, the authors state that by the end of their own MBA course, students were “able to identify and apply sustainable business concepts to different areas of marketing strategy” (p.43).

Steiner & Laws (2006) offer a critical analysis of both the Harvard case study and ETH (transdisciplinary) case study methods, arguing for the ETH method in teaching and learning approaches to sustainability, based on pedagogical reasoning rather than empirical evidence. Steiner & Posch (2006) present a case study for the use of ETH case studies as a pedagogic tool. Based on sound pedagogic reasoning, the authors state that this approach promotes interdisciplinary collaboration, self-regulated learning and other graduate skills, as it embeds the students deeply within the teaching and learning process. Although they authors offer a very detailed account of the study’s content and development over a course, it offers no empirical evidence or results, and is highly resource-intensive and time-consuming.

Stubbs & Cocklin (2008) describe a framework to help MBA students to understand and negotiate different sustainability perspectives; an approach strongly advocated for in the research literature. Although they offer an example of how it can be used in the classroom, the authors offer no results as to whether the course enhanced students’ understanding and/or engagement with sustainability. Brown (2004) also takes up the call for the critical theorisation and engagement with sustainability, arguing that whole-systems learning is key. However, neither research or evidence is given to justify such a reasoning. Gumley (2006) describes the ‘structured’ internship approach at Monash University and the proposal of a new program to be offered for credit, focusing on innovative business sustainability strategies. However, the internship approach is not an equitable solution, as it can not be accessed by all students. Willard (2004) explores the implications of integrating sustainability into MBA programs, highlighting the financial benefits and suggesting the use of business case studies as a pedagogic tool.

Coulson & Thomson (2006) explore the integration of sustainability in accounting using a group collaborative project, in which students must create a shadow account, as assessment. “To develop an understanding of accounting and sustainability, we felt it important to locate the intangible notions of sustainability in a specific setting. This would enable students to deconstruct sustainability into a set of ‘things’ that they could investigate.” (p.265-6). A range of activities and assessments were organised around this main project. A portfolio of assessment was developed to include formative and summative elements, written and oral, lecturer and peer, individual and group. “This course model created the potential to integrate individual students’ views, encourage participation, collective learning, praxis and critical reflection. These aspects are not only seen as desirable from a Freirian perspective, but also from a number of other educational strategies...and from the literature on sustainability education” (p.267). By way of evidence, the authors did analyse the students’ reflective essays, and these essays “explicitly recognized the way in which this course changed their perception of sustainability” (p.268). However, the analysis of these essays focused on student feedback on the course itself, rather than on their understanding of sustainability.

4. Conclusion

The importance of graduate skills has been widely articulated in both institutional documents and the extant research literature. However, the competing and divergent conceptualisations of the graduate skills reviewed in this study indicate an inherent weakness in the graduate skills agenda. Furthermore, the overall lack of empirical evidence illustrates the problematic of designing not only activities that can effectively promote graduate skills development, but also assessments that can accurately measure and provide opportunities for students to enhance their learning and demonstrate achievement of relevant learning outcomes.

5. References

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