



ENHANCING THE
LEARNING AND
EMPLOYABILITY OF
GRADUATES:
THE ROLE OF
GENERIC SKILLS

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INTRODUCTION

In an era when various new kinds of partnerships and relationships are developing between industry and higher education, and between the different sectors in education, a paper on generic skills is timely. This paper outlines the nature and scope of generic skills before discussing the reasons why they have become a focus of policy interest. The benefits of paying attention to generic skills for learning and employability purposes are considered in relation to relevant research findings. The holism, contextuality and relational level of generic skills as well as the links to lifelong learning are highlighted. Examples of the incorporation of generic skills into higher education structures and courses are also described. There is also discussion of ways to close the 'employability' gap. The paper then suggests a learning framework for generic skills at different levels. Finally, the paper makes some recommendations in respect of further work that would be valuable in pursuit of the agenda to enhance the learning capability and employability of graduates.

1. WHAT DO WE MEAN BY GENERIC SKILLS?

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. These include thinking skills such as logical and analytical reasoning, problem solving and, intellectual curiosity; effective communication skills, teamwork skills, and

capacities to identify, access and manage knowledge and information; personal attributes such as imagination, creativity and intellectual rigour; and values such as ethical practice, persistence, integrity and tolerance. This diverse collection of qualities and capacities is distinguished from the discipline-specific knowledge and associated technical skills that traditionally are associated with higher education.

While some of the 'skills' listed have significant physical components, e.g. body language in interpersonal communication, others are mainly mental. Still others are, strictly speaking, not so much skills as attitudes and dispositions.

Generally when people talk about 'generic skills' they are referring to a very mixed bag of things - skill components, attitudes, values and dispositions. Some of these may not be improved with practice in the narrow sense of guided repetition. Rather the attitudinal and dispositional qualities are better seen as products of cultural, ethical and social circumstances that may be refined and modified by knowledge and reflection. In these circumstances, a term such as 'attribute' is probably a better descriptor of the collection of qualities that together constitute 'generic skills'. However, given the wide currency of the term 'generic skills' in the community generally, this paper will retain that term for discussion purposes. However, when referring specifically to graduates the more accurate term 'attribute' will be used.

2. WHY ARE GENERIC SKILLS IMPORTANT?

The growing emphasis on generic skills in higher education has several sources. One is the increasing evidence of demand from business and employer organisations for graduates to possess generic skills. There are also various economic, technological and educational arguments that have brought generic skills to wider attention. The contemporary focus on generic skills is really part of a bigger, as yet unresolved, debate about the

purpose of university education and how to develop well educated persons who are both employable and capable of contributing to civil society (see Kemmis 1998).

2.1 Demand for generic skills from business and employers

Generic skills are important for employability, but what is 'employability'? The Kirby Report (Final: August 2000), which draws on the ILO (2000), discusses employability in the context of changing socio-economic and work conditions (p. 37):

Education and training are the main instruments available to governments and the community to prepare individuals for a rapidly-changing, increasingly-demanding world of work, and to improve their employability. An individual's employability depends on several factors. It involves self belief and an ability to secure and retain employment. It also means being able to improve his or her productivity and income-earning prospects. This often requires competing effectively in the job market and being able to move between occupations if necessary. It requires 'learning to learn' for new job opportunities in an advanced knowledge, communications and technological society. A critical issue for post-compulsory education and training providers is how best to achieve a smooth transition from school to work and at the same time enhance people's basic employability.

Earlier in the Report, Kirby contextualises this approach to employability by emphasising the shift to a knowledge-based economy, marked by 'intangible inputs dependent upon employee knowledge and skills, such as creativity, design proficiency, customer relations and goodwill, and innovative marketing' (p. 33), drawing on Gore (2000). These 'intangible inputs' are elusive - but, increasingly, so is the employment through which they are apparent.

Kirby goes on to discuss the 'precarious' nature of work: 'a feature of both low performance and high performance workplaces' (p. 34) due to fundamental changes in the nature of work. Traditional jobs have disappeared and people entering the job market need to have different attributes. Jobs increasingly are requiring skills that previously were not so important for most workers. Participation in education at all levels has widened considerably. People who previously would have gone straight into the workforce from school are now expected to develop and demonstrate this broader range of skills. There is

also an increasing tendency for graduates to take jobs outside of their field of study.

In this climate, it has become common for surveys of employers to produce lists of desirable characteristics for employees thus identifying what is needed for greater 'employability'. However, the goal-posts of employability keep shifting as categories of employment rise and subside. As the Productivity Commission research report makes clear (Murrough & Waite 2000), data on who is working 'non-traditionally' is murky, so lists of deficiencies in employability should be regarded warily.

One prominent list of desirable skills (and their deficiency) is the DETYA-funded report, *Employer Satisfaction with Graduate Skills* (2000). It is worth noting that 'the overall performance of new graduates employed appears to be reasonable, neither particularly low or high...[but] a large proportion of applicants for positions are considered unsuitable, even for other positions within the organisation' (p. vii). The Report takes into account the relative importance of the skills required to the employers themselves and concludes that the greatest skill deficiencies among new graduates were perceived to be in the areas of 'creativity and flair', 'oral business communications' and 'problem-solving'. Unsuccessful applicants also lacked these skills but in addition they were perceived to lack the '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 skill, and can find it but it is *rare*' (p. viii).

What is curious here is the seemingly confident assertion that these social and cognitive capabilities are skills easily measured in a job interview, or from a job application, rather than being dispositions of character, developed in response to a variety of circumstances and the challenges of life. Creativity, for example, requires considerable confidence, breadth of knowledge and technique and, even, a relaxed frame of mind. Where employers can find this 'skill', it is presumably on the basis of inference from other areas of an applicant's life. Yet it is presented as a 'deficiency' of the applicant when the inference made by employers is not strongly supported, by them, on the evidence. In the case of 'independent and critical thinking', it is a sufficiently weak inference to cost the applicant the job.

In lists like this, 'skilltalk' has reached the outer limits of credibility, because such talk assumes a unitary bundling of human capacities, publicly evident in performance indicators, devoid of contextual significance. Yet talk of skill deficiencies in the context of 'high performance' and increasingly 'precarious' employment masks the real and legitimate interest employers have in graduates: the capacity to be grafted onto the culture of their organisation, and to transform it productively. This requires 'insider' experience, and the heightened capacity to 'read' that culture.

Assuming that employers' perceptions of what they need and what they get have some basis, an important task is to unpack what they are really saying and put it into an educational framework. "What do universities need to do so that employers will be satisfied with their graduates?" "What works and what doesn't, and why?" A more sophisticated account of graduate capabilities is needed. We turn to this shortly when we examine the 'relational' aspect of generic capabilities.

None of this is to voice any disagreement with Kirby's claims that there are vulnerable groups in the labour market, and in the community generally. Kirby urges 'placing an emphasis on both general academic education and the development of portable skills on the one hand, and on occupationally-oriented training on the other'. We suggest that 'the development of portable skills' is perhaps a naïve way of thinking about how to improve the employability of graduates. In its place, the broader notion of context-specific capacities, which can be advanced through university studies, is worth investigating.

2.2 Economic and technological reasons for the adoption of generic skills

The economic considerations that have drawn attention to generic skills stem largely from the observation that the nature of work has both changed and continues to change, particularly with the continuing spread of microelectronic technology. As well, there is a shift to a service economy where information and social skills are increasingly important. These changes are so fundamental that workers now require different sorts of attributes. Proficiency in the broad range of generic skills is the main basic equipment of the new worker. Even where the term "knowledge worker" is used, suggesting that the new workplace involves continuous knowledge creation, generic skills are the core contributors to these work activities. In fact, for most people it is more a

matter of locating, managing and disseminating knowledge, rather than creating it. Rapid changes in the nature of work are also leading to the concept of a 'portfolio career' and a growing interest in lifelong learning.

These rapid and accelerating changes have placed pressure on the front-end approach to vocational and professional education. This is reflected, for instance, in growing dissatisfaction with courses for professions (Hager 1996). More and more, a formal two, three or four year course at the start of a career whether in the vocational or higher education sector, is seen merely as the necessary foundation for the early years of practice, rather than as the sufficient basis for a lifetime of practice. Hence the increasing interest in lifelong learning and the increasing emphasis on learning in the workplace. The attributes that are commonly taken to characterise lifelong learning (e.g. Candy, Crebert & O'Leary 1994) are heavily reliant on a range of generic skills. Linked to this is the emerging notion of the learning organisation, where the nature and range of generic skills of staff are regarded as the most important factor of production.

2.3 Reasons for adoption of generic skills by educational providers

At the same time as business and employers are calling for more emphasis on generic skills, so too are educational providers. While this interest is stimulated partly by a desire to appeal to business and employers in an era of increasing competition and accountability, these are not the only relevant factors. There is increased awareness that well-founded sets of generic skills have the potential to deliver several educational advantages to course providers whether vocational and/or educational in emphasis. These advantages can be grouped as follows:

- course development
- course delivery and assessment
- quality assurance.

In the area of course development the advantages offered by a sound set of generic skills are multiple. They add a further dimension to discipline-specific discourse by providing the basis for a consistent terminology for describing course outcomes. The common lack of such consistency, particularly in the higher education sector, means there is no agreed reference point when, for example, staff attempt to develop transdisciplinary courses. So, the terminology of the generic skills that are

required by contemporary work practices not only facilitates links between particular courses and the world of practice, but also creates links between courses of different kinds. These sorts of links are vital, for instance, in incorporating work-based learning in higher education courses. This integration of theory and workplace learning in the vocational sector is less problematic due to different pedagogic traditions.

Generic skills are, typically, significant components of initiatives to improve teaching and learning (see, e.g., Moy 1999, pp. 23-24). Such initiatives take many forms and have diverse aims. But whether they seek to encourage deeper learning, to make learners more reflective about their learning or to develop more self-directed learners, they characteristically require learners to deploy some combination of generic skills if they are to be successful. A good example is the recent interest in how courses can foster lifelong learning capacities. A set of generic skills is fundamental to enhancing such learning (Candy, Crebert & O'Leary 1994). A common theme for teaching and learning of generic skills is that success depends crucially on them being made explicit for students. Leaving them implicit, as they are in many traditional courses, does little to encourage learning and development.

Generic skills can also play a significant role in quality assurance measures that are suitable for use in higher education. For example, having a consistent terminology for describing course outcomes can improve course development across an institution. It can also improve communication to those outside of the institution. Likewise, higher education institutions could use well-grounded sets of generic skills to facilitate recognition and accreditation of prior learning, e.g. of non-graduate students into post-graduate programs. Such a procedure could generate greater public confidence in the assessment decisions that are made by educators.

3. BENEFITS OF A FOCUS ON GENERIC SKILLS: BETTER LEARNING AND EMPLOYABILITY

Some writers (e.g. Bennett, Dunne & Carre 1999; Barnett, 1997) have taken issue with the assertion that universities should do what business says it needs merely on the assumption that the outcomes will be beneficial, however, there are sound educational arguments for focusing on generic skills.

3.1 Generic Skills and Better Learning

It seems that the strategies needed to develop generic skills are also the ones that lead to good learning outcomes. Thus, by embedding the development of generic skills in courses we can improve learning overall. The emphasis here is on how people learn best rather than on generic skills themselves. Erik de Corte (1996) has a useful set of features of powerful learning environments.

They:

- *have 'a good balance between discovery learning and personal exploration, on the one hand, and systematic instruction and guidance, on the other';*
- *require students to 'progressively increase' their 'share of self-regulation...at the expense of external regulation';*
- *'provide opportunities to use a rich array of resources' and for 'social interaction and collaboration';*
- *'allow for the flexible adaptation of the instructional support to accommodate individual differences and stages of learning';*
- *'facilitate the acquisition of general learning and thinking skills' throughout the curriculum. (pp. 123-124).*

Research on generic skills teaching and learning methods indicates that they are best developed by active approaches (Moy 1999). Thus, there is a strong and recurrent link between the development of generic skills by learners and teaching and learning methods that exhibit such features as:

- adult learning principles
- holistic approaches to learning
- problem-based learning
- lifelong learning skills
- learning how, why and exploring what if ... , not just learning received facts
- learner reflection, evaluation and articulation on learning experiences as a critical aspect of the learning process
- active, learner-centred approaches in which integrated thinking and action occurs on tasks that are relevant and meaningful to learners
- the teacher assuming multiple roles, such as mentor, coach, facilitator, evaluator, that include demonstrating/modelling the generic skills to learners.

But as de Corte's list suggests, these are precisely the features of powerful learning environments.

3.2 The Holism of Generic Skills

While it is useful in developing our understanding of generic skills to consider them individually, in practice they overlap and interweave like the threads in a carpet. So, for example, you don't need to go far into a consideration of teamwork before communication becomes an issue. Likewise, to use a workplace example, answering the telephone effectively in a business situation may be good customer relations, but it can also involve simultaneously communication, gathering of information, analytical reasoning, and problem solving, all of a high order. Research shows very clearly that in workplace situations of all kinds of generic skills cluster (Moy 1999, Hager 1997).

So, universities that identify graduate generic skills need to avoid the danger of treating them as a simple mechanistic list of separate traits. A familiar analogy will help to illustrate the problem. Think of the capability of driving a motor car. A simple analysis might break this activity into (say) 80 discrete components, e.g. start engine, release hand brake, turn steering wheel through ninety degrees, know meanings of road markings, exercise care when reversing, etc. The discrete components represent a mix of knowledge, skills and dispositions (attitudes and values), ie. a mix of attributes. However, not much thought is required to see that someone might be capable of demonstrating each of these discrete attributes yet still be an incompetent driver. Driving is a holistic activity which depends mainly on a capacity to bring together the various 'discrete' attributes in an appropriate way determined by changes in conditions and contexts. The real skill in driving is in putting together the attributes in changing combinations. This principle is general. In particular, professional practice is holistic in this way. So, for example, a professional identifying a problem and developing a solution might be simultaneously communicating with a client, reasoning analytically, and acting as a mentor.

While it is useful for many purposes to distinguish the various generic skills or attributes, their integration in real life practice should never be overlooked. This has important implications in, e.g. assessment of generic skills. The Australian Council for Educational Research (ACER) has developed *Graduate Skills Assessment Tests* that measure isolated skills or traits. It may be that scores on a series of traits say little about a

graduate's higher level capacity to integrate generic skills together with other attributes to frame an appropriate response to a given contextual situation.

This holism of generic skills and the requisite capacity to deploy them seamlessly in appropriate ways in changing conditions and contexts, means that in a significant sense one's generic skills capacity is a reflection of the kind of person that one is. Thus, having well-developed generic skills may have the effect of improving self esteem and self-confidence. In other words, graduates may be more likely to see themselves as competent people and be perceived as competent by others (including prospective employers). For example, Brennan *et al.* (1993, p. 144) cited evidence 'of a demand amongst graduates themselves for a greater emphasis on a broader general education in those skills areas which can be seen to make for a "competent person".' Barnett (1994) has written about moving from academic competence to operational competence. Development of generic skills (or practice knowledge) while a student may thus be important for job selection and initial work.

3.3 The Contextuality of Generic Skills

Generic skills and the ways that they cluster are strongly shaped by the particular features of the context in which work is carried out (Hager 1997, pp. 13-15). The influence of the context is such that it is unhelpful to identify the generic skills of an occupation or profession. The relative importance of these generic skills and the ways that they cluster will very much change with the workplace context. The notion of 'context' is itself complex and includes a multiplicity of workplace-related factors such as:

- The specific history of a workplace or company
- Its particular culture and norms
- Its institutions and practices, e.g. work organisation, career structure
- Its economic and social environment
- Its strategic needs
- Its deployment of technology
- The extent and intensity of change to which it is subject.

Further support for the inherent contextuality of competence in general, and of generic skills in particular, comes from the increasing prominence of the "new workplace". Here the focus shifts from

the competencies of individuals to organisational capacity, that is, the combined assets of the organisation's staff and resources. So the new workplace is marked by generic skills that go beyond the technical, such as 'teamwork', 'innovation', 'taking responsibility', 'planning', 'solving problems', 'communicating effectively' and 'creating new knowledge'. These softer skills are required to be deployed in combinations that meet the demands of unique and continually changing work contexts. As such they demand on-going learning by workers that are adaptable, multi-skilled and flexible in the face of evolving circumstances. While traditional training to specified outcomes is well-suited to the imparting of technical skills, these softer skills appear to require continuing learning in novel work contexts.

Although there is a strong temptation to think about an individual's generic skills in isolation, employers are really interested in the capacity to deploy them successfully in a particular workplace. Organisations such as ANSTO that are seeking to foster a strong learning environment for employees implement their own internal learning and cultural programs for this purpose. In the information technology industry, Hewlett-Packard Australia, for example, hire graduates from a range of disciplines, apart from computer science, and try to select those that are 'flexible', 'adaptive' and capable of 'learning on the job' because of the need to develop such contextual attributes as 'business savvy' and 'customer focus'. This firm is committed to lifelong learning and has identified its values which are used to determine the 'cultural fit' of employees.

People are such that we should not be surprised to find that they fit into some workplaces better than others. This is borne out by the familiar example of undergraduates who undertake a series of work placements. Typically, students do very well in some workplaces (even being offered a job), but not so well in others. The suggestion is that this is because, in part at least, their generic skills and their capacity to tailor them to particular contexts suits some workplaces more than others. In short, they are more adept at responding to some workplaces than to others. Once again, these kinds of considerations cast strong doubts on the worth of context-free generic skills profiles that treat the generic skills singly.

This marked contextuality of generic skills provides another argument for the educational value of developing them. They provide the means for learners to gain types of knowledge and

learning not otherwise readily available to them, ie types of professional knowledge often overlooked in professional education courses. Eraut (1994), for example, argues that professional education typically can be mapped as providing specified disciplinary knowledge and related technical skills, but that there is another realm of knowledge and skills required for practice as a professional that lies outside the standard syllabus. This practice knowledge (communication, dealing with people, etc.) typically is seen as implicit knowledge - something you have naturally or not, or something you pick up along the way - and not normally spelled out. The argument can be made that such practice knowledge can be equated to some extent with the graduate attributes that people talk about. To the extent that higher education is a preparation for professional work for many graduates, the development of 'practice' knowledge should be as much an explicit part of the curriculum as disciplinary knowledge. This is not to overlook the broader purposes of higher education such as preparation for active citizenship.

While we might want to say that university graduates develop a range of generic skills of more significance is their capacity to deploy suitable combinations of these attributes to deal with the particular professional situations in which they find themselves. In these circumstances, a series of scores on individual skills may mean very little in relation to performance in real workplaces and only serve to confuse thinking in this important area of educational debate. The term 'capability' may be useful as an overarching concept to reflect the clustering of attributes and skills. The various combinations of attributes and skills that a graduate deploys in a series of different situations can be called capabilities.

The contextuality of generic skills means it is important to have only a relatively small number of general generic skills proposed as graduate outcomes. It seems that different professions and occupations have somewhat different generic skills profiles, particularly when they are practiced in many different sorts of contexts. Thus, the more the generic skills are detailed and distinguished, the less likely it is that a proposed general profile will be suited to every university program. Hence an appropriate level of generality is needed. This also means that if a general profile is to be widely used by faculties and/or programs, e.g. in developing a work-based learning degree, there is a need to contextualise the generic skills to the particular profession or discipline area.

3.4 Relationship of Generic Skills to Lifelong Learning

The above considerations suggest one way of thinking about lifelong learning. From the early years of schooling and before, learners can be expected to be in situations in which they would be acquiring some basic proficiency in deploying at least some common generic skills, e.g. using household microelectronic technology. One outcome of a sound education would be a growing capacity to deploy successfully generic skills in an increasingly diverse range of situations and contexts. This suggests that the development of generic skills should become gradually more integrated and holistic as young people move through schooling. The idea is that sound performance in very many of life's situations centres on successful deployment of suitable combinations of generic skills. Such a staged development of generic skills would facilitate students' transition to vocational training, higher education, work and other post-school activities.

In the vocational sector the recent agenda to embed generic skills in the training packages is an attempt to achieve a balance between the capacity for lifelong learning in the longer term and employability in the short term. The greater articulation between TAFE and university courses and more clearly delineated curriculum pathways are, of course, an identifiable form of lifelong learning.

The development of graduate attributes by universities is closely linked to their role in fostering graduates with a capacity for lifelong learning. Various graduate attributes have been recognised as important for lifelong learning (see, e.g., Candy, Crebert & O'Leary 1994). Developments at the University of Otago provide an example of the close links between these two notions. Viewing lifelong learning as an element of 'graduateness', a concept elaborated by the English Higher Education Quality Council (HEQC 1996), the university has instituted an iterative process in which links are strengthened in its courses between the fostering of desirable attributes and the deployment of innovative teaching and instructional design strategies. Part of this iterative process is the obtaining of on-going feedback from both employers and recent graduates on the generic skills required of graduates.

It is also crucial that generic skills should be thought of more broadly than in terms of just

university and work. These skills represent a basis for lifelong learning in all kinds of life situations. Rather than being viewed as discrete skills that people learn to transfer, generic skills should be seen as learnt capacities to handle an increasing variety of diverse situations. Thus transfer becomes more a growth in confidence and adaptability as learners experience ever more success in their deployment of generic skills in a range of situations. To put it another way, perhaps it is not so much generic skills that transfer, as growing understanding of how to deal with different contexts. In this way, non-work experiences can benefit workplace performance and vice versa.

3.5 The Current Status of Generic Skills in Higher Education

In Australia various federal government policy initiatives have steered universities to pay attention to generic skills. An early example is the generic skills subscale in the *Course Experience Questionnaire* (CEQ). This means that the perceptions of new graduates about the development of generic skills in courses are routinely reported. Likewise, there are growing requirements to list graduate attributes in reporting mechanisms, e.g. in quality assurance and improvement plans in the annual profiles exercise, and the emphasis on teaching for specified attributes in the 'fitness for purpose' benchmark. The ACER *Graduate Skills Assessment Tests* mentioned earlier is another example. The result is that virtually all Australian universities have developed statements of graduate attributes. These statements have significant commonality but also a diversity which reflects in part the varying philosophies and traditions of different institutions. Some of these statements of graduate attributes are so wide ranging that they are probably over-ambitious (e.g. Clanchy & Ballard 1995). These kinds of criticisms reflect a common top down approach to deriving the statements rather than one based on an examination of what actually happens in various courses.

Some universities have taken up the explicit development of 'broader critical and generic skills'. One example is provided by the five universities which make up the Australian Technology Network (RMIT University, QUT, UTS, UNISA, CUT). In tracing the evolution of this concept, the ATN Teaching and Learning Committee (Bowden et al. 2000) note that in the 1980s and early 1990s, knowledge and generic skills were separate but important aspects of university studies, with the competency-based assessment debates influencing this separation.

Now, '[g]eneric attributes are seen to be inextricably linked with the learning of disciplinary content... in an explicit rather than implicit manner' (p. 2). The ATN project is mainly concerned with generic capabilities which are intended to transfer explicitly to the subsequent workplaces of graduates. In a high-performance but precarious labour market, employers want discipline-based, clinical and technical expertise. However,

[e]mployers know they are more likely to have difficulties with an employee because of poor employment-related skills rather than inadequate technical expertise. The skills they value typically involve capabilities universities have also determined are desirable in graduates, e.g. communication ability, problem-solving, capacity to work with others, and managing oneself (p. 4).

This Karpin-like (Karpin Report (1995)) list of skills or capabilities can be explicitly addressed when they are embedded in the context of discipline- or field-based studies. Accountancy and Gender Studies, for example, will vary in criteria for skilful performance of communication ability, and assessment in this will likewise be divergent.

What is especially innovative in the ATN approach is the articulation of qualitative differences in the attainment of a generic capability. Instead of 'check-listing' a student's involvement in team-work, for example, it is more sophisticated, and closer to real work life, to strive for a 'relational' level of capability. Here, the (generic) ability to relate an instance of team-work, or an appropriate type of communication, to a specific context of work is important. Would-be lawyers, for example, should be able to distinguish between the context where legal precision and logical argument is required (say in a courtroom) and contexts where empathy is required (say with clients). Would-be nurses could advance their professionalism and their grasp of generic (but discipline-expressed) communicability by simulating the style required when briefing a discharged patient on their home medication tasks, compared to a more empathetic pre-operative style (these examples are drawn from ATN p. 14).

3.6 The Potential for Closing the 'Employability' Gap

Generic attributes have always made the difference between good and bad, or good and better employees. Currently educational institutions are seeking to assist students to maximise these

attributes. A first step is to understand how to reflect the influence of context, the benefits of transferability and overall capability in course design. The ATN group have chosen to focus on 'knowledge capability' - the ability to deal with each new situation, by relating what is known to the new unknown, determining what to do about it, and then doing it. Clearly most of the usual lists of generic attributes fit with this 'relational' approach. Drawing on Bowden (1999), the ATN group lists the following example of 'graduate attributes' (pp. 16-17):

Graduates will have

- *a commitment to learning from every new situation they encounter and the ability to fulfil that commitment*
- *the capability to make context-sensitive judgements in the areas of communication, team-work, creativity, critical analysis, professional and personal responsibility, leadership, information literacy, IT literacy, international orientation and environmental awareness, among others. This capability involves the judgement to choose appropriate behaviour in varying professional and social contexts*
- *a knowledge capability which enables them to deal effectively with each new situation in their professional or social lives.*

The deliberate design of learning and teaching strategies to advance these sorts of relational generic attributes is arguably just as significant in university life as is the deliberate design of the substantive discipline- or field-based studies which are the core of the graduate's clinical or technical or professional practice. Such strategies should be embedded in the substantive course which leads to the very practice of the capabilities as these find expression through employment. In this way, the 'employability gap' could be closed without compromising the integrity of substantive university studies.

There are, of course, many other examples of generic skills initiatives undertaken by universities. They are very varied in their scope and purpose. Thus, it would be helpful for understanding these various initiatives to locate them in a suitable classification framework. The next section develops such a framework based on learning considerations.

Within the vocational sector the recently commissioned BCA/ACCI survey of small, medium and large employers has sought to identify the

generic skills which they see as critical to ensuring employability in Australian workplaces. When released this will provide further insights into employer perceptions which may guide the parallel development of an employability skills framework.

4. TOWARDS A LEARNING FRAMEWORK FOR GENERIC SKILLS

The focus on generic skills by employers may be a recent phenomenon, however, in institutional terms generic skills have always been inherent to good educational practice. Indeed what makes generic skills valuable to a student is not only whether they translate to a workplace (often some time in the future), but whether they relate to the next level of learning they undertake often quite immediately. Generic skills are relevant throughout life and are frequently used implicitly, if not explicitly, to distinguish between potential students at different stages in their learning pathways.

In response to employer concerns expressed at a political level about perceived skill shortages in the 'basics', various forms of testing to do with generic skills now exist in the school and higher education sectors. National testing instruments identify student achievement in the basic or foundation generic skills, 'literacy' and 'numeracy' in the early years of schooling. More recently, the *ACER Graduate Skills Assessment Tests* referred to above have been developed for the higher education sector.

The value of such tests in either sector to necessarily capture the holistic nature of the learning involved in acquiring and enhancing generic skills is very much open to question. This is particularly the case in, for example, the use of multiple choice test formats to test generic skills such as the capacity for teamwork. The assumption is that testing understanding of propositions about teamwork will indicate capacity to perform in a team. The assumed model here is that understandings and skills are discrete, both conceptually and practically. It is claimed that the right understandings are a necessary but not a sufficient condition of being a good (skilled) team player. However such dualistic models are highly contested by the more holistic understandings that have become characteristic of the various disciplines, including psychology, that seek to understand human performance.

Despite the increasing specialisation of knowledge which is discipline-based, generic skills have not lost their importance in contributing to

knowledge creation. Indeed the convergence of technology amongst other things has generated new forms of interdisciplinarity.

From the perspective of learners in higher education there are three milestones where generic skills, specifically the lack thereof, impact on their capacity to progress to further study and/or employment. First, the commencement of undergraduate study, second, at completion of undergraduate study, and third, at completion of postgraduate study, particularly in the case of doctoral study. There is not necessarily a straight linear relationship between these stages in terms of the development of generic skills. Rather the process of the acquisition of generic skills would appear to be merely part of the overall learning process which is idiosyncratic, generally invisible and often intuitive. It may look more like a spiral or a scaffold if mapped as each new insight, understanding or skill-based development is built on earlier ones through stimulus, practice and reflection. Leaving aside a detailed analysis of learning theory and cognitive development about which there is much debate as technological developments provide new information about brain function, it is clear that among academics there is most agreement about generic skills and what is required for success at the first milestone: entrance to tertiary level study. At the second and third milestones, the picture is more complex because of the range of discipline studies, different forms of professional preparation and the varying length of undergraduate courses.

4.1 Generic Skills for Entrance to University

Traditionally, entrance to university has been a competitive process based on academic achievement tested via public examination after five or six years of secondary schooling. There has been a tacit understanding of the depth of knowledge required for study in particular disciplines (which is the basis for the use of pre-requisites) and the generic skills which are critical for tertiary level study. This paradigm is, of course, still dominant, however, the increasing diversity of applicants for undergraduate courses has led to a more careful analysis and explication of just what underpinning knowledge and skills are actually required. Furthermore, primary and secondary schooling contribute significantly to generic skills development. Indeed it could be argued that the younger years are crucial for developing the base for these skills. This is particularly the case for skills requiring a strong foundation such as 'literacy

and numeracy'. If they are not learnt early then it is more difficult to do so later.

The response by universities has been to introduce a range of programs variously called 'foundation', 'orientation' or 'preparation' programs which are specifically designed to provide a bridge to university for students who for various reasons - incomplete school education, mature age and/or VET-based entry, international status - do not have the full complement of skills deemed necessary for tertiary study. In addition, English Language skills which are frequently a specific issue in respect to International students, are provided for through ESL and ELICOS type programs. The 'foundation' type programs commonly include components relating to 'study skills' or 'academic preparation' which covers use of library sources and information technology as well as adult learning styles and expectations of undergraduate learners. Apart from these skill areas most such programs focus on more foundational generic skills, 'communicating' (sometimes reduced to academic forms of writing), 'numeracy - using mathematics', and 'information literacy'. They may also include components which address other skill areas seen as important for academic study such as 'critical thinking' and/or 'interpersonal' skills like 'working in teams'. In addition, some programs include opportunities for students to begin to take responsibility for managing their (future) careers by including components like 'developing a portfolio'. As the employment opportunities for graduates become more competitive and the nature of professional work keeps changing, these skill areas are likely to assume greater importance.

Entrance to these programs is usually by direct means as an alternative to the competitive examinations. Increasingly the nature of these 'foundation' type programs is outcome-based with assessment against clear criteria to ensure students develop an appropriate repertoire of knowledge and skills. At Edith Cowan University, for example, all earlier versions of alternative entry pathways, not all of which had these characteristics, were discontinued from 2001 in favour of a university preparation program which is modular and skills-based to allow for flexibility to meet the needs of the diverse range of students requiring this bridge.

The Mayer Committee (1992a, 1992b) in the previous decade used case studies and wide ranging consultative processes to attempt to identify the "Key Competencies" which school

leavers need to acquire for success post-school - either in further study or employment. Some work has been undertaken in the school sector, following the Mayer reports, to embed these competencies in the curriculum but there is no clear mandate to do so. Furthermore, given the State responsibility for school education, significant differences remain in terms of subject range, emphasis and compulsory requirements for tertiary entrance so any notion of a 'national curriculum' remains at the framework level. In recent years the significant expansion of VET programs in secondary schools has again highlighted issues around the acquisition of specific competencies compared to those that are more generic. None the less there is broad agreement as to the depth of knowledge and the kinds of generic skills required for success at tertiary study.

The introduction of recognition of prior learning (RPL) processes is another response to the diversity of undergraduate students. Many students have undertaken other forms of post-school education and training either in the vocational education and training sector or through professional associations apart from learning 'on the job' at work. While universities generally have systems for granting exemptions and credit transfer, this is not always systematic or inclusive in practice. Rather than attempting to insist on narrow interpretations of the level of specific knowledge the trend is towards the granting of 'block' credit by making a holistic assessment of a student's academic background, work and professional experience. In this way the emergence of RPL as a legitimate means of judging student potential for success at undergraduate level has resulted in an even greater focus on generic skills at undergraduate level.

4.2 Graduate Attributes at Completion of Undergraduate Study

Universities have always had a commitment to ensure graduates develop broad based, generic skills such as 'critical thinking', 'problem solving', 'analytic capacity' and so forth. Indeed the original notion of a university was generic rather than specialist, broad rather than narrow in focus. Being precise about the level and concrete manifestation of the skills is more problematic. Consequently the development of undergraduate programs which concurrently and explicitly develop generic attributes as well as discipline-based knowledge and skills is a challenge in design and pedagogic terms. It is a challenge which most universities are now addressing. However, developing a statement of graduate attributes is the

easy part. Ensuring that the curriculum, teaching and assessment in the university does indeed promote development of the attributes is a much larger undertaking. An important question is whether to promote the development of generic skills within or across disciplines.

The experience at the University of Luton highlights some of the main issues (Atlay & Harris 2000). These include:

- the need to translate and contextualise the meanings of the attributes into the languages of the diverse subject and discipline areas
- whether all courses can realistically develop all of the attributes to the same level
- the degree of detail that is useful in specifying the attributes within subject/module descriptions (It seems better to limit subjects/modules to specified attributes that are assessed and reported upon, rather than attempting to be more comprehensive.)
- problems with tracking generic attributes development across diverse elective choices available to students in some courses
- assessment and transcripting arrangements for generic attributes
- maintenance of standards across faculties/departments.

In Australia, there are a range of approaches being deployed by universities. The University of South Australia is widely acknowledged as having led the way in having systematically incorporated generic attributes into all of its courses. The University of Wollongong and Deakin University are also well-advanced in this approach. Edith Cowan University is currently undertaking a process of embedding its set of graduate attributes into all of its courses with faculties responsible for interpreting and defining the attributes within specific course or scholarship areas.

What is the role of employers in these university-wide initiatives? In most cases this work has not been done in isolation from employers. Indeed employer perceptions have frequently been taken into account in framing the particular sets of graduate attributes. For example, RMIT has identified a number of key attributes, in each case accompanied by employers' interpretation of them and a specification of the teaching and learning experiences that can facilitate their development. (See URL: [http://cea.curtin.edu.au/ATN/rmit bus log table.html](http://cea.curtin.edu.au/ATN/rmit_bus_log_table.html))

Apart from university-wide initiatives, there is also much work occurring at faculty level. For example, at the Queensland University of Technology, the Faculty of Education developed its own Faculty-specific graduate attributes which it calls Teacher Practitioner Attributes (TPAs) (for full details see <www.fed.qut.edu.au/tpa/>). These are derived both from the QUT generic attributes and teaching industry standards. Processes were developed for identifying and fostering TPAs within course units, together with a series of exemplars to enhance this process. As well a profile of TPA development in sequences of core units has been devised. Other significant aspects of this initiative include major student involvement, which appears to have benefitted the initiative considerably. This contrasts with a common assumption in this field that employers and university authorities know what is best for students. As well, it is recognised that the process of incorporating graduate attributes into the Faculty's courses is an on-going, dynamic one, and that considerable staff development is needed to make the initiative work.

The new Master of Teaching program at the University of Sydney, founded on the notion of problem-based learning, has attracted a high proportion of mature aged students. This has resulted in more attention being paid to the generic skills profile of commencing students with recognition being given to prior life and work experiences and adjustments made to the nature of the practicum via internships.

Another example of a Faculty initiative involves the Faculty of Engineering at the University of Technology, Sydney. They asked the question – "What education do we believe future engineers need?" In response to the question the Faculty concluded that for engineers three types of attributes are important – professional, personal and academic. Accordingly, these were explicated further and used as the basis for the design of a new program.

As the above Faculty graduate attributes initiatives suggest, success will depend in part on having fruitful links with suitable workplaces. The increasing importance of links between universities and professions/employers/industry and commerce in preparing graduates for professional careers has led to a range of curriculum initiatives – sandwich programs, work placements, co-operative programs, practicum placements, internships – that could be described as 'work-based learning'. The purpose of such

programs is to give undergraduates an opportunity to link their theoretical knowledge to professional practice as well as gain an appreciation of the contextual issues which impact on professional work. Aspects of such learning opportunities are specific to the particular profession in terms of the requisite theoretical knowledge but there are also more generic elements such as ‘making value judgements’, ‘exhibiting ethical behaviour’ and ‘using technology’. At their best, such programs impact on university staff to inspire novel teaching approaches that stimulate and model experience, and also stimulate more authentic assessment practices. As with RPL, the emergence and proliferation of ‘work-based learning’ initiatives is further evidence of the strong commitment of universities to ensuring graduates have an appropriate set of attributes, including generic capabilities.

4.3 Graduate Attributes at Completion of Postgraduate Study

While many of the issues here overlap with those outlined in the previous section, postgraduate study raises its own set of issues as well. Some generic skills are particularly pertinent at postgraduate level. ‘Independent and critical thinking’, for example, is vital in doctoral studies and is not necessarily a strong feature of some undergraduate programs. The emergence of professional doctorates can be seen as reflecting the closer connections between universities and professional practice. But this has also generated a debate about the similarities and differences between professional doctorates and the traditional doctor of philosophy degree (see, e.g., Brennan 1995, Brennan 1998, Holland & Brown 2000, Lee, Green & Brennan 2000). In turn these issues are enmeshed in discussions about changing modes of postgraduate pedagogy and supervision. While it is too early to predict the eventual outcomes of these developments, they seem certain to decisively reshape current understandings of postgraduate attributes.

5. CONCLUSION

Generic skills and graduate attributes have emerged as vital issues for both educational institutions and the communities that they serve, including students, employers and governments. This position paper has outlined reasons for the growing interest in this topic. It has located this interest in other related educational developments, and described a range of initiatives and practices that reflect the increasing

importance of generic skills and graduate attributes for higher education, for business, and for the community at large. It ends with some recommendations for further work on this topic.

6. RECOMMENDATIONS

It is recommended that further work be undertaken to investigate, document and disseminate:

- (1) best practice examples of universities linking their teaching and learning initiatives in respect of generic skills to strategic planning, and approaches to assessment and curriculum design, particularly the work done by the ATN
- (2) how employers recognize and value generic skills incorporating the findings from the BCA/ACCI survey
- (3) what graduates perceive are their generic skills and areas of deficiency exposed in employment
- (4) an appropriate learning framework for generic skills.

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