Generic Graduate Attributes: A Research Based Framework for a Shared Vision

S.C. BARRIE, P. JAIN & A. CAREW
University of Sydney, Sydney, Australia

Abstract: For many years universities around the world have sought to articulate the nature of the education they offer to their students and their contribution to society through a description of the generic qualities and skills their graduates possess. However, universities' endeavors to describe and foster the development of generic attributes of graduates are characterised by a plurality of views from and approaches, and, despite extensive funding in some quarters, have met with limited success. Recent research (Barrie 2002) that has revisited the rhetoric of institutional claims of 'generic graduate attributes' has shown that Australian university teachers charged with the responsibility of developing students' generic graduate attributes, do not share a common understanding of either the nature of these outcomes, or the teaching and learning processes that might facilitate the development of these outcomes. Instead academics hold qualitatively different conceptions of the phenomenon of graduate attributes. This paper considers how the qualitatively different conceptions of graduate attributes identified in this research have been applied to the challenge of revising a university's statement of graduate attributes. First we outline the key findings of the research. We then describe how the University's revision of its policy statement has built upon this research. In particular, we focus on the implications of the variation in the relationship between discipline knowledge and generic attributes. This was a key feature of the qualitative variation in understandings identified in the research. This issue is expanded upon by means of a detailed discussion of how one discipline, Engineering, has contextualised and interpreted the shared policy framework based on this research.

Introduction

Internationally, approaches to the teaching and learning of graduate attributes are hugely varied (Fallow & Steven, 2000) and, despite sometimes extensive support, have not always met with success when considered at an institutional or system-wide level. Many reasons have been proposed for this diversity:

(Graduate attributes initiatives in the United Kingdom) have had little impact so far, in part because of teachers' scepticism of the message, the messenger and its vocabulary and in part because the skills demanded lack clarity, consistency and a recognisable theoretical base. Any attempt to acquire enhanced understandings of practice through which to inform staff and course development initiatives thus requires the conceptualisation and development of models of generic skills (Bennett et al, 1999; 90.)

However, we have argued elsewhere (Barrie, 2003) that this reflects in part an underlying diversity in academics' understandings of the very nature of graduate attributes. Understanding the difference in opinion held by members of the different disciplinary
ii) Complementary Conceptions of Attributes

There is a second group of strategies that address graduate attributes as higher (university) level, additional generic outcomes that usefully complement or round out discipline knowledge. In these strategies, graduate attributes are understood to be functional, atomistic, personal skills that, while an important addition to disciplinary learning, are quite distinct from other university learning outcomes. They might be addressed by the inclusion of an additional unit (or units) of study in a course, an additional series of lectures or workshops within an existing unit, or through the inclusion of a particular learning task to address the development of these attributes. This additional graduate attributes curriculum is part of the usual course curriculum for all students. From the perspective of these strategies, graduate attributes do not interact with discipline knowledge and the attributes are essentially generic, although different attributes might be of varying importance in the context of different disciplines.

iii) Translating Conceptions of Attributes

Other strategies at the University address graduate attributes as important university learning outcomes that allow students to make use of and apply discipline knowledge. These strategies position graduate attributes as clusters of personal attributes, cognitive abilities and skills of application. While still separate to discipline knowledge, graduate attributes are no longer seen as independent of this knowledge. Instead, the graduate attributes interact with, and shape, discipline knowledge (for instance through the application of abstract or context specific discipline knowledge to the world of work and society), and are in turn shaped by this disciplinary knowledge. Because of the relationship between graduate attributes and knowledge in the different disciplines, these strategies attributes are differentiated by the discipline context. Rather than being generic, graduate attributes are specialised and differentiated forms of underlying generic abilities which are developed to meet the needs of a specific discipline or field of knowledge. Because of the intimate relation to discipline knowledge, these attributes are usually developed within the context of usual classes, either as part of the usual course content, through the usual teaching processes of that content or (from a student centred perspective) through the students’ engagement in the course.

iv) Enabling Conceptions of Attributes

Other strategies at the University address graduate attributes not as parallel learning outcomes to discipline knowledge, but as abilities that sit at very heart of discipline knowledge and learning. Rather than clusters of attributes, graduate attributes are understood as interwoven networks of these clusters. These interwoven attitudes and capabilities give graduates a particular perspective or world-view (i.e. a way of relating to the world, or to knowledge, or to themselves). In these strategies, graduate attributes provide the skeleton to discipline knowledge and are learnt as an integral part of that knowledge. They might be learnt in the context of discipline knowledge as an integral element of students’ experience of courses, or through students’ engagement in the broader experience of participation in the university community. From this perspective,
graduate attributes have the potential to outlast the knowledge and contexts in which they were originally acquired. Moreover they provide a framework for ongoing learning of new knowledge. As such the generic attributes transcend the disciplinary contexts in which they were originally acquired.

The different understandings identified in the research are hierarchical, with Enabling strategies subsuming and being supported by Translating strategies, which in turn are supported by Complementary and Precurator approaches.

As with most dimensions of human capability and knowledge, graduate attributes do not spring into being fully fledged. Such outcomes are more likely to be the result of a staged process of development and achievement with the increasingly complex outcomes benefiting from different strategies at different stages in the process of acquisition.

Policy statements listing graduate attributes might also reflect a layered or staged development of such attributes, particularly given the hierarchical nature of understandings of graduate attribute outcomes held by the academic community. For instance, while a policy may ultimately aim to specify graduate attributes in terms of Enabling approaches (incorporating outcomes of a particular type and the related processes by which these outcomes might be developed), it might also incorporate the specification of more discipline-based Translating approaches, as steps towards the achievement of the higher-level outcomes. Such a layered policy can also incorporate the specification of the Complementary and Precurator strategies as providing valuable non-discipline-based support for all students and specialised support for students who lack the basic entry level skills.

Using this perspective, it was possible for the University’s existing conglomerate list of different types of generic skills to be re-organised, rather than redeveloped from scratch and the role of the different types of initiatives already in place to be recognised. Inherent in such a hierarchical or layered policy statement of graduate attribute outcomes is the accommodation of the different relationships between discipline knowledge and generic attributes described in the four qualitatively different categories of description. In particular, it accommodates the significantly different relationship between disciplinary knowledge and graduate attributes, which is a feature of conceptions in the Translating and Enabling categories.

This research provides a framework for making sense of the diversity of graduate attribute initiatives in place at the University as well as a framework for the revision of the current policy statement of graduate attributes. The application of the research to the task of overall policy revision strategy is discussed elsewhere (Barrie in press).

In this paper we will focus in detail on the key issues of how the research framework provides a way for different disciplines to interpret graduate attributes in the context of discipline knowledge, while still highlighting how these disciplinary interpretations relate to the overall picture of the truly ‘generic’ outcomes of a university education.

Some Constraints on the Development of a Central University Policy

The aim was to develop a policy that would provide a degree of coherence across the University. This meant that the policy needed to be university-wide, relevant and achievable in each of the seventeen faculties of the University.

The research found academics’ understandings of graduate attributes to be connected with discipline knowledge in different ways. The nature of the perceived relationship between disciplinary knowledge and graduate attributes was indeed a key factor in academics’ conceptions of attributes, which was related to the approach towards the development of attributes that these academics adopted. Furthermore, high-level graduate attributes are most effectively developed in the context of discipline knowledge, embedded within disciplinary curricula rather than addressed by stand-alone strategies that are divorced from discipline content (Bowden et al 2000). So the possibility of effective implementation at a faculty level required that the University policy recognise and value the intimate connection between the development of attributes and the disciplinary context in which they are developed.

A further requirement was that the policy adopted by faculties be relevant to appropriate employer groups and external professional accrediting bodies. This requirement was particularly acute in the case of faculties offering ‘professional’ degrees, where a graduate would be required to demonstrate to employers that the ‘academic’ attributes they had developed were appropriate to those demanded by the profession.

These considerations suggested that any policy on graduate attributes adopted by a faculty would need to maintain a strong disciplinary focus, requiring that the statement of attributes be written in the language of the discipline. But this stood in tension with the requirement that the policy be university-wide, relevant across the many disciplines represented in the University.

A Research-Based Policy Framework

The review of the existing policy and the subsequent development of a new statement of graduate attributes reflected the hierarchical nature of graduate attributes and the staged development of high-level attributes. In line with the University’s mission the revised policy identifies three holistic overarching attributes as important outcomes of University education: Scholarship, Global Citizenship and Lifelong Learning. These are analogous to Enabling Conceptions of graduate attributes. These are defined as follows:

Scholarship: An attitude or stance towards knowledge

Graduates of the University will have a scholarly attitude to knowledge and understanding. As Scholars, the University’s graduates will be leaders in the production of new knowledge and understanding through inquiry, critique and synthesis. They will be able to apply their knowledge to solve consequential problems and communicate their knowledge confidently and effectively.
Global Citizenship: An attitude or stance towards the world

Graduates of the University will be Global Citizens, who will aspire to contribute to society in a full and meaningful way through their roles as members of local, national and global communities.

Lifelong Learning: An attitude or stance towards themselves

Graduates of the University will be Lifelong Learners committed to and capable of continuous learning and reflection for the purpose of furthering their understanding of the world and their place in it.

The policy recognises the development of these three overarching Enabling graduate attributes as being supported by the development of skills and abilities in five key clusters. These five clusters embody the Translation conception of graduate attributes as disciplinary clusters of personal attributes, cognitive abilities and skills of application.

1. Research and Inquiry: Graduates of the University will be able to create new knowledge and understanding through the process of research and inquiry.

2. Information Literacy: Graduates of the University will be able to use information effectively in a range of contexts.

3. Personal and Intellectual Autonomy: Graduates of the University will be able to work independently and sustainably, in a way that is informed by openness, curiosity and a desire to meet new challenges.

4. Ethical, Social and Professional Understanding: Graduates of the University will hold personal values and beliefs consistent with their role as responsible members of local, national, international and professional communities.

5. Communication: Graduates of the University will recognise and value communication as a tool for negotiating and creating new understanding, interacting with others, and furthering their own learning.

Importantly, the particular skills and abilities that comprise these five key clusters are likely to vary from discipline to discipline, and are often developed by students within a disciplinary context. In recognition of this fact, the University policy encourages the difficulties in creating a satisfactory set of graduate attributes for our Faculty. They interpretation of these five clusters by different disciplines. This gives each faculty the opportunity to realise discipline-specific attributes within the shared framework of a focus on design and engineering science, and the increasing need for our graduates to meet University policy. The faculty “interpretations” of the University policy identify broader professional skills; the need to maintain the engineering focus and attributes that are specific to their own disciplinary context, and as such are written in the context of language while allowing for breadth of interpretation and implementation; and creating the language of the discipline. This ensures that the attributes are relevant to students a “vision” of the ideal graduate which is justifiable and realistic in terms of our and meaningful to employer groups and external accrediting agencies. At the same educational resources. We discuss each of these in more detail below.

In recent decades, engineering education in Australia has stressed the need to ensure its graduates against being labelled ‘technicians’ by either focusing on excellence in design, or through heavy emphasis on engineering science and fundamentals. In the past few years, the industries that employ our graduates, IEAust, and the broader community have signalled a strong desire that our graduates develop much broader professional
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skills (IEAust, 1996; Mitchell et al., in press). The professional skills which are increasingly sought after are those embodied by the recently revised IEAust graduate attributes (IEAust, 1999). Consequently, these attributes formed a strong foundation for our synthesized list.

A second difficulty was the need to embed an engineering focus and language in our synthesized list while still allowing for different interpretations and approaches to teaching attributes. Early work in the curriculum mapping project had revealed that our Engineering academics considered some of the IEAust attributes less relevant in the context of their specific course or discipline, and that academics interpreted and taught the IEAust graduate attributes in different ways. This indicated to us that the synthesized attributes needed to accommodate variation in approaches to teaching and at the same time provide clear guidance about what the attributes might mean in an engineering context.

The Engineering undergraduate degree at the University of Sydney is a four year program which includes professional work experience and a substantial thesis project. Graduates from each of the four Departments consistently rate their degree programs as having a high workload (ITL, 2003a). This sense of being overloaded extends to many of the academics who teach undergraduate courses. These two factors underpin a third difficulty we faced in trying to synthesize a list of attributes for our graduates.

We needed to create a 'vision' of the ideal Engineering graduate which was justifiable and realistic in terms of the existing workload, the time available for (re-)constructing and delivering courses, the skills academic teachers might have in interpreting and embedding attributes, and our mosaic mandate to produce critically able, work-ready graduates with an environmental, sociopolitical and personal conscience. In light of the constraints our educational setting imposes, we view the synthesized list as a 'vision' which academics might be asked to develop through their teaching, and which students might be asked to progress towards.

In summary, the process of interpreting the University's central policy and synthesizing graduate attributes for the Engineering Faculty needed to feed on and cater to the needs of: our industry stakeholders, the professional body which accredits our courses, the University of Sydney, and the wider community. At the same time we needed to recognize some of the cultural tensions and institutional constraints which influence the engineering teaching environment, and to produce something workable in the eyes of our academics, and relevant in the eyes of our students.

Conclusion

This example of one faculty's interpretation of the shared policy framework has been repeated across all of the seventeen faculties of the University. Each faculty has interpreted the University's indicative statement of graduate attributes differently and in a way that reflects the unique disciplinary nature of the teaching and learning in these faculties. These contextualized statements of "Translation" level graduate attributes express the uniqueness of each disciplinary setting. However, the shared framework is also apparent in these statements and articulates to staff and students the commonality of the University experience. In particular the approach our University has adopted articulates how students' educational experiences in different faculties contribute to the development of the University's 'Enabling' graduate attributes of Scholarship, Global Citizenship and Lifelong Learning.

References


