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Report

**The national graduate attributes project:
integration and assessment of
graduate attributes in curriculum**

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**Project team members
Associate Professor Simon Barrie
Dr Clair Hughes
Dr Calvin Smith**

**Lead institution
The University of Sydney**

**Partner institutions
The University of Queensland
Griffith University**

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1. EXECUTIVE SUMMARY

The National Graduate Attributes Project (National GAP) explored why Australian universities have on the whole, been unable to achieve the sort of significant systematic changes to student learning experiences, required to achieve their stated aims of fostering graduate attributes. The National GAP was a scoping study rather than the more familiar ALTC development project. Its methodology therefore sought to foster and expand on the existing community of scholarly practice in relation to graduate attributes in order to inform and reinvigorate institutional curriculum renewal to achieve graduate attributes (GA).

Graduate attributes are an orienting statement of education outcomes used to inform curriculum design and the provision of learning experiences at a university (Barrie, 2009). They are descriptions of the core abilities and values a university community agrees all its graduates should develop as a result of successfully completing their university studies. While all Australian universities make such claims in policy, few can provide convincing evidence of curricula that comprehensively and systematically develop these abilities. This study builds on previous research (Barrie 2004; 2007) into the reasons why individual academics are unlikely to develop such curricula, by considering the nature of the institutional and systemic barriers and affordances, in which an academic's individual conceptions and understandings of graduate attributes are enacted.

Data

The project drew on published research, the experience and insights of a reference group of international experts, data from policy documents and publically available reports (Australian Universities Quality Agency http://www.auqa.edu.au/qualityaudit/universities/) from all 39 Australian universities, and interview data provided by 36 participating universities. Project participation was comprehensive — only two universities did not respond to the invitation to participate in the interviews and all universities have participated in one or more of the three phases of national symposia held to develop the GAP framework and establish the community of practice. In addition, in the third phase participation expanded to include a network of 20 Scottish universities.

Key findings

The project identified a GAP framework of eight interacting elements, which affect an institution's efforts to foster curriculum renewal to achieve graduate attributes. The importance of underlying conceptions already identified in previous research was acknowledged in the framework. The elements of the framework included:

1. Conceptions: the different understandings people have about the very nature of graduate attributes have been shown to influence how they write policy, design curriculum and approach the development of graduate attributes;

2. Stakeholders: various groups (e.g. policy makers, students, curriculum developers, marketers, professional associations, industry groups) have different stakes in the articulation and development of graduate attributes;

3. Implementation: the way a university coordinates and approaches the implementation of its graduate attributes policy is often neglected;

4. Curriculum: curriculum planning for graduate attributes development, general curriculum structure (e.g. modular, postgraduate entry) and pedagogical features (e.g. PBL, WIL) influence the development of graduate attributes;

5. Assessment: the explicit embedding of graduate attributes in assessment is essential for policy implementation;

6. Quality Assurance: the way a higher education system, university or discipline monitors and assures the development of graduate attributes is one of the most influential drivers of effective implementation;

7. Staff Development: the way a university enables and engages staff in efforts to foster graduate attributes contributes to implementation effectiveness; and

8. Student-Centred: no matter how much effort universities put into teaching graduate attributes, the strategy has not worked unless it is perceived by students to have actively engaged them in developing worthwhile attributes.

In fostering and developing a scholarly community, the project brought together 300 members of university communities over the course of the three rounds of symposia. The first of these focussed on assembling the key graduate attributes contacts, typically from teaching and learning or careers units to support the development for the framework. The second round of symposia focussed on connecting the members of 24 ALTC project teams — either those working on aspects of curriculum renewal relevant to graduate attributes or working on graduate attributes initiatives in different disciplines — to develop some common understandings, share ideas and forge collaborations. The final round of symposia brought together interested local networks in five states into a National GAP network and linked this network to a network of Scottish institutions, to share resources and developments as a precursor to developing new collaborations. Ninety such collaborative expressions of intent were generated at these events alone. The international network linkages continue to develop even though the GAP project is now completed. Student participation was a highlight of both the first and third symposia and served to focus conversations between and among students and academics and to suggest directions for further GA-related investigations and collaborations.

Resources

A key to fostering sustainable scholarly engagement in curriculum renewal to achieve graduate attributes within universities, and across the sector, is a strategy for developing a shared, complex understanding of the issues involved.

Such shared understandings are 'complex' in that they do not suggest a single correct view — rather a complexity of multiple perspectives that is the hallmark of a scholarly community. As a resource to support ongoing graduate attributes implementation, the project has developed a series of short, 2–3 page, 'issues papers' on each of the elements of the GAP framework. These papers outline some of the key considerations in relation to each of the eight elements of a university's efforts to renew curricula to achieve graduate attributes. The papers can be read as a set, or each read individually. Each issue paper is accompanied by reflective prompts and triggers for use by an individual reader or as a structured learning activity in organised events, e.g. curriculum planning meetings, discussion groups or graduate certificate courses. A key resource developed by the project is the community of individuals across Australia (and Scotland), who are more informed and engaged in collaborating in the task of curriculum renewal to achieve graduate attributes. It was apparent from the last round of symposia that the many members of this group have been active contributors to the recent debate on academic standards. Consequently, they are now ideally positioned to contribute to work in this area, as graduate attributes constitute statements of core discipline learning outcomes. During the final round of GAP symposia, participants developed over 90 proposals for future collaborative projects.

Publication and Dissemination

Project resources are now readily accessible to support further graduate attributes activity and to promote national and international collaborations. These include the GAP Issues papers which can be downloaded from the GAP website which also provides access to the 79 posters reporting on local GA initiatives which have been shared amongst the GA community in Australia and in Scotland. The PowerPoint slides from each of 19 publications, conference papers and international and national keynotes at which the project has been reported can also be downloaded from the site. Interested members of the university community can also join the GAP network and mailing list via the site.

2. PROJECT OUTCOMES
2.1.   Summary of Outcomes

The National Graduate Attributes Project (National GAP) focused on the reinvigoration of the graduate attributes implementation processes and debate within Australian universities, and the establishment of a network of discipline experts and strategic learning and teaching leaders with a shared scholarly basis from which to engage in curriculum renewal to foster graduate attributes. In achieving these outcomes the project developed the following resources to support practitioners within the Australian higher education sector in advancing debate and practice around graduate attributes including:

- A set of eight GAP Issues papers based on the analytical framework developed in the data collection phase of the project (see below and full GAP Issues Papers included as Appendix 2);

- Guidelines for using the eight issues papers as professional development and strategic planning and implementation resources;

- Extracts from a scan of current practice illustrating variation in relation to each of the eight GAP Issues (see pp. 18-28);

- A searchable database of university graduate attributes statements gathered during the data collection phase;

- A digital 'Good Practice' repository of posters representing the work of 79 teams of practitioners, leaders and researchers, and students from Australia, Scotland and Hong Kong;

- A digital repository of practical implementation ideas generated by interview respondents and by symposia participants;

- A digital resource of video presentations from the GAP symposia for use in future academic development and curriculum review activities;

- A National GAP website was established to facilitate access to project resources and to support the development of a national community of practice http://www.itl.usyd.edu.au/projects/nationalgap/introduction.htm.

These resources were collaboratively developed in the context of creating an engaged international network of graduate attributes expertise. In establishing this network the National GAP initiative:

- Brought together key people working in the graduate attributes field as practitioners, researchers or institutional leaders in Australia and overseas;

- Facilitated the sharing of current and recent ALTC project work on graduate attributes;

- Provided opportunities and impetus for national and international collaborations;

- Connected different stakeholder groups with each other, in particular the project engaged students as active members of the international network; and

- Connected members of the GAP network with national debates and emerging priorities such as 'Assurance of Discipline Standards'.

The GAP framework forms the basis for the GAP Issues papers, which are one of the core resources developed by the project. The framework of eight elements provides a way in which university communities might structure their reflections on the systemic issues related to successfully implementing curriculum renewal to achieve graduate attributes. The eight elements are:

1. Conceptualisation;
2. Stakeholders;
3. Implementation;
4. Curriculum;
5. Assessment;
6. Quality Assurance;
7. Staff Development; and
8. Student-Centred.

The framework was developed on the basis of the research literature, institutional reports including policy statements and AUQA audit reports, interview data gathered from respondents in the 36 participating universities, and insights shared by Australian and international colleagues who took part in the symposia organised by this project. A set of eight 'GAP Issues papers' was developed providing an introduction to each of the key elements identified as being important for universities to consider when engaging in curriculum renewal to achieve graduate attributes.

Because universities have different missions and there are many different approaches to fostering graduate attributes, the GAP Issues papers do not seek to provide prescriptive directions for how to articulate, embed or assess graduate attributes; rather they seek to identify the key systemic issues relevant to such an endeavour. By identifying these issues and highlighting some of the frequently unrecognised assumptions and implications related to these, the eight short papers provide an orientation to those seeking to lead and inform their university's efforts to achieve graduate attributes.

Each paper is deliberately short — a couple of pages only — and written in an 'informal' style, for ease of engagement. Cross-referencing indicates the interdependence of the eight elements. Each paper may be read in isolation though they are best read in sequence. At the end of the set of papers is a set of trigger questions and prompts to support the use of the papers. It is expected that the papers will be helpful in structuring group discussions (e.g. for implementation planning or professional development) in relation to the eight issues or in personal reflection on the points raised. The decision to keep the papers short means that only key features of current practice are addressed — they aim to start a process of consideration. Additional references and a bibliography are available on the GAP website for those interested in exploring particular topics further.

2.2. Background to the Project

This project aimed to reinvigorate the integration and assessment of graduate attributes in university curricula in response to an issue that is of significant concern to the higher education community. Though graduate attributes have been enshrined in educational policy and embraced for their promotional and marketing potential, the sector has produced little convincing evidence of authentic curriculum integration or of impact on student learning.

Graduate attributes are considered by many researchers to describe the core abilities and values a university community agrees all its graduates should develop as a result of successfully completing their education at the university. They are the sorts of abilities graduates need if they are to be agents of social good (Bowden *et al.* 2000) and contributing members of global and national societies. They are also the abilities employers consider necessary for today's knowledge workers (Watts 2006).

Although there are commonly-cited definitions of graduate attributes, there is not international (Kearns 2001), or even disciplinary (Yeo 2004) agreement on what is being referred to by the term 'graduate attributes (Barrie 2004). The complexity of what is being referred to in short-hand as 'graduate attributes' is often masked by simplistic formulations of graduate skills lists and as a consequence the authenticity and utility of graduate attributes has been disputed by some (Hyland and Johnson 1998; Washer 2007).

Over recent years higher education in Australia has increased its focus on efficiency, compliance and quality measures (Ryan, Guthrie and Neumann 2008) and graduate attributes have featured as key elements of both current (Bath *et al.* 2004; Knight 2001) and proposed university teaching and learning quality assurance strategies. Perhaps related to this quality assurance focus there appears to have been a tendency for many in university communities to engage with graduate attributes as a bureaucratic necessity rather than an intellectual or scholarly endeavour. The previously fragmented and bureaucratic approach to quality assurance has contributed to universities' failure to capture the process required to foster graduate attributes (Carroll 2004).

In many Australian universities, graduate attributes have not developed beyond a specification of learning outcomes, which should be, though rarely are, 'measured' or 'assured'. Recently Barrie (2009) proposed a slightly different definition of graduate attributes as an orientating statement of education outcomes used to inform curriculum design and the provision of teaching and learning experiences at a university. The challenge of better linking graduate attributes to curriculum as well as teaching and learning renewal was a key feature in the development of the National GAP.

Universities and governments have affirmed the need for a university education to focus on the development of such abilities in various significant ways:

- Graduate attributes are embodied in the rhetoric of universities' mission statements and a public statement of such attributes was made a requirement of government funding of universities in 1992;

- Graduate attributes are at the heart of most curriculum audits of professional degrees – a process which claims to map where such attributes are taught for the purposes of certification of professional degrees by accrediting bodies;

- All Australian universities are required as part of the AUQA audit process to show how they are embedding such attributes in the teaching of undergraduate degrees;

- Increasingly, data on graduates' achievements of graduate attributes are seen as the central plank of the next generation of outcomes-based national quality assurance systems; and

- Almost all Australian universities currently have some sort of strategic project underway to support the embedding (or integration) of graduate attributes in curriculum.

However, despite considerable efforts, universities have not produced convincing evidence that the graduate attributes initiatives of the past 20 years have actually had much impact on the learning experiences of today's university students and there has been little impact on student awareness of the abilities they take with them when they leave university (Bath, Smith, Stein and Swann 2004). Similar issues have been identified in the UK despite an even longer history of investing in such initiatives (see Drummond, Nixon and Wiltshire 1998). Some research (Kember and Leung 2006; Barrie 2006; Smith and Bath 2006) has linked learning environments with graduate attributes development, however the extent to which effective integration of graduate attributes development occurs across universities or even across different disciplinary curricula within universities is unknown, and anecdotal evidence paints a less-than-encouraging picture.

For many staff the idea that graduate attributes should be a focus of their teaching is not one to which they subscribe, not because they are resistant or unaware of how to teach, but because their understanding of the nature of graduate attributes is incompatible with their understanding of what university teaching and learning is all about (Barrie 2004; 2007). So, despite the rhetoric of graduate attributes policy and despite the espoused claims of statements of course learning outcomes, the reality is that teaching in some courses has not changed from a model of transmission of factual content.

In recent years, calls for the development of graduate attributes have been cited as a factor relevant to the re-design of the disciplinary undergraduate degree in some universities (e.g. The University of Melbourne) however, for most universities the traditional undergraduate disciplinary degree remains the dominant model. Whilst research indicates that such experiences of disciplinary learning can develop highly valuable graduate attributes (Jones 2008), such learning currently appears to be more often incidental than a deliberate focus of the degree. Despite their espoused intentions, Australian universities have not generally been successful in deliberately and systematically refocussing the curriculum in ways that foreground the development of these attributes as opposed to the acquisition of factual disciplinary content or the accumulation of isolated and unrelated knowledge, skills and dispositions.

While institutional statements of 'generic' graduate attributes have been a helpful departure point, most Australian universities have recognised the need to re-

articulate many of these outcomes in the context of the discipline. In many cases this has effectively entailed using the graduate attributes as a means of developing more sophisticated articulations of discipline learning than the traditional content-based descriptions of the discipline.

Educators have recognised the potential for graduate attributes — if properly conceived of and understood — to provide a logical departure point for curriculum renewal based on a re-casting of the curriculum in terms of a different order of learning outcomes. This approach has also often underpinned the development of active and authentic pedagogies such as Problem Based Learning (PBL) and Work Based Learning (WBL).

Many academics see the relevance of developing higher-level learning outcomes that might be described through well-constructed statements of graduate attributes, and many also demonstrate awareness of teaching strategies compatible with their development (Yorke and Knight 2007). While this group appears able to implement many of these innovations in their curriculum development and teaching practices, they report particular challenges with the assessment of such outcomes — perhaps not unexpectedly as assessment is typically reported as the most problematic aspect of teaching practice. It is apparent that assessment has not changed in ways that are needed to engage students (Murphy 2001) or encourage students to adjust their learning to focus on graduate attributes (Boud and Falchikov 2006). This is of particular concern as a considerable body of educational research tells us that assessment defines the curriculum for students (Rowntree 1977) and influences what and how well, students will learn.

The National GAP initiative took as its starting point what was already know about how individual staff members' understandings of graduate attributes shaped their teaching and assessment practice. It also sought to build on what was known about the relationship between teaching approaches, learning environments and the achievement of graduate attributes outcomes and to explore how other aspects of the institutional environment might impact on a university's efforts to use statements of graduate learning outcomes (graduate attributes) as a tool for curriculum renewal. Such work appears particularly timely in light of recent international interest in the assurance of program-level, student learning outcomes, through the development of 'discipline standards' — articulations of the core outcomes of higher education in a degree.

Additional references and resources on graduate attributes drawn on by the project are available at
http://www.itl.usyd.edu.au/projects/nationalgap/resources/references.htm

2.3.   Methodology

This project was conducted in three inter-related phases and adopted a methodology which facilitated the collection of data appropriate to the focus of each phase. The collection of data was integrated with dissemination and consultation activities designed to engage key university representatives with project processes and outcomes. The network-building activities also began the complex process of connecting interested parties with a view to future collaborations both nationally and internationally.

Phase 1: Mind the GAP. The focus of this phase was the collection and collation of data in relation to the current state of graduate attributes policy and practice to identify the key systemic issues impinging on efforts to foster curriculum renewal to achieve graduate attributes. This involved review and analysis of existing material:

- research literature;
- university policy statements;
- GA references abstracted from reports of the first round of AUQA audits in 38 universities; and
- consultation with an expert reference group.

> **Phase 1 Highlights**
>
> Building on existing knowledge, a range of data collection and analysis strategies suggests eight key domains of systemic issues relevant to institutions' efforts to develop graduate attributes.

The combined data were analysed and cross-validated for recurrent elements, with input from recognised international leaders and research experts in the field of graduate attributes in order to provisionally identify the key systemic features relating to embedding and assessing graduate attributes in universities.

The university policy statement data collected in this phase were also categorised and published in a searchable database as one of the GAP resources.

Phase 2: Bridge the GAP. The second phase of the project focused on working with institutional contacts to validate the features identified in the provisional framework and to explore the affordances and barriers in relation to actual practice

Through the cooperation of the Council of Australian Directors of Academic Development (CADAD) the 36 participating universities nominated an institutional respondent to take part in a telephone interview. The interview sought to explore the GAP framework elements and to enrich the emerging understanding of these elements as sites for engagement with the GA agenda. Responses were analysed in terms of affordance and barriers relating to each element.

The interview protocol was based on a set of trigger statements developed for each of the proposed elements. These were provided to respondents in advance of the interview with the encouragement to undertake consultation within their

institutions beforehand. During the interview, after a consideration of the range of elements in the framework, respondents were asked to focus one or more of the elements particularly relevant to their institution's experience in relation to curriculum renewal to foster the development of graduate attributes.

The data generated highlighted the existence of systemic complexities underlying the classification scheme that were further explored at the first of the project's National Symposia (11 August 2008). The one-day symposium held at The University of Sydney was attended by representatives from 35 Australian universities.

Data collection on the day produced 145 additional rich textual accounts of various innovations, implementations, policy initiatives and other relevant matters. In the analysis of these data the eight elements of the GAP framework were clarified and confirmed and the relationship between the elements interrogated.

> **Phase 2 Highlights**
>
> 36 institutional interviews and the GAP's first national symposium
>
> GAP Framework validation and the development of illustrative vignettes drawn from practice at 36 Australian universities
>
> Writing and peer review of the GAP Issues papers

The data from the interviews and first symposium were also used to generate examples to provide a sense of the range of current practice for each of the GAP framework elements. These illustrative examples of practice were collated as resource on the GAP website and some are included as section 2.5 of this report (pp. 16-27).

A set of discussion papers was written as briefing documents for each of the eight elements of the GAP framework. These GAP Issues papers were peer reviewed by the reference group and invited colleagues from the first GAP symposium. The finalised GAP Issues papers were used to further support the development of a national (and subsequently international) community of practice related to graduate attributes.

Phase 3: Fill the GAP. The third phase of the project built on the GAP network activities of the first two phases to establish a community of practice with a shared understanding of the systemic issues relevant to graduate attributes focussed curriculum renewal.

A second National GAP symposium was held in Sydney to which participants from 24 ALTC projects related to graduate attributes were invited. 29 participants, representing 14 projects, attended.

These projects were identified because of a focus on the challenge of achieving GA in a particular discipline context (e.g. Engineering); on a particular element of the GAP framework (e.g. assessment standards) or on a strategy or pedagogy of particular relevance to graduate attributes (e.g. e-portfolios, career development learning or work-integrated learning).

Participants shared ideas and perspectives arising from their projects, as well as collaborating in the exploration of potential institutional strategies drawn from the GAP framework and the resources developed by the ALTC projects represented at the symposium. A range of key recommendations for action were also generated and forwarded to the ALTC. The symposium supported the establishment of a community of project teams with complementary expertise and perspectives on the achievement of graduate attributes through university learning and teaching. A set of posters created to summarise the key drivers, outcomes and challenges of individual participating projects was published on the National GAP website.

The third national GAP symposia were established as a series of five state based symposia. Unlike the previous two national symposia, attendance at these events was not supported by funding. Over 250 people attended these events.

Phase 3 Highlights

Team members from 14 ALTC Projects participate in second National GAP symposium in Sydney

Cross project collaborations between GAP and key relevant national ALTC projects strengthened

Exploration and development of institutional strategies, drawing on outcomes of relevant ALTC projects.

Third national GAP symposia as five state-based events to engage and connect local communities of practice

Generation of 90 expressions of interest in future collaborations

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The focus of these events was to:

- support engagement by the HE sector with the GAP framework and GAP Issues papers through local communities of practice;
- facilitate the exchange of good practice among members of local communities;
- connect these communities to local student organisations as key missing stakeholders;
- connect members of local graduate attributes communities with emerging national debates and issues of interest;
- connect local participants to other members of the national GAP network; and
- connect members of the GAP network with members of a partner network of graduate attributes experts in Scotland.

The GAP project established links with a major national initiative being facilitated by the QAA in Scotland building on the project's team's research expertise and acknowledged graduate attributes leadership. This link will continue to be developed following completion of the GAP project as basis for future projects.

The third round of symposia was also designed to establish future potential collaborations through the collection of expressions of interest in such work.

The examples of good practice shared at the events were collected as a set of posters available on the GAP website and the expressions of interest in collaboration returned to the GAP network.

2.4.   Overview of the GAP Framework and Issues Papers

The synthesis of literature and practice undertaken in the first phase of the National GAP made apparent a set of key systemic elements relevant to Australian universities' efforts to renew curriculum and learning experiences to achieve graduate attributes. These eight elements featured repeatedly in the research studies, reports of practice and analyses of strategy, and were particularly apparent in the accounts by key practitioners and researchers.

These elements provide a framework which can support universities in reflecting on their institutional approach to achieving graduate attributes. The elements within this framework are hierarchical and related, and each element allows both affordances and barriers to fostering graduate attributes.

Figure 1 provides a representation of the framework of elements and a brief summary is provided below. For a fuller discussion of each of the elements please refer to the GAP Discussion Papers available at http://www.itl.usyd.edu.au/projects/nationalgap/resources/discussionpapers.htm which is included as Appendix 2 to this report.
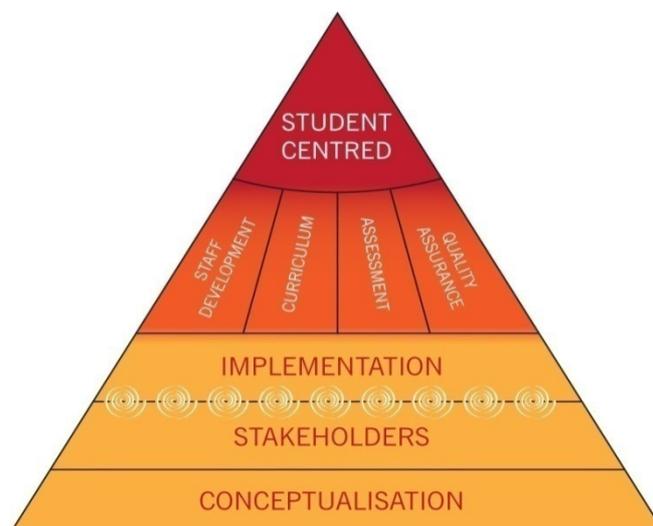

Figure 1: A way of thinking about Institutional Strategy

Conceptualisation
Despite the appearance of a shared vocabulary, graduate attributes can be understood by different people to be very different types of learning outcomes requiring very different types of teaching and learning activities (Barrie 2007).

These different 'conceptions' form the basis for how individuals and universities approach the issue of integrating graduate attributes into policy and curriculum. There are four quite different understandings of graduate attributes outcomes and these are connected with diverse understandings of teaching and learning processes, curriculum design, assessment tools and strategies and quality assurance frameworks (Barrie 2004). Each of these four 'conceptions' is associated with its own set of institutional strategies, and the outcomes achieved through each strategy markedly differ.

Stakeholders
Multiple stakeholders have essential roles in the process of fostering graduate attributes. They can be broadly thought of as including students, teachers, university policy makers, management and funding bodies, employers and industry, and society. Within each of these broad categories are subgroups that have multiple and at times, conflicting agendas.

The extent of the differences and the importance of the interaction between these groups is rarely recognised in graduate attributes initiatives. The inclusion of certain groups, such as employers, and the exclusion of others, such as students, affects the perception of and engagement with graduate attributes at each university and across the sector. The unique roles of different stakeholder groups can affect their perceptions of relevance and their definition of graduate attributes.

Implementation
Often the presence of a list or set of graduate attributes has been considered evidence of their existence, and a deeper integration into curriculum has not occurred. Broadly speaking three approaches are apparent in graduate attributes implementation strategies: either it is left to each academic to enact the policy as they choose; one or a group of individuals is allocated the responsibility of mapping the curriculum or teaching the necessary modules within units, in a 'done for' approach; or a template is developed and its adoption mandated, in a 'done to' approach. Implementation has rarely being systematically resourced and embedded in policies and processes in ways that provide an opportunity for multi-level leadership strategies and staff engagement.

Staff Development
The challenge of curriculum renewal to achieve graduate attributes is a complex one that involves the provision of support and development for staff. Though there is considerable variety in the form such staff development has taken, it has not always engaged with the full diversity of stakeholder groups. Staff development has also not always effectively supported staff in negotiating and contesting their understandings of what is to be fostered (*conceptions of graduate attributes*) — the provision of curriculum tools and techniques has prioritised ahead of the provision of opportunities for conceptual change. Staff development has been characterised by the challenges of motivating staff engagement in such staff development activity and in such curriculum renewal efforts.

Curriculum
Curriculum is often perceived as a linear sequence of content blocks, and in the absence of a whole program review, modification to develop graduate attributes

has been achieved through the addition of more 'blocks'. While additional 'blocks' such as skills courses and internships provide certain opportunities, they can be potentially limiting when not adopted in conjunction with the review and reshaping of the current curriculum. A focus on pedagogical renewal is rarely an element of institutional and program curriculum review. However, it is curriculum renewal that might more effectively change the existing learning experiences and broaden the range of learning experience for students. The inclusion of work-integrated learning, peer learning, industry learning, and authentic learning have been advocated as effective pedagogical approaches, however, the core disciplinary learning experiences of the curriculum are often neglected.

Assessment
Assessment policy and practice have a great impact, as they define the curriculum for all stakeholders and have the potential to undermine initiatives that address the other elements. Unfortunately, the perception of graduate attributes as inconsistent with higher education's aims has contributed to their limited development and *ad hoc* relationship to curriculum. External accreditation requirements can limit or promote the type of graduate attributes that are assessed. Traditional and simplistic approaches to assessment cannot address the complexity of graduate attributes. More appropriate approaches to assessment are those which focus at a whole program level, which share the responsibility for assessment and facilitate student involvement (Hughes and Barrie, forthcoming).

> **Key Insight**
>
> The eight elements of the GAP framework interact in complex ways in different university contexts; it is unlikely that only one element will be implicated in determining the effectiveness of an institution's approach to curriculum renewal to achieve graduate attributes.

Quality Assurance
Integration into the Quality Assurance process is vital to motivate behaviour and organisational change. How teaching and curriculum for graduate attributes are defined, and more importantly assessed, frequently determines staff behaviour. Unfortunately, the current system for quality assurance is somewhat simplistic and reflects a focus on what is easy (easier) to measure. Curriculum mapping exercises often simply note that learning outcomes reference graduate attributes, and the national Course Experience Questionnaire Generic Skills scale does not address applied or discipline-specific attributes. A bureaucratic approach to quality assurance has perhaps contributed to limited engagement by some members of universities in graduate attributes curriculum renewal.

Student-Centred
The system can only be judged to be effective if students are meaningfully engaged in the development of what they understand to be worthwhile outcomes. Effective student engagement is often missing from many institutional approaches and is missing in students own reports of their perceptions of their university's approach to the development of graduate attributes and their own assessment of what they have learned. An approach advocating graduate attributes significance for students and their role in life-long and career learning could enhance their

experience of and engagement with graduate attributes (Hager, Holland and Beckett 2002).

2.5. Illustrative examples of practice

2.5.1. Introduction/Overview

The first phase of the GAP project generated rich accounts of practice in relation to Australian universities' approaches to developing graduate attributes. These accounts of practice were generated through the reading of university policy documents and public reports, through the interviews with institutional representatives and through the reports of practice from participants at GAP symposia.

The following section of this report presents some of these accounts of practice to illustrate the range and variety of current practice in relation to each of the elements of the GAP framework.

At an institutional level, current practice ranged from the development of an institution's first set of graduate attributes, to the use of graduate attributes as the primary basis of major course review and development and subject curriculum development initiatives. Only four universities did not have a public policy statement of graduate attributes and, of these, three were in the process of developing such a policy. Some graduate attributes policies focus only on undergraduate degrees, some cover all levels of degree (e.g. undergraduate, honours, coursework masters, higher research degrees), with the different degree levels addressed by variations in context and scope or variations in expected standards of achievement. Some institutions have developed different sets of attributes for different degree levels (see for example http://www.gradskills.anu.edu.au/), however there was rarely a clear articulation or progression between these different sets of attributes within an institution.

> **Key insight**
>
> Graduate attributes are a topical issue for many universities. Statements are reviewed periodically, and decisions are made about the symbolic and practical consequences of the graduate attributes policy in relation to university's mission.

During the data collection phase, 15 institutions were engaged in a major review that impacted on graduate attributes; these included reviewing their institutional graduate attributes statement, developing a new university vision or strategic plan, reviewing degree structures and curriculum, developing new curriculum, undertaking an academic restructure, or introducing a new assessment policies. Those developments most directly affecting graduate attributes were often reported as being institutional responses to an increasingly competitive university environment and a changing student profile both of which were perceived to require institutional differentiation. As a result, an emerging theme within institutional work was to differentiate the university's attributes from those of

> **Key insight**
>
> Graduate attributes can be used as a competitive 'point of difference' reflecting the institution's values, culture, mission or pedagogy.

'competitors' in terms of either the institution's values, culture (e.g. research intensive) or mission. Differentiation on the basis of pedagogy was also beginning to emerge in institutional discussions regarding differentiation.

The number of institutional graduate attributes included in policy varied between institutions and was not always stable; for example a university was in the process of halving the number of graduate attributes; another was adding two new attributes to an already extensive list. The number of attributes across (31) Australian universities ranged from three to 12, most commonly either three to five attributes (10 universities) or eight to nine attributes (eight universities). A small number of institutions used multiple lists of attributes, or specified different sorts or levels of attributes within a single list of graduate attributes to reflect different sorts of outcomes.

Terminology also varied. 'Graduate attributes' was the most commonly used phrase, but the terms 'graduate skills', 'graduate qualities', 'graduate capabilities', 'generic attributes', 'generic skills', were also used. In some universities, interview respondents reported an educational or strategic rationale for the choice of terms; in most however it reflected popular usage within the institution. For example one respondent reported that their university had initially used the term, 'graduate attributes', and had then switched to 'graduate capabilities' because of the association of this term with 'work-readiness'. They had however then returned to 'graduate attributes', while retaining a partial work-ready requirement in response to staff concerns. For ease of reference and discussion, the term 'graduate attributes' is used throughout this report to encompass all related terms in use. The underlying variations in meaning of the terms are further explored in the Conceptualisation Issues Paper (Appendix 2) and other sections of this report (pp. 18-19).

Irrespective of the terminology used, most institutions had contextualised graduate attributes at faculty, discipline of degree level. In some institutions faculties or discipline areas had developed their own list of attributes independent or in addition to a university-wide set. Most universities used broad domains of graduate attributes or graduate profiles' as the basis for developing contextualise statements of graduate attributes to ensure within-institution coherence and alignment with the university's mission. Respondents from universities with off-shore teaching programs generally indicated that graduate attributes were intended to be applied to all courses, regardless of teaching location, however the extent to which this occurred was less clear.

At an institution level, several universities were exploring the use of electronic portfolios, often as pilot projects, as part of the process of documenting the development of graduate attributes. Some universities reported being unlikely to take up e-portfolios because of the

> **Key insight**
>
> Graduate attributes, though expressed as whole-institution statements, are mostly contextualised and operationalised at a disciplinary level.

"experience of other universities"[1], and others raised concerns that, as a measurement tool, "e-portfolios would drive their graduate attributes"[2] more than institutional mission or academic vision".

The accounts of practice documented in the institutional interviews and during the first GAP symposium reflected all elements of the GAP framework. The distribution of these 344 accounts of practice across the framework elements is reported in Table 1 (see below). Typically, interview respondents focussed on at least three of the framework elements. Accounts of practice relating to Curriculum, Implementation and Stakeholders were particularly prevalent, and reports of practice related to Quality Assurance relatively less frequent.

Table 1: Accounts of practice relating to GAP framework elements generated in interviews and first GAP symposium.

Key element	No. of responses	Percent
Conceptualisation (Issue Paper 1)	38	11
Stakeholders (Issue Paper 2)	54	15.7
Implementation (Issue Paper 3)	56	16.3
Curriculum (Issue Paper 4)	62	18
Assessment (Issue Paper 5)	31	9
Quality Assurance (Issue Paper 6)	18	5.2
Staff Development (Issue Paper 7)	41	12
Student-Centred Approach (Issue Paper 8)	44	12.8
Total	**344**	**100**

2.5.2. Examples of Practice: Conceptualisation

The different understandings people have about the very nature of graduate attributes have been shown to influence how they write policy, design curriculum and approach the development of graduate attributes.

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[1] Response by a representative of University 14 (an Innovative Research University), during the interviews conducted as part of Phase 2 in May 2008.
[2] Response by a representative of University 27 (a New Generation University), during the interviews conducted as part of Phase 2 in May 2008.

Some examples follow of practice reported by interview respondents and symposium participants. :

- *We have responded to staff concerns about graduate attributes being associated with vocationalisation by stressing lifelong learning in its graduate attributes policy.*
- *We made progress with a pilot study on graduate attributes when discussion moved away from a subject-centred view to the purpose of a university and what was 'workable'.*
- *The university regarded graduate attributes as 'aspirational' rather than as a list for attainment, reducing perception that embedding graduate attributes was a compliance exercise.*
- *Graduate attributes are learned in the discipline — not outside it.*
- *We started from a belief that graduate attributes are developed through extra-curricular activities that require the students to document their experiences and for which the institution awards a certificate in addition to the degree.*
- *We tried to match staff conceptualisation of graduate attributes with the university's conceptualisation.*
- *We used an extensive consultation process in an institution undergoing a major academic restructure to help 'everyone know what direction [the university] is going (even if they don't agree)' and motivate staff 'to want to get on with it'.*
- *We tried to get clear that our graduate attributes were not talking about knowledge and skills as separate things.*
- *We spent time discussing the idea that graduate attributes were a new and different way of talking about knowledge — not something that was an add-on to knowledge.*
- *We developed generic attributes based on the lists of employable skills — they have nothing to do with the discipline content of courses.*
- *A variety of understandings among staff, including of developmental stages of graduate attributes.*
- *We started with those academic staff predisposed to the notion of embedding and assessing graduate attributes.*

2.5.3. Examples of Practice: Stakeholders

Various groups (e.g. policy makers, students, curriculum developers, marketers, professional associations, industry groups) have different stakes in the articulation and development of graduate attributes.

Some examples follow of practice reported by interview respondents and symposium participants.

- *Developing graduate attributes within university courses in professional areas was driven by the need to address accreditation requirements, and therefore driven by careers with a focus on 'employability'.*
- *For students, graduate attributes are about career development, and ongoing consultation with the Careers Centre.*
- *The university's graduate attributes were easily aligned with the attributes required by professional bodies.*
- *A capstone course was implemented in response to employer feedback.*

- *The university's review incorporated the idea of a dynamic group of stakeholders into their needs analysis, seeking feedback from a variety of staff, students, graduates and employers to determine how and what should be done towards embedding and assessing graduate attributes.*
- *Design a core set of capabilities through stakeholder consultation, then continue to have them involved in further decisions regarding implementation and evaluation.*
- *Stakeholders — graduates, teaching teams, and employer feedback on the attributes they see (and don't see) in graduates.*
- *Driven by feedback on importance of employability skills.*
- *Staff and students also report on experience and importance of GA to them. Responses inform review.*
- *Used a working group of all the relevant stakeholder groups within the university to develop the statements of attributes, not Academic Board and then used the faculty links to relevant employers to engage them in contextualising these.*
- *Link areas such as careers area emphasising student engagement with graduate attributes and staff development area emphasising staff engagement with GA to foster dialogue across a university and build a shared perspectives.*

2.5.4. Examples of Practice: Implementation

The way a university coordinates and approaches the implementation of its graduate attributes policy is often neglected.

Some examples follow of practice reported by interview respondents and symposium participants.
- *Development or redevelopment of graduate attributes was part of a wider university review or restructure.*
- *Focussing specifically on developing graduate attributes policy and strategy as a precursor to other teaching and learning policy work and review.*
- *Implementation is triggered by drivers such as past or forthcoming Australian Universities Quality Agency (AUQA) audit of graduate attributes, student responses to graduate skills questions on the Course Experience Questionnaire (CEQ), university 're-branding', or performance in the Learning and Teaching Performance Fund.*
- *After wide consultation a small number of graduate attributes was agreed upon as it was suggested fewer attributes would be easier to implement as a contextualised 'graduate profile' for each discipline.*
- *More rigorous approach for unit revisions and new proposals which must include indications of how and where graduate attributes are assessed.*
- *There is a challenge in maintaining engagement, especially of grass roots teaching staff, when a new management agenda is introduced around graduate attributes, it may be more positively received if it is seen to value and build on previous work.*
- *Where structures exist in faculties to support the process, implementation is through course planning and review.*

- *Make graduate attributes a priority in faculty teaching and learning plans, Embedding is devolved to faculties.*
- *Engage with 'pockets of development' and 'pockets of resistance'.*
- *A systematic approach based on a needs analysis as part of a program course review.*
- *Timed implementation to coincide with curriculum reviews using 'windows of opportunity.'*
- *A combined drive at faculty level by a liaison person from the academic development unit and the Associate Dean (T&L) who is 'important for faculty buy-in'.*
- *Appointing a 'teaching and learning champion' in every school. This person may converse with heads of schools across the university and facilitate a symposium to assist those embedding graduate attributes across a degree because they 'sometimes get a bit lost'.*
- *A holistic approach so that graduate attributes implementation was linked to related university initiatives and involved all significant committees.*
- *A 'nested system' of university strategies – top-down, bottom up – had created a huge culture change.*
- *Implementation involved addressing 'staff fatigue' with university initiatives, when they were willing to consider changes, but overwhelmed by the number of apparently unrelated strategic imperatives.*
- *Engineering faculty had 'embraced' newly developed graduate attributes, thereby setting the scene for a university-wide take up.*
- *Established course review teams and an academic developer to help staff revise curricula.*
- *Implementation of graduate attributes in curriculum and teaching is part of academic staff's usual teaching responsibilities.*
- *Implementation of graduate attributes is faculty or discipline-specific.*
- *Signalled the value placed on graduate attributes through using LTPF monies to help support development of graduate attributes.*
- *The university provided funding for two years for projects based around graduate attributes.*

2.5.5. Examples of Practice: Curriculum

Curriculum planning for graduate attributes development, general curriculum structure (e.g. modular, postgraduate entry) and pedagogical features (e.g. PBL, WIL) influence the development of graduate attributes.

Some examples follow of practice reported by interview respondents and symposium participants.

- *We developed four new generic skills subjects: these will eventually be available to all students as an option to develop graduate attributes.*
- *We have personal; and professional development strand in our degree – that is where students develop graduate attributes.*
- *There is no forum to discuss how graduate attributes are developed across the curriculum.*

- *We have developed three curriculum principles that accompany our graduate attributes – they specify the overarching pedagogical characteristics of the curriculum that will develop graduate attributes.*
- *Our curriculum is the responsibility of the individual subject coordinators.*
- *Graduate attributes are developed in all subjects in the degree. Different subjects develop different attributes and we have mapped these across the degree using the subject database.*
- *We mapped the curriculum and lots of our coordinators claimed they were developing the same attribute, but when we explored this they all claimed this just on the basis of using group work in class.*
- *We have a professional practice unit in the hospitals where students develop graduate attributes.*
- *The university has a focus on work-integrated learning in all degrees to achieve graduate attributes.*
- *Authentic learning and desk-based 'field' research integrated into curricula.*
- *Staff worked on curriculum using the concept of 'constructive alignment' of outcomes, attributes and assessment which brought about an 'absolute breakthrough' in their understanding the need for graduate attributes.*
- *An analysis in designated courses to determine whether learning of one good attribute, e.g. information literacy is possible. Not focussing on assessment mapping or organisational structure but establishing capacity of curriculum to determine the learning of one graduate capability. Criteria in three domains: (1) design and development of curriculum; (2) student/staff engagement; (3) evaluation.*
- *Change in senior staff across various disciplines resulted in curriculum review across the school/faculty of Arts and Social Sciences. GA interpreted into new curriculum.*
- *Build career development learning models into curriculum — focusing on employability skills rather than generic attributes so students know what skills they are missing and to bridge any gaps.*
- *Involve Associate Deans (Academic) in curriculum development.*
- *The Academic Development Unit initiated a mapping project, most successfully in one major in the science faculty, over a semester. ADU staff worked with Unit Coordinators who listed GA they taught, developed and assessed in their units, compiled them into a single 'map', fed it back to the group, who then decided to alter sequence of GA development, assessment tasks, and emphasis/coverage of GA.*

2.5.6.   Examples of Practice: Assessment

The explicit embedding of graduate attributes in assessment is essential for policy implementation.

Examples of practice reported by interview respondents and symposium participants included:
- *Assessment was used as the means by which graduate attributes could be 'designed into' curricula.*

- *Reviews of graduate attributes leading to changes in the types of assessment and use of feedback, for example a change from one mid-semester case study and report to two article critiques and two presentations.*
- *Assessment is the key to consistent embedding across the curriculum, but that it has to be a collectively agreed process.*
- *Faculty requirements on the types of assessment made it difficult to implement and assess graduate attributes.*
- *A lot of assessment in our university is 'old-fashioned', with staff focussed on easily assessed content.*
- *Teachers perceived the major challenge was in assessing graduate attributes.*
- *We addressed graduate attributes by engaging staff across levels and departments in discussions around assessment (for example through a focus on constructive alignment), then providing examples of practice.*
- *Moving assessment of group work toward authentic industry based appraisal where we look at what industry actually does and then get HR practitioners to analyse performance appraisal in industry and how this maps against assessment for student.*
- *Moving towards a whole-of-course assessment approach which involves mapping assessment across course.*
- *We use a mapping and discussion of how each assessment addresses which attribute. This led to adding and diversifying assessment types to cover graduate attributes.*
- *Introduced assessment that involves interaction with employers or real-world practitioners.*
- *Get whole departments to engage with what assessment is about, and involve A/Deans, academics and academic development staff in discussion, for example, around constructive alignment.*
- *Assessment aligned in a department with a subject outline template that requires alignment of objectives to learning activities and assessment.*
- *Provide examples of assessment and support to show staff how to do it.*

2.5.7.   Examples of Practice: Quality Assurance

The way a higher education system, university or discipline monitors and assures the development of graduate attributes is one of the most influential drivers of effective implementation.

Examples follow of practice reported by interview respondents and symposium participants.
- *Seek student feedback on the development of graduate attributes in their subjects at the end of each semester.*
- *Conduct annual program reviews based on graduate attributes.*
- *The inclusion of embedded graduate attributes and their alignment to learning outcomes is part of the course and program review process.*
- *Inclusion of graduate attributes in their student review of courses.*
- *Required annual faculty responses to learning and teaching performance indicators which included graduate attributes.*

- *Faculties report on graduate attributes development to a university education committee through a quality assurance sub-committee.*
- *The purpose of the quality assurance committee was to evaluate how each discipline or unit embedded graduate attributes.*
- *A capstone course may be introduced at the faculty or university level as a 'bridge to work and to ensure graduate attributes are addressed.*
- *An online course accreditation process for faculty-developed attributes.*
- *An external panel that reviews graduate attributes mapping across curriculum. Program reaccreditation and AUQA audits have been used as a trigger for the evaluation of other graduate attributes quality assurance mechanisms, in addition to reviews of curriculum and assessment.*
- *Reaccreditation occurs every four years this involves support by learning and teaching staff for program teams engaged in reaccreditation as well as employer research, student research, and staff engagement around desired graduate attributes to inform program design.*
- *There are incentives to successful review in terms of program survival at a time of large-scale change in the university.*
- *Graduate attributes written into evaluation processes for programs.*

2.5.8.   Examples of Practice: Staff Development

The way a university enables and engages staff in efforts to foster graduate attributes contributes to implementation effectiveness.

Examples follow of practice reported by interview respondents and symposium participants.

- *Academic development unit's (ADU) role was central, the unit's staff developed a process for mapping graduate attributes, designed units in conjunction with academic staff, and became curriculum designers.*
- *ADU was given responsibility for developing practical strategies for embedding, and one member worked specifically (but not exclusively) on mapping after faculties sought help with implementing graduate attributes.*
- *The ADU developed a mapping tool based on one used by another university that could become 'part of the everyday business' of faculties, supported by their allocated teaching and learning person.*
- *Recognition that staff engage at different levels of capacity and willingness.*
- *Faculty-based development of graduate attributes was supported by the ADU and enabled by faculty learning and teaching fellows and Associate Deans (Education).*
- *Associate Deans (teaching and learning) worked with course coordinators who then returned to schools to implement the graduate attributes, the process was intended to overcome 'silo-isation'.*
- *Developed a database of best practice that would support staff to integrate graduate attributes into all courses.*
- *Offer workshops that were facilitated by the ADU, but gave attendees opportunity to share their knowledge and experience, or were focused on one element of graduate attributes, for example providing how and what feedback should be provided to students to emphasise the practical aspects of graduate attributes.*

- *Academic development focused on the individual needs of staff, with one-on-one consultation and support, to achieve deep understanding and enable non-threatening cultural change.*
- *Workshops to increase staff engagement in graduate attributes interpretation.*
- *In a university undertaking a major curriculum review, course review teams established for the purpose initially worked on individual units but changed the emphasis to 'nested courses' and help set up a program structure 'for students and the marketplace'. Part of the team's role was to 'sell' the review to staff, and they found many staff keen to review units across a program rather than individually.*
- *Have a focus on graduate attributes in graduate certificate programs for staff, and in induction programs for new staff.*
- *Used consultation and education of staff to correct a misunderstanding by teachers that they have to cover all GA every course/unit/subject.*
- *Staff development activities at faculty level so it fits into overall university strategy regarding understanding and articulating at the disciplinary level.*
- *Developed a resource of teaching strategies to help program leaders embed graduate attributes.*
- *Trialled a mapping process in three different disciplines and developed the results into a generic tool.*
- *Developed a resource which includes templates, workshop outlines, background reading, suggested timing etc which has not been extensively used at this stage.*
- *Included a focus on graduate attributes in faculty wide tutor training — it works because new tutors (mainly sessionals) want to be more confident about tutoring and understand why they assess what they do.*
- *Staff consult one-on-one with curriculum assessment experts to work towards effective understanding of graduate attributes and integration into courses across university. Private approach facilitates non-threatening cultural changes; simultaneously enables mapping for quality assurance purposes.*
- *Empower students to track their own attributes rather than working with staff.*
- *University uses information from individual consultation to identify areas requiring more systematic development at school level through workshops.*

2.5.9. Examples of Practice: Student-Centred

No matter how much effort universities put into teaching graduate attributes, the strategy hasn't worked unless it is perceived by students to have actively engaged them in developing worthwhile attributes.

Examples follow of practice reported by interview respondents and symposium participants.

- *Using an e-portfolio so students will be aware of the attributes they are achieving, and students will choose to develop attributes through extra-curricular activities.*
- *One of the key factors was the introduction of students to graduate attributes and learning outcomes in their first year.*
- *Inclusion of the careers unit or similar service as an advocate for students helps ensure activities are centred around students' needs.*

- *Established alumni networks and mentoring to increase student awareness of their learning and development as professionals.*
- *Use e-portfolios as a mechanism by which students can record and reflect on their experiences, during and beyond university.*
- *A tool which allowed students to access a summary of the attributes assessed by different courses to inform students' choices at enrolment.*
- *Established a pilot project to focus on students' experience of graduate attributes as a way of showing staff and students how 'little bits of students' activities coalesce into a set of skills and knowledge.*
- *Provide a 'roadmap' for the students of their graduate attributes development which also made clear the linkages in courses.*
- *Student rovers are employed (and paid) to run mentoring programs for students with representation and management from library, technical (ICT) support and learning support in Learning Commons space which is a blend of Careers Service, Lang. and Learning and Delivery Support.*
- *Students can undertake activities in three different categories: extracurricular learning and training; professional development; community contribution. Activities are registered and assessed. Once the student has achieved 1000 points, they can receive an award along with their graduation certificate.*
- *The students have to write a reflection paper on how their experiences have developed their GA and themselves.*
- *An extra-curricular competition for student teams to develop and present on graduate attributes, assessed by an expert panel (industry, faculty, careers service), based on the graduate attributes demonstrated.*
- *Students develop a portfolio including exemplars of the graduate outcomes they were developing, assessed in fifth year of the Medicine program.*
- *Exploring an electronic Alumni mentoring program to support student awareness and development of graduate attributes.*

Key insights

Many examples of excellent practices to foster graduate attributes exist across Australian universities

From the perspective of students (and many academic staff), there is not always effective coordination or integration of the various different aspects of practice within institutions

Individual champions and leaders of particular practices and strategies staunchly defend their strategy as the 'right' strategy

A coordinated, multilevel institutional strategy inclusive of a diversity of practices to achieve a diversity of outcomes could draw on the existing practices resources rather than developing new resources

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2.6.　Digital resource of graduate attributes practice ideas

During the course of the GAP project many examples of good practice were shared by collaborators. Some of these were included as illustrative exemplars in the previous section. A digital 'Post-it wall' was developed on the GAP website which contains many of the excellent ideas shared by participants at the two National GAP symposia and gathered during interviews, for how universities and individuals might more effectively achieve graduate attributes.

These 'post-its' are not detailed accounts of practice. Primarily because 'detailed practice' is rarely transferrable, whereas 'ideas' are.

The wall is a bit like a wall of post-its in your office — you can browse the ideas by simply scrolling through them. Alternatively you can use the 'search' function in Internet Explorer to look for particular words or phrases on these pages.

Several scenarios were used to trigger ideas for institutional strategies, ideally drawing on other ALTC projects. The proposed solutions are included on the list of ideas.

The ideas and scenarios were collated as a resource to support and trigger discussion and debate about how to achieve graduate attributes in other institutions.

The Post-it Wall is a living wall and if visitors would like to add a graduate attributes idea to the wall, they can do so via the website.

2.7.　Database of examples of graduate attributes statements

Most Australian universities currently have a policy related to graduate attributes, and in the process of reviewing these policies, the statements of graduate attributes outcomes were also collated and categorised as a resource. The policies were accessed from Australian universities' public websites during 2008.

The collection of de-identified university statements provides a resource for universities seeking to revise and further develop their graduate attributes statements.

In order to assist in searching the many hundreds of statements collected, a way of organising these was necessary. The statements were categorised and coded into groups describing similar graduate attributes. A set of categories developed from a similar analysis of international research universities' graduate attributes statements in 2001 was used.

This set of categories identifies two different levels of attributes statements based on the Conceptions of Graduate Attributes (COGA) framework (Barrie 2004; 2006). The statements were sorted into two levels which corresponded to the levels described by

Barrie (2006) as 'Enabling' attributes — which can be thought of as broader dispositions, and 'Translation' level attributes which are more discrete, discipline specific attributes. At each level the set of categories developed for the data previously collected from international research intensive universities was again used.

At the *Enabling* level, three categories were used:
1. Scholarship,
2. Global Citizenship
3. Life Long learning

At the *Translation* level five categories were used
1. Research and Inquiry
2. Information Literacy
3. Personal and Intellectual Autonomy
4. Ethical Social and Professional Understanding
5. Communication

The boundaries between categories are artificial constructs and some university statements related to more than one category. Where there were many statements within a category relating to a particular aspect of graduate attributes we have attempted to identify these as subcategories. The categories used within each level are arbitrary and only one of many available options, however all statements were able to be allocated to these categories. The database of graduate attributes statements is available on the National GAP website
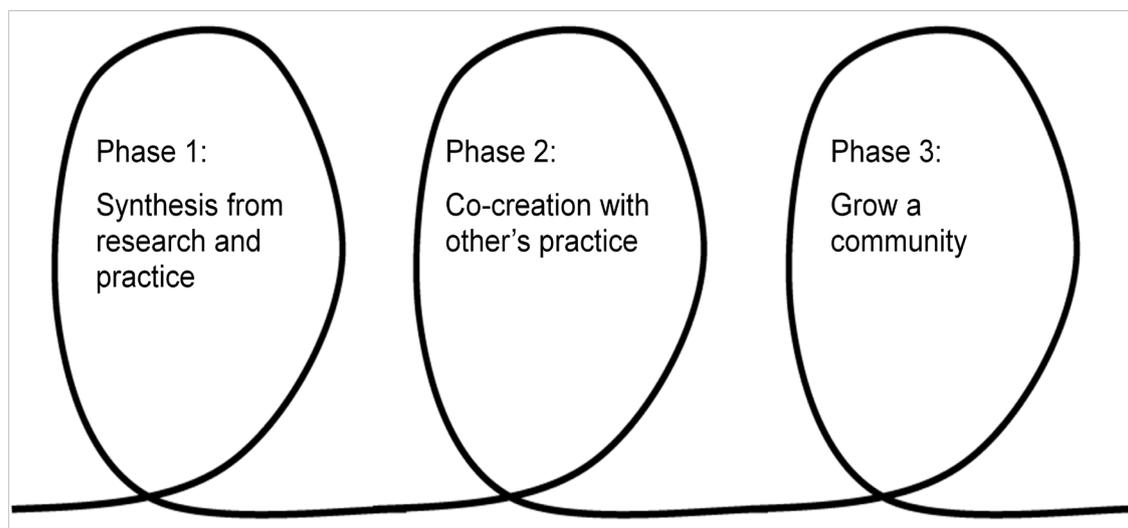http://www.itl.usyd.edu.au/projects/nationalgap/resources/gamap/map.cfm

3. FOSTERING A COMMUNITY OF PRACTICE

3.1. Dissemination

The project adopted the approach of building engagement and collaboration with relevant stakeholders throughout the project as a key dissemination strategy.

In formulating the GAP ALTC proposal, an initial invitation to collaborate was sent to all Australian universities. 22 universities indicated the proposed initiative was of relevance and interest to them. After the nature of the project was finalised and funding secured, another invitation to participate was made. 36 of Australia's universities made a commitment to engage in the project.
The project methodology (see section 2.3) was based on a series of action research loops that sought to build on existing practice and research and then to engage participants as collaborators in creating new knowledge and building from this activity a community that continue such cycles through ongoing collaborations.

Phase 1:

Synthesis from research and practice

Phase 2:

Co-creation with other's practice

Phase 3:

Grow a community

(Diagram adapted from an action research loop used in Cynthia Mitchell's ALTC Fellowship)

The first formal dissemination activity involved circulating the key features of the emerging GAP framework to the 36 nominated interview respondents with a series of trigger statements to support their preparation and internal university consultation, prior to completing the interview. This marked the first level of engagement by 36 universities with the GAP framework as a tool to prompt reflection on current institutional practice.

The next dissemination point was marked by the first National GAP Symposium. The 36 interview respondents were invited to attend, with an accompanying representative of their Careers centre or another nominated individual. These individuals broadly represented the institutional 'Graduate Attributes Champions' or leaders and formed the nucleus of the emerging national community of practice

the GAP initiative sought to foster. 54 participants attended the first symposium. During the symposium, the participants critically engaged with the extended GAP framework and suggested helpful revisions and extensions. During the symposium, the participants also shared reports of institutional practice which supported their own and their colleagues' critical reflection and engagement with the GAP framework.

The next major dissemination activity was the second National GAP symposium. This symposium sought to connect participants and leaders of relevant ALTC project teams with each other, and with the National GAP resources, and in doing so, to extend the scholarly community of practice related to Graduate Attributes. This activity also supported the GAP team in learning of recent developments that should inform this study. 24 recent and current ALTC Projects were identified as potentially relating to efforts to renew curricula to achieve graduate attributes. The projects were selected on the basis that they were: addressing the challenge of achieving Graduate Attributes in a particular discipline context, addressing a particular aspect of the GAP framework (e.g. assessment standards, or staff perceptions) or were focussing on a strategy or pedagogy of particular relevance to Graduate Attributes, such as e-portfolios or work-integrated learning.

> **Key Dissemination facts**
>
> 36 of Australia's 39 universities participated as partners in the National GAP
>
> All but one of Australia's 39 universities were represented amongst the 300+ participants at the GAP symposia.
>
> Over two years, 19 presentations were made on GAP at national and international events, including keynote conference presentations, invited research seminars, as well as peer reviewed conference papers and workshops
>
> Over 750 copies of the GAP Issues papers publication distributed for use GAP website has received almost 12000 unique visits, with the number of visits doubling in the past twelve months

A list of these projects is available on the GAP website at http://www.itl.usyd.edu.au/projects/nationalgap/projectbackground/phase3.htm. 29 participants, representing 14 projects, attended the symposium. As part of their participation in the symposium ALTC project teams were invited to share their work and to identify connections with other attending teams work, using a poster. These posters were provided to attendees to re-use at other dissemination activities and also hosted as digital posters on the GAP website. There were already links between the GAP initiative and other ALTC projects which facilitated engagement by those key stakeholder groups with the GAP findings and resources (See Linkages section below).

The fourth formal dissemination activity centred on the third National GAP symposia, which were held as a series of five state based events. Each event was hosted by a local university and showcased local graduate attributes initiatives in that state. There were 238 participants registered across the five symposia — 46 for Queensland, 54 for New South Wales, 55 for South Australia, 35 for Western Australia and 48 for Victoria. They represented three international universities,

University of Georgia, Strathclyde University and Taylor's University College, two non-universities, Southbank Institute of Technology and CPA Australia, and 31 Australian universities. This series of events also disseminated 79 discrete graduate attributes initiatives presented as posters at the events. These posters are also disseminated digitally via the GAP website at http://www.itl.usyd.edu.au/projects/nationalgap/resources/resources.htm. This series of symposia also built on the international linkages the GAP team had forged with the Scottish Quality Assurance Agency to extend dissemination. Representatives of the 20 Scottish universities responsible for the theme 'Graduates for the 21st Century', submitted seven posters. The entire set of 79 posters from the third GAP symposia will be showcased at the 2010 Scottish national QAA conference on this theme, thus extending the dissemination of this work internationally. An important aspect of dissemination addressed in this last round of symposia focussed on engaging student groups with the GAP initiative and resources. Over the five symposia, 17 student organisations presented their perspective on the 'Student-Centred' issues identified by the GAP framework. Unfortunately, student groups appear to be rarely included in dissemination of teaching and learning resources.

An ongoing dissemination activity involved the distribution and use of the GAP Issues papers by participating Australian universities. Participants in the third GAP symposia were provided with a copy of GAP Issues paper booklet as pre-reading and additional copies were distributed on the day. Importantly, the symposia incorporated a discussion of how the GAP Issues papers might be used to support institutional curriculum renewal to achieve graduate attributes. As a result of these discussions, additional copies of the GAP booklet were provided on request for use in staff development activities, curriculum review meetings and as a resource on graduate certificate courses. Over 750 copies of the booklet have been distributed to date. Printed copies of the GAP Issues papers booklet are available on request and can also be downloaded as a PDF from the GAP website.

3.2.   Linkages

The development of a national community of practice with a shared scholarly focus on curriculum renewal to achieve graduate attributes was a key outcome of the National GAP, and hence both dissemination and linkages were integral to the project methodology. The National GAP initiative built upon the project's research expertise and leadership to forge successful new national and international linkages. Members of the GAP project team participated as Project Team members, Reference or Steering group members on six other ALTC projects related to graduate attributes (for example, the Career Development Learning project done on behalf of the National Association of Graduate Careers Advisors http://www.altc.edu.au/project-career-development-learning-maximising-uow-2007 and the B-Factor Project http://www.altc.edu.au/project-increasing-institutional-success-rmit-2007). As a result of the linkages established by members of the GAP Team the project was also invited to make presentations at five other ALTC national dissemination events (for example the e-portfolio project's AeP2 symposium http://www.eportfoliopractice.qut.edu.au/symposium2/). The links with

the National Association of Graduate Careers Advisors project (see http://www.nagcas.org.au/ALTC/) were particularly fruitful as this body plays a key role in universities' graduate attributes initiatives. Other productive links established were with the discipline standards work of the Business, Management and Economics Learning Network (http://www.altc.edu.au/business-management-economics) through the project 'Facilitating staff and student engagement with graduate attributes development, assessment and standards in Business Faculties' (http://www.altc.edu.au/project-facilitating-staff-student-uts-2007); and with the Engineering and Technology Learning Network (http://www.altc.edu.au/engineering-technology) through the 'Teaching and Assessing Meta-attributes in Engineering' project. Members of the GAP Project Team have noted a significant increase in the number of recent requests to contribute to 2009/10 ALTC projects as members of expert reference groups.

The second national GAP symposium explicitly focussed on establishing links with, and between relevant ALTC projects. In addition to the poster presentations and showcasing of work during the symposium (see Dissemination above) participants were invited to work collaboratively to develop a series of institutional strategies to address some key challenges identified using the GAP framework. These strategies sought to draw on the collective contributions from the different ALTC projects at the symposium to address actual institutional challenges. The proposed strategies are included in the 'GA implementation strategies in practice' repository on the GAP project website at http://www.itl.usyd.edu.au/projects/nationalgap/resources/resources.htm. In their evaluation of the symposium, 100% of participants expressed a desire to collaborate with colleagues in attendance and 86% identified and explored preliminary possibilities for future collaborations. Further, 93% identified synergies with other projects that might be helpful in supporting the uptake of their own projects' results.

> **Key ALTC Linkage Issue**
>
> More than 25 ALTC-funded projects have been engaged in exploring different strategies relevant to the challenge of developing graduate attributes. GAP symposium participants identified that it would be helpful for ALTC to provide coordination, leadership and linkages across this area of work, possibly through the Fellowship scheme.

A key linkage is to the Scottish QAA theme for 2009-2011 on 'Graduates for the 21st Century'. This is a new national enhancement initiative focussing on the development of graduate attributes in Scotland. Members of the GAP team had already established links with the Scottish QAA through invitations to share their research findings in keynote addresses at QAA conferences and national consultancies. With the launch of the new theme, the opportunity to forge links between two national networks was recognised by the

> **Key International Linkage Issue**
>
> The project has connected the Australian GAP network of over 330 people with a new network of the 20 Scottish Higher Education institutions working on the theme of Graduates for the 21st century.
>
> There is a challenge in identifying how this linkage will be supported in the future.

leaders of the GAP project and the QAA project. This was initiated during the third GAP symposia when members of the Scottish network were invited to participate through poster presentations and the leader of the QAA enhancement theme led a session at the symposia via video presentation. This linkage between the two national networks will be built on in future work by a member of the GAP team (Dr Barrie).

Another vital linkage that was established by the GAP Project was the connection with national and institutional student organisations. The third round of GAP symposia engaged representatives from local university student organisations as members of a student panel in each state. The GAP framework identified students as the key apex of the GAP model for reflecting on institutional efforts to develop graduate attributes. The linkage with student groups effectively introduced the student voice into the national GAP network and laid the groundwork to develop a more meaningful future role for students in this network. The linkages extended to international student organisations, including a video presentation used to lead a symposium activity by the President of the National Union of Students in Scotland and the President of the European Student Union. The students were articulate, confident and keen to share their experiences of university education. They suggested universities improve:

> **Key Linkage with Students**:
>
> The project built links with 17 student organisations in Australia. The engagement with students laid the groundwork to develop a more meaningful role for students as engaged participants in the GAP network in the future

- Connection between curricular and extra-curricular activities
- Engagement between academics and students
- Empowering students as agents of their own learning
- The integration of real-world experience and meaningful assessment
- Support for students from non-traditional backgrounds
- On-campus learning environments and IT support
- Transparency of outcomes of student feedback and involvement of students in strategic decisions
- Funding and resource allocation for teaching to permit smaller class sizes

A further linkage achieved by the project was between the GAP network and emerging national agendas such as the standards debate. The GAP initiative was referred to in the 2009 AUQA Standards discussion paper, and during the final seminar series, a video presentation by one of the AUQA Auditors was used to lead a discussion on the role of graduate attributes in future institutional quality assurance strategies. In addition, GAP symposium participants critically engaged in considering how current work in relation to graduate attributes could provide a vital platform for the development of discipline standards. Rather than providing the basis for the development of de-contextualised generic skills assessments, current Australian university initiatives around graduate attributes provide a basis for the development of more sophisticated

> **Key Linkage to National Standards Agenda**
>
> The GAP network is ideally placed to contribute to the debate about standards in Australia and to support the development of more sophisticated and relevant graduate outcome standards by ALTC discipline communities

and relevant statements of discipline standards. The members of the GAP network across all Australian universities are a source of relevant expertise to support the development of such standards by discipline communities.

A challenge that was reported across the symposia was that of establishing linkages with top-level institutional leaders, with some participants reporting limited engagement by senior staff with the issues underpinning curriculum renewal efforts.

3.3.   Building on current practice

During the state-based events that comprised the third GAP symposia participants identified potential future linkages with other members of the GAP network in Australia and Scotland. Triggered by the information presented in the 79 posters and the discussion at the events, participants proposed 'expressions of interest' in future collaborations. These expressions of interest identified a potential project of interest to the proposer, as well as potential collaborators from amongst the members of the GAP network and the Scottish QAA network. 90 expressions of interest in collaborative projects were developed. These projects broadly cover the following areas of interest:

- Graduate attributes in specific disciplines (Science, Law, Architecture, Behavioural Science, Engineering and generalist degrees);
- Specific graduate attributes (social responsibility, sustainability, citizenship, critical thinking, creativity, research and inquiry, information literacy);
- Curriculum renewal (embedding in teaching, whole-of-program approaches, internationalisation and diversity, assessment and feedback, assessment using technology;
- Quality assurance;
- Graduate attributes in specific contexts (postgraduate, research higher degrees, employment and work-integrated learning); and
- Engaging staff and students.

The information and contact details associated with these expressions of interest were posted on the GAP website and circulated to the GAP network to seed future collaborations following completion of the current project.

During the final round of symposia participants also proposed a range of actions to build on existing practice and the insights developed by the GAP network. These proposed actions fell into seven broad areas:

1. Development of outcomes based standards in the disciplines that incorporate (rather than accompany) graduate attributes. This could incorporate the use of authentic assessment to involve industry and could involve longitudinal research on graduate outcomes as part of the development of discipline standards. There was a perceived need to ensure that graduate attributes research and practice informed current national developments in relation to standards and qualification frameworks.

2. Development of alternative approaches to staff development and quality assurance for graduate attributes.

3. Development of more sophisticated understandings of curriculum as being broader than the classroom, not about taught content, and being focussed (by the learner) on developing attributes. Examination of the role of graduate attributes in curriculum transitions and transitions between disciplines.

4. Ensure Australian universities are connected to national and international developments related to graduate attributes and continue to foster conversations about graduate attributes through discipline and state based groups.

5. Develop strategies for more meaningful engagement by students in the graduate attributes agenda for curriculum reform, investigate the student experience of developing graduate attributes, investigate the student experience of setting their own intended degree learning outcomes.

6. Develop new internal institution collaborations and multilevel leadership for graduate attributes. This could include collaborations between different groups to negotiate and recognise the contributions of multiple strategies, coordination of engagement by staff in program review and accreditation for development of graduate attributes. Develop means of ensuring collaboration comes for the 'top' (VC, DVC and Dean) level.

7. Access to funding from government and to graduate attributes expertise, to support staff in engaging in collaborative curriculum renewal to achieve graduate attributes.

3.4. Publications and Presentations

The findings of the project have been reported in 20 publications and presentations in national and international fora over the past two years, including keynote presentations at prestigious international conferences such as the Improving Student Learning conference in London, invited research seminars, as well as peer reviewed conference papers and workshops. The presentations are available for download from the GAP website and include:

Hughes, C. and Barrie, S. (in press). Influences on the assessment of graduate attributes in higher education. *Assessment and Evaluation in Higher Education*.

Barrie, S., Hughes, C. and Smith, C. (2009). *Findings from The National Graduate Attributes Project*: Poster presented at the Australia Learning and Teaching Council Assessment Forum, Melbourne, Victoria, 19-20 November.

Barrie, S., Hughes, C. and Smith, C. (2009). *The (Australian) National Graduate Attributes Project.* Poster presented at the Assessment Institute. Indianapolis, Indiana, 25–27 October.

Hughes, C. and Barrie, S. (2009). *Influences on the Assessment of Graduate Attributes in Higher Education*: Workshop conducted at the Assessment Institute, Indianapolis, Indiana, 25–27 October.

Hughes, C. (2009). *The Assessment of Ethics*. Paper presented at the 4th Asia Pacific Educational Integrity Conference: Creating an Inclusive Approach, Wollongong, NSW, 29-30 September.

Barrie, S.C. (2009). *Today's learners; Tomorrow's graduates; Yesterday's universities*. Keynote address at the Improving student learning for the 21st century learner conference, London, 7 September.

Barrie, S.C. (2009). *Institutional constraints on efforts to foster graduate attributes through the student experience of research based learning.* Paper presented at European Association for Research on Learning and Instruction international conference, Amsterdam, 25-29 August.

Barrie, S. (2009). Research Higher Degree Attributes. Invited address at Postgraduate Careers Advisors Network (PCAN) Conference, University of Sydney, 7 July.

Hughes, C. (2009). *Assessment of graduate attributes: Report from the National Graduate Attributes Project and lessons for veterinary science*. Keynote address at the Australasian Veterinary Education Symposium, Brisbane, Queensland, 5-7 July.

Barrie, S.C. (2009). *Achieving Graduate Attributes*. Keynote address at Scottish QAA Enhancement Themes Conference, Edinburgh, Scotland, 5–6 March.

Hughes, C. and Barrie, S. (2009). *ePortfolios as a tool to articulate graduate attributes*. Invited presentation at the Australia Learning and Teaching Council ePortfolio AeP2 symposium, QUT, Brisbane, 9-10 February.

Barrie, S., Hughes, C. and Smith, C. (2008). *Approaches to the assessment of graduate attributes in higher education*. Roundtable conducted at the ATN Assessment Conference: Engaging Students in Assessment, Adelaide, South Australia, 19-21 November.

Barrie, S., Hughes, C. and Smith, C. (2008). *The National Graduate Attributes Project*: Poster presented at the Australia Learning and Teaching Council Grants Scheme Assessment Forum, Adelaide, South Australia, 19 November.

Barrie, S.C. (2008). *Broadening conceptions of employability: How changing our understanding of graduate attributes can help broaden the search for a skilled workforce*. Invited presentation at NAGCAS 'Partnering for Success' conference, Sydney, NSW, 9–12 November.

Barrie, S.C. (2008). *Identity Transitions: Developing Graduate Attributes*. Keynote presentation at the Effective Teaching and Learning conference, Brisbane, Queensland, 30–31 October.

Barrie, S.C. (2008). *Graduate Attributes: Why bother?* Invited presentation at University of Queensland Teaching and Learning Week, Brisbane, 29 October.

Barrie, S.C., Hughes, C. and Smith, C. (2008). *Locating generic graduate attributes in the Australian university curriculum: taught? mapped? implied? hidden? or 'missing in action'?* Paper presented at "Improving student learning through the curriculum" the 16th Improving Student Learning Symposium, University of Durham, UK, 1–3 September.

Barrie, S.C., Hughes, C. and Smith, C. (2008). *Using graduate attributes to win the curriculum culture wars: Developing practical strategies to achieve university wide curriculum renewal.* Invited workshop at "Improving student learning through the curriculum" the 16th Improving Student Learning Symposium, University of Durham, UK, 1–3 September.

Barrie, S.C., Hughes, C. and Smith, C. (2008). *Approaches to the assessment of graduate attributes in higher education.* Paper presented at EARLI Assessment SIG, Berlin, 27–29 August.

Barrie, S.C. (2008). *Graduate Attributes and Career Development Learning*. Invited keynote address at the NAGCAS national symposium, Melbourne, 19 June.

4. EVALUATION

The project employed a range of evaluation strategies for ongoing review and refinement of project processes, for ensuring the quality of deliverables and for monitoring the effectiveness of online and face-to-face dissemination strategies. Wherever possible, evaluation strategies were designed to actively engage a range of stakeholders — academics, administrators, careers advisers, students — in the project and to facilitate dissemination of information about project processes and outcomes. In addition to the formal strategies described below, a key feature of the evaluation strategy was regular telephone and face-to-face communication among members of the project team to reflect on and review the project-in-progress in relation to planned milestones and processes.

In the first instance, an international reference group was established to provide opinion on processes and products. The group comprised:

- Dr Jeanette Baird – Audit Director, Australian Universities Quality Agency
- Professor Trudy W. Banta – Professor of Higher Education and Senior Advisor to the Chancellor for Academic Planning and Evaluation, Indiana University-Purdue University Indianapolis USA
- Professor Emeritus John A Bowden – RMIT University, Melbourne, Australia
- Dr Claire Carney – Assistant Director, Quality Assurance Agency, Scotland
- Professor Lee Harvey – Consultant, Quality Research International, Birmingham, UK
- Professor Marcia Mentkowski – Director, Educational Research and Evaluation, and Professor of Psychology, Alverno College, Milwaukee, Wisconsin, USA
- Professor Margaret Price – Professor in Learning and Assessment, and Director of ASKe, Centre of Excellence in Teaching and Learning, Oxford Brookes University, UK
- Professor Lorraine Stefani – Director, Centre for Academic Development, University of Auckland, New Zealand.
- Professor Barbara Holland – Pro Vice Chancellor Engagement. University of Western Sydney and Director, Learn and Serve America's National Service-Learning Clearinghouse.

Input from this group particularly informed the development of the GAP framework, the framing of the interview schedule used with institutional representatives in phase one of the project and the selection and presentation of material included in the GAP Issues papers.

The project team used the opportunities offered through national and international conferences to obtain peer review on the framework in its development stages. Round-table sessions were conducted for this purpose in 2008 in Durham (the EARLI SIG conference) and Adelaide (The ATN Assessment conference). Other findings are or have been subjected to the peer review processes of leading educational journals such as *Assessment and Evaluation in Higher Education*. (See section 3.4 pp. 35-37 for a list of publications and presentations).

Larger events such as the series of symposia were evaluated using a variety of methods including observation and recording of participant responses to interactive activities, paper-based surveys with provision for the collection of quantitative and qualitative data and responses to invitations for participation in future collaboration.

Information provided by participants during the first symposium proved an extremely rich source of data to confirm and elaborate on elements of the framework. It was also the first step in creating a national network of stakeholders and potential collaborators. The evaluation of this event also provided helpful formative feedback on which the team incorporated into the development of organisational arrangements — communication and processes — when planning the second and third symposia.

Evaluative data demonstrated the effectiveness of the second symposium as a dissemination strategy, not only for the GAP but also for the related projects that were represented on the day. 100% of participants reported that they became more aware of some of the outcomes of other relevant ALTC projects and 93% were able to identify synergies with other projects that were helpful in supporting the uptake of their project results. A high proportion of respondents also intended to extend the dissemination process by sharing information with other colleagues (93%), by recommending action or further discussion of symposium issues (79%) and sharing information with senior management (72%). In addition, the event was highly effective in generating future activity in this area. 100% of participants expressed a desire to engage in future collaborations and 85% agreed that they had already identified possibilities for doing so.

Participants in the third symposia series reported that they appreciated gaining broader national and international perspectives on future directions for Quality Assurance in Australia. Almost all participants found it of value to meet like-minded individuals for the exchange of experience and ideas. Processes that had facilitated this included not only the structured sessions but also opportunities for informal interactions. Posters and presentations by local champions proved an effective way to showcase GA-related projects and contributed to participants' ability to develop plans for

Symposium 3 evaluation survey results Mean score out of 5.0	
1. I became aware of other graduate attributes related projects	4.5
2. I became aware of student perspectives on graduate attributes	4.3
3. I have developed helpful insights and understandings from my participation in this symposium	4.1
4. I have developed helpful insights in the possible role of graduate attributes in future quality assurance processes	4.1
5. I would like to collaborate with colleagues from the GAP network on further projects related to graduate attributes	4.0
6. I identified possibilities for future collaborations on graduate attributes projects	3.7
7. (ALTC item) I intend to share information from this symposium with other colleagues	4.3
8. I will recommend actions or further discussions of issues arising from this symposium to colleagues in my university	4.3
(ALTC item) I intend to share information from this symposium with senior management	3.8
What is your overall rating of this symposium	4.1

how they could make connections and build on current activities. 90 people responded to the team's invitation to express an interest in developing future national and international collaborations.

Use of the materials disseminated through the project website (hosted by The University of Sydney) was monitored. Over the documented period, 16 July 2008–28 September 2009, visits to the National GAP website doubled, going from an average of 600 unique views per month to over 1,200. During this period, the National GAP website has handled almost 12,000 unique visits. Most visitors to the website land on the home page (over 2,000 unique visits), then navigate towards a more specific area within the website. After the home page, the three pages registering the most hits are network events (1,217 unique visits), resources (467 unique visits) and GAP Issues Papers and publications (418 unique visits).

Towards the end of the project, an external evaluator (Dr Margaret Kiley, CEDAM, ANU) was requested to conduct a summative evaluation. This was undertaken through:

(i)   a review of project documentation and materials;
(ii)   participation of the evaluator in the third set of symposia; and
(iii)   a face-to-face interview with the project team. (See attached report – Appendix 1).

5. CONCLUSION AND FINAL THOUGHTS

The National GAP initiative has highlighted three issues of particular relevance to the current and future significance of graduate attributes to the Australian higher education sector.

The first of these is a confirmation of the importance of graduate attributes to staff and students alike. This was demonstrated throughout the project in various ways that included:

- the strength of the response to the project team's invitations to participate in the project and collaborate in the symposia;
- the breadth and depth of existing graduate attributes activity – national, institutional, disciplinary, program and course/subject – brought together through the networking opportunities provided by the project; and
- the willingness with which participants — especially students — offered their opinions and perspectives on graduate attributes and the openness with which they engaged in open dialogue with colleagues during the symposia.

National and international moves towards 'standards' as the basis for the renewal and assurance of the quality of curriculum and teaching will only intensify the relevance of graduate attributes research and development to outcomes-based education.

The second issue concerns the complexity of graduate attributes – both as a concept and in terms of policy implementation. Despite the enormous amount of activity in this area identified during the GAP project, effective implementation, particularly on a scale beyond the individual subject/course or program remains elusive. A key outcome of this project, a suite of National GAP Issues papers, helps explain both the conceptual and implementation complexity, while at the same time providing a resource to support institutions' practical implementation efforts.

Finally, the GAP project has identified fruitful avenues for future graduate attributes activity including investigations of the student graduate attributes experience: the relationship between graduate attributes and the 'standards' movement: and, the possibility of synergies between standards movements in Australia and similar developments in other parts of the world (Tuning, Europe and Latin America: QAA, UK: Lumina foundation, USA). The national and international collaborations generated through interactions with the Scottish Quality Assurance Agency hold particular potential. The GAP team's interactions with the project's international reference group, with the participants at the national symposia and at conference presentations have provided not only strong directions for future work in the area but also identified those who are willing to carry this work forward.

One of the key challenges for curriculum renewal to achieve graduate attributes is the systemic and significant, cultural, attitudinal and practical shifts required in the approach taken by individual staff to designing curriculum and teaching. At the heart of this remains the well recognised and researched challenge of changing staff conceptions and understandings of what graduate attributes are and how they are developed, however it also involves supporting academic communities in changing their focus from the highly-specialised and research-based areas that define the courses that they teach, to the program as an integrated whole experience that students engage in and through which their student learning of graduate attributes is scaffolded. This problem requires a systemic approach to create the institutional environments in which such fundamental shifts are possible.

The graduate attributes agenda is unusual in that it traverses taken-for-granted boundaries that define our practices; for instance crossing disciplines, courses, programs, teachers, the academy and industry. It is also unusual in that it touches on the intentions and contributions of many different members of the university community; students and teachers, managers, support and liaison staff, industry affiliates and professional bodies. It is an agenda that also involves the many structures that support or enable teaching and learning; the state, university governance, schools/departments, and individual academic roles. This complexity demands a collaborative and intellectual engagement in the graduate attributes endeavour, not the least because it is, at its heart, about the quality of student learning.

6. REFERENCES

Barrie S.C. (2004). A research-based approach to generic graduate attributes policy. *Higher Education Research and Development*. 23 (3), 261-275.

Barrie, S. (2006). Understanding what we mean by the generic attributes of graduates. *Higher Education*, 51, 215–241.

Barrie, S. (2007). A conceptual framework for the teaching and learning of generic graduate attributes. Studies in Higher Education, 32(4), 439-458.

Barrie S.C. (2009). *Today's learners; Tomorrow's graduates; Yesterday's universities*. Keynote address at the Improving student learning for the 21st century learner conference, London 7th September

Bath, D., Smith, C., Stein, S. and Swann, R. (2004). Beyond mapping and embedding graduate attributes: bringing together quality assurance and action learning to create a validated and living curriculum. *Higher Education Research* and *Development*, 23(3), 313-328.

Boud, D. and Falchikov, N. (2006). Aligning assessment with long-term learning. *Assessment and Evaluation in Higher Education, 31*(4), 399-413.

Bowden, J., Hart, G., King, B., Trigwell, K. and Watts, O. (2000). Generic capabilities of ATN university graduates. from http://www.clt.uts.edu.au/ATN.grad.cap.project.index.html

Candy, P. and Crebert, G. (1991). Ivory tower to concrete jungle. The difficult transition from the academy to the workplace as learning environments. *Journal of Higher Education, 62*(5), 570-592.

Carroll, M. (2004). *Quality Assuring the Student Experience: AUQA's Findings*. Paper presented at the Student Experience Conference 2004. See http://www.csu.edu.au/division/studserv/sec/papers/carroll.doc

Drummond, I., Nixon, I. and Wiltshire, J. (1998). Personal transferable skills in higher education: the problems of implementing good practice. *Quality assurance in education*, 6(1), 19-26.

Hager, P., Holland, S. and Beckett, D. (2002). Enhancing the Learning and Employability of Graduates: The role of Generic Skills. Business / Higher Education Round Table Position Paper No.9. Melbourne, Australia.

Hughes, C. and Barrie, S. (in press). Influences on the assessment of graduate attributes in higher education. *Assessment and Evaluation in Higher Education*.

Hyland, T. and Johnson, S. (1998). Of Cabbages and Key Skills: exploding the mythology of core transferable skills in post-school education. *Journal of Further and Higher Education, 22*(2), 163-172.

Jones, A. (2008). Generic attributes as espoused theory: the importance of context. Higher Education. 58(2), 175-191.

Kearns, P. (2001). Generic Skills for the New Economy: Review of Research. National Centre for Vocational Education Research (NCVER), Adelaide.

Kember, D. and Leung, D.Y.P. (2006). Characterising a teaching and learning environment conducive to making demands on students while not making their workload excessive. Studies in higher education, 31 (2), p. 185.

Knight, P. (2001). Employability and quality. *Quality in Higher Education, 7*(2), 93–95.

Murphy, R. (2001). A Briefing on Key Skills in Higher Education, *Assessment Series No 6,* Learning and Teaching Support Network (LTSN) Generic Centre. See http://www.palatine.ac.uk/files/967.pdf .

Rowntree, D. (1977). Assessing Students: How Shall we Know Them? London: Harper and Row.

Ryan, S., Guthrie, J. and Neuman, R. (2008). Australian Higher Education Transformed: From Central Coordination to Control, in C. Mazza, P. Quattrone and A. Riccaboni (eds.), European Universities in Transition: Issues, Models and Cases, ed. Cheltenham, United Kingdom: Edward Elgar, pp. 171-87.

Smith, C.D., and Bath, D.M. (2006). The Role of the Learning Community in the Development of Discipline Knowledge and Generic Graduate Outcomes. *Higher Education (51),* 259-286.

Washer, P. (2007). Revisiting key skills: a practical framework for higher education. *Quality in Higher Education, 13*(1), 57-67.

Watts, A.G. (2006). Career development learning and employability, In M. Yorke (ed.) *Learning and Employability series*, Series 2, Higher Education Academy.

Yeo, S. (2004). Embedding Graduate Attributes in Assessment Tasks. See http://www.cdtl.nus.edu.sg/link/pdf/Jul2004.pdf

Yorke, M. and Knight, P. (2007). Evidence-informed pedagogy and the enhancement of student employability. *Teaching in Higher Education, 12*(2), 157-170.

APPENDIX 1: INDEPENT EVALUATION REPORT

Evaluation: National Graduate Attributes Project

Thank you very much for inviting me to evaluate your ALTC-funded project, *The National Graduate Attributes Project: Integration and assessment of graduate attributes in curriculum*. I have really enjoyed being involved in providing formative feedback on your contribution to our understanding of undergraduate student learning, teaching and curriculum. While we discussed that the focus of your project has been at the undergraduate level in the main, I can see that that the framework you have developed could also be appropriate to postgraduate coursework, including research education.

The following report is in two main parts and includes comments from:

- our day-long discussion of the project
- attendance at one of the state-based symposia.

I understand that my role as an evaluator is formative and so my report is written from that stance.

Team Discussion around Evaluation Questions

I particularly enjoyed this part of the evaluation process as the team engaged in reflecting on questions posed, building on each other's comments and recollections, and occasionally correcting and arguing alternatives. The energy levels were high, and the insights substantial. I believe that some points from the following discussion belong in Part 2 of the report to ALTC.

Draft report

Having read the draft Report Part 1, I suggest that the comments I made at the time be incorporated into the final publication where appropriate

Draft Issues Papers

The Issues Papers have great potential and useability and I noted at the state-based workshop that the suggestions made at the group discussion be incorporated. I also noted a high level of interest in the Issues Papers from participants at the workshop.

Project Processes

What processes were planned and what were actually put in place for the project?

Were there any variations from the processes that were initially proposed- if so, why? While on the whole you did what you set out to do, as you discussed, in light of developments within the sector and ALTC, you made decisions to change some things. For example, you had proposed that you would seed discipline networks, but didn't when you found out about changes at ALTC. However, you have forged strong links with the ALTC discipline scholars.

You clearly have a much stronger student presence than you originally planned, which in retrospect turned out to be a wise decision.

Certainly the strength of the networks and networking already undertaken by the team prior to the funding of the project assisted in the extensive implementation undertaken, e.g. nationally (AUQA) and internationally (HEA and QAA). However, as you say, you needed to seek a six months extension in light of the dissemination phase. It was interesting to discover how you had taken note of your experience with the first symposium where there appeared to be a misunderstanding with participants. The GAP team was seeking confirmation and it appears that the participants wanted answers as they thought they already knew what were the problems. Certainly reflecting on this experience appears to have assisted you in writing the issues papers and preparing for the final symposia.

Scholarly approach

How has this project used current and relevant literature to inform its processes? Not only has the literature been extensively used but also your work has been able to feed back into the literature.

To what extent is the project methodology considered appropriate, efficient and effective?
As a scoping study, the methodology seemed to be very appropriate as it took into account the widest possible selection of available evidence across the sector and was very inclusive. The project supported participation through airfares, etc. There appears to have been a wide spread of data with information being sought from many different sources, including practitioners and experts; hence, validation and triangulation of data from a variety of sources. The project was well grounded in a theoretical background and also fed back into theory as it progressed.

How might the project methodology be improved?
The methodology was adapted during the project, e.g. to make more use other projects' outputs rather than creating new ones.

A key seems to have been the comment 'Being aware of what's happening around you and moving to suit (to a certain extent) what's going on. Complexity meant that we needed to build in room to be flexible'. Hence the methodology needed to reflect this, which, it seems, is one reason that you ended up with the issues papers.

Is there evidence the methodology can be adapted for other projects?
Certainly other projects might like to work with frameworks in a way which helps to make sense of complexity.

Outcomes

What were the observable short-term outcomes?
There are a number of outcomes to date including:

- Website;

- Presentations;
- Established networks;
- Informing other projects;
- Issues papers;
- Linkages with other ALTC projects; and particularly
- A renewed interest in Graduate Attributes.

To what extent have the intended project outcomes been achieved?
Not all of the intended outcomes have been achieved to the extent that the proposal suggested, and I understand that these changes will be detailed in the Final report. However, on the whole they reflect changes in aims, e.g. giving students a voice.

I feel our discussions addressed an important issue and one that would be worth addressing further with ALTC, and that is the substantial differences between scoping/mapping studies and developmental projects. As this was a scoping study it would be inappropriate to expect a rage of outcomes similar to those of developmental projects.

Were there any unintended outcomes?
In my view, the team has achieved more than might have been expected given the funding and time. For example, the unintended but delightful link with the QAA- ALTC project, and the level of student involvement. Another intended outcome was the contributions to other ALTC projects, e.g. Career development learning project: maximising the contribution of work-integrated learning to the student experience; or, The B Factor project: understanding academic staff beliefs about graduate attributes. As you argue, the Graduate Attributes framework works for anything, such as enhancing student learning as it is a way of thinking about teaching and institutional culture and it is broadly useful, even generic!

These unintended outcomes required the team to seek six months extra but it seems well worthwhile.

As an evaluator, what was particularly interesting was the research team's own reflections on the personal unintended outcomes of the project. Basically the team suggested that they had got a great deal out of the project (possibly more than anyone else), 'like a fellowship almost'. More specifically:

- Recognising that context is what makes things interesting;
- Increased understanding of complexity, particularly of assessment;
- A conceptual and theoretical understanding of Graduate Attributes: A different way of talking about them;
- Learning new ways of working together, especially at a national level;
- Realising that asking the right questions can be very powerful; and
- Finding <u>an</u> answer.

What factors helped and hindered in the achievement of the outcomes?

There were a number of supportive factors identified, including:

- Existing networks;
- International Reference Group; and
- Research based credibility.

Hindrances included:

- Staffing and time management issues, e.g. Funding doesn't buy leaders' time out.
- The leader needing to work intensively on the project; and
- The need to block out time. The face-to-face meetings helped in this way as they 'forced' members to set aside time, and so were used as a time management tool.

Scalability and sustainability

How has this project built on the work of other projects/institutions?
See above

How will the lessons learned from this project be useful to other institutions?
The team, in its reflection, suggests that the following will assist institutions:

- A comprehensive overview of the range of issues that interact;
- The importance of engaging with other projects;
- Deep engagement with core teaching and learning issues, not just surface engagement;
- Dialogic process around teaching and learning issues, not just Graduate Attributes;
- Opportunities for people who had similar experiences and expertise but never talked before to get together and discuss; and
- A key feature of the project is that it brought together other projects that might not necessarily, on the surface, appear to link. However, the GAP project provided an overarching challenge/theme and other projects were able to contribute their particular perspective.

How has the project facilitated collaboration and networking amongst those working towards embedding and assessing graduate attributes?
It seems to me that the project has facilitated collaboration very well, e.g. it has brought together people who weren't even aware they were working in the area of Graduate Attributes. This appears to be based on the notion of a network that is as complex as the problem.

What measures, if any, have been put in place to promote sustainability of the project's focus and outcomes?
As the team discussed this issue it was clear that there were a number of activities that would assist with sustainability, even though they may not have been planned that way. The group also discussed the paradoxical nature of a

project being sustainable. By definition a project has a beginning and an end and an ideal project is one that comes in 'on time and on budget'. It might be that the project could recommend to ALTC that 'activities' such as scoping studies are considered differently from those that are more developmental.

Furthermore, there was some discussion, which I suggest should be taken up in Part 2 of the report, which proposes that for projects such as this (investigative rather than developmental) to be sustainable, they need national leadership. Hence, one suggestion that the team made, and which I think has serious merit, is that at the end of a successful project, the national leadership should be sustained through a fellowship for the leader, or one member of the team. This would allow follow-up and a chance to build on outcomes of the project and maintain national leadership. Investigative studies are long-term, and applicants should be aware that they would be, for example, a Graduate Attributes expert for next five years. Other activities include:

- Resources that last as long as the website;
- Some outcomes are people and their changed ways of thinking;
- Subsequent (spin-off) projects, e.g. institutional projects;
- GAP's eight themes are sustainable, because they have already been around for a while and the university sector and curriculum development is fairly stable, so they will probably be around for a while longer;
- Project has triggered lots of independent projects and so the next wave of interest in Graduate Attributes has already started;
- Things have to be good enough to make people who are already doing things of their own, or don't feel it is relevant to them, to be interested; and
- How Graduate Attributes are taught to be taught in Foundations of University Teaching programs.

What are the implications of this project for future ALTC projects related to issues of graduate attributes and standards?
It will be important that ALTC recognises that there will be a number of future projects that focus on only one aspect of the 8-point framework, but they will need to be strongly encouraged to recognise the importance of the other components, e.g. any future projects need to take into account different conceptualisations of Graduate Attributes, because approaches are often uni-dimensional. If not they might limit their project's sustainability/success/impact. Hence it will be important to alert them to the importance of the interplay.

It was suggested that previous project team members be a member of the reference / steering group of similar projects to enable the lessons learned to be effectively passed on.

The future?
Initially the team was not certain of the next specific steps in this area. Teaching and Learning changes need to be seen as part of a long-term strategy. The group agreed that perhaps an important next step would be to work with and educate DVC/PVCs (Education/Teaching and Learning), and members of Academic Boards.

Symposium 3

University of Sydney Monday 13 July
Attendance at the symposium at the University of Sydney was a follow up to the initial meeting with the team and working through the materials. The Sydney symposium was one of three state-based day-long sessions, which attracted approximately 40 people to each. The aims of the symposia were to develop networks of students and staff across Australia and Scotland, and to identify the next set of drivers in the area of Graduate Attributes.

A particular highlight of the symposium was the involvement and presentations by students, including the President of the Scottish Union of Students and Deputy of the European Union of Students, by video link. The student panel was particularly useful in highlighting the differences between formal and informal learning and teaching, and for me, more surprisingly, the differences between universities. In a similar vein of 'difference' the video presentation by Claire Carney – QAA Scotland *Graduates for the 21st Century,* presented a very different approach to QAA from what we have been used to in Australia. An approach well worth hearing, particularly in light of the talk later in the day by Jeanette Baird from AUQA where she discussed the role of Graduate Attributes from an AUQA perspective.

The six staff presentations after lunch were all interesting in their own particular way and each added to our understanding of Graduate Attributes and how they might be addressed in different universities, disciplines and contexts. These different approaches provided a useful benchmark for the panel discussion which followed. Ideas from the panel, which the GAP project might like to consider taking further, include:

- Considerable interest in teamwork – with a suggestion that there might be an ALTC project in team-work

- The scalability of the work done on Graduate Attributes

- Tracking Graduate Attributes across a whole program (degree) not just the course?

- The need to develop assessment criteria with the caveat that assessment does not necessarily mean 'marks'.

An interesting point for me from the discussion was the two quite different approaches from participants:

- One that we should be embedding Graduate Attributes in the curriculum

- The alternative being that what you learn and how you learn Graduate Attributes from outside the classroom should be more highly valued

In terms of meeting the aim of developing networks of academics across universities (and states), I thought that it was a very useful networking strategy of filling in a 'new idea' form and leaving for the team to attempt to link up others who are interested in similar topics. Similarly, there was a very good opportunity to share what is happening within the state (with participants) with the posters which were being taken from state to state.

Summary

In light of the aims of the project, particularly the variation in the project as it progressed, I consider that there have been some outstanding contributions made to our understanding of Graduate Attributes. However, my role has not been a summative one, but rather formative in nature and I consider that through the discussions held with the team some weeks prior to the state-based workshop, and my involvement at the workshop, the objectives of the evaluation has been achieved.

Margaret Kiley
The Australian National University
12 August 2009

APPENDIX 2: GAP ISSUES PAPERS

http://www.itl.usyd.edu.au/projects/nationalgap/resources/discussionpapers.htm