A toolkit to implement graduate attributes in geography curricula

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A toolkit to implement graduate attributes in geography curricula

Abstract

The article uses findings from a project on engagement with graduate outcomes across higher education institutions in New Zealand to produce a toolkit for implementing graduate attributes in geography curricula. Key tools include strong leadership, educational developers to facilitate conversations about graduate attributes and teaching towards them, ownership of the process by the teachers, the development of a contextualised set of graduate attributes for the geography degree, curriculum mapping to promote alignment between graduate attributes, learning outcomes and assessment tasks, the use of evaluative data to inform continual enhancements, and allowing at least five years for curriculum renewal to occur.

Keywords: graduate outcomes, graduate attributes, toolkit, practical, curriculum change

Introduction

While a focus on learning objectives began early last century in the United States, the global groundswell of neo-liberalism and related political/economic agendas with a concern for quality in the 1990s led to a focus on educational outcomes beyond the classroom. Since this time, the consideration of graduate outcomes has gained momentum throughout higher education systems in the United Kingdom, Europe, the United States and Australia. Thus, in several countries there has been a move to legislate the specification of graduate outcomes for university degrees, with the expectation these are embedded in curricula.

In this article, 'graduate outcomes' is used as an umbrella term to encompass graduate profiles (which may be at the institutional and/or programme levels) and graduate attributes (see Figure 1). As Figure 1 shows, the graduate profiles consist of sets of graduate attributes which typically include knowledge, skills and values. Bowden et al.'s (2000, p. 3) definition of graduate attributes is that they are:

> the qualities, skills and understandings a university community agrees its students should develop during their time at the institution. These attributes include but go beyond the disciplinary expertise or technical knowledge that has traditionally formed the core of most university courses. They are qualities that also prepare graduates as agents of social good in an unknown future.

Here we use the term 'graduate attribute' to refer to a specific outcome, quality or skill. However, as Hager (2006) argues, graduate attributes should not be viewed in an atomised

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way, but rather as interrelated and holistic. Consequently, some researchers prefer to use the term 'graduateness' to reflect this more holistic approach to the outcomes of a university education (e.g., Steur et al., 2012).

[Figure-1]

Despite there being a reasonably common language for graduate attributes, Barrie (2006) found that academics can hold very different conceptions of what these are; consequently teachers vary in their views on their role in fostering these attributes. In one conception generic graduate attributes were seen as basic 'precursory abilities' that students bring to university. Academics with this conception think that graduate attributes are a prerequisite for entry to university and will not teach towards them. Another conception is a 'complementary' conception, in which graduate attributes are seen as additional general functional abilities and personal skills that can usefully complement the discipline specific learning outcomes of a university education. Since these are viewed as complementary to the discipline specific learning outcomes, they are not taught within the mainstream curriculum. The next conception was a 'translation' one, in which academics understood generic attributes to be specialised variants of these general skills that are essential in applying discipline knowledge, thus allowing translation of university learning to unfamiliar settings. The final conception was an 'enabling' one, in which graduate attributes are seen as "enabling abilities and aptitudes that lie at the heart of scholarly learning and knowledge, with the potential to transform the knowledge they are part of and to support the creation of new knowledge and transform the individual" (Barrie, 2006, p224-225). Academics with the latter two conceptions – translation and enabling – will teach purposively to ensure students engage with the courses learning experiences and university experiences more widely to develop the graduate attributes (Barrie, 2006).

Many researchers have set about defining appropriate graduate attributes for geographers (e.g., Solem et al., 2008; Arrowsmith et al. 2011; Whalley et al., 2011; Hay, 2012; Spronken-Smith 2013; and Mager & Spronken-Smith, 2014). Common to several of these studies are notions of important knowledge for geography graduates – especially place, space, the environment and cross-cultural awareness – as well the ability to "analyze and synthesize complex environmental, economic, social and political information to enable a geographical understanding of humans, environments and the dynamic relationships between them" (Hay, 2012, p492). Geography-specific skills include spatial data analysis and geographical

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imagination, which involves understanding the world in an inherently spatial way, recognizing relations and variations in and between global and local processes (Whalley et al., 2012). Geographers have long been aware of the need for developing generic skills in geography curricula (e.g. see Healey, 1992). Such generic skills include critical thinking, problem-solving, cultural understanding, written, oral and visual presentation skills, time management, teamwork, information technology skills, and creative thinking. Moreover, many generic values are espoused for graduates such as life-long learning and ethical behaviour. Whalley et al., (2012) included acting in a sustainable way as a core attribute of 21st century geographers.

Although we have a good understanding of the types of graduate attributes we should be fostering in our students, what is less well understood is how we do this. Researchers from many disciplines have explored how to embed graduate attributes and geography is no exception. For example, Arrowsmith et al., (2011), Whalley et al., (2011); Spronken-Smith (2013); and Mager & Spronken-Smith (2014) have all discussed how we should teach undergraduates to nurture the range of graduate attributes. However, what is lacking from this literature is a systematic way to develop and embed graduate attributes in curricula – and not only in geography.

Consequently the aim of this article is to present a practical toolkit to help geographers develop and embed graduate attributes in their curricula. Before presenting the toolkit, the research informing the development of the toolkit is first described.

Our New Zealand study of engagement with graduate outcomes

As discussed above, there has been a lack of research on a framework for the implementation of graduate attributes, and this aspect was addressed in our New Zealand study of graduate attributes in higher education (Authors removed, 2013a). Our research used a mixed methods approach, with a survey of the level of engagement with graduate outcomes in higher education institutions across New Zealand (Authors removed., 2014). This was complemented by interviews with leaders of teaching and learning in eight institutions and then eight case studies were conducted of programme-level engagement with graduate attributes. The case studies involved surveys, interviews and focus groups with both academics and students. Data analyses included descriptive statistics for quantitative data, a Maturity Modelling approach (see Marshall & Mitchell, 2003) to assess the level of

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engagement at both the institutional (see Authors removed, 2014) and programme level, and Thomas's (2006) general inductive approach to analyse themes in the qualitative data.

A key outcome from our research was a framework for enabling engagement with graduate attributes (Figure 2). We identified five enablers for engagement with graduate attributes:

A) *External drivers* – forces to which institutions were required to respond or that they perceived they were responding, or should respond;

B) *Structural and procedural enablers* – those that facilitated staff and communities within an institution to become aware of, or work, towards, change in practice in regard to graduate attributes;

C) *Developmental enablers* – those that assisted staff/groups/departments to introduce and develop graduate attributes and embed them in curricula, or undertake some curriculum development;

D) *Achievement enablers* – those that were related to assisting students to achieve the graduate attributes;

E) *Contextual enablers* – generic institutional and/or individual cultural/affective qualities that crossed the four enablers described above and made them more or less effective.

[Figure-2]

As well as developing this framework, our research resulted in a full report (Authors removed, 2013a), a guide (Authors removed, 2013b), and three toolkits – for institutional managers, programme directors and heads of department, and for lecturers (Authors removed, 2013c-e; all available at: http://akoaotearoa.ac.nz/graduate-outcomes). In this article, the toolkit for programme directors and heads of departments is customised for geography leaders. The article continues by outlining the programme-level indicators of engagement with graduate attributes, the enablers of engagement with graduate attributes, and then presents key steps in implementing graduate attributes in geography programmes.

Programme-level indicators of engagement with graduate attributes

We identified six indicators for engagement with graduate attributes at the programme level:

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1. ***Planning for graduate attributes*:** All geography degree programmes should have a set of graduate attributes. These should be developed using stakeholders (e.g., students, academics, employers, alumni), and if there is a graduate profile for the institution, there is the need to articulate how the geography programme graduate profile links to it.

2. ***Explicit links between graduate attributes and learning outcomes*:** Typically this would mean having curriculum maps that make these links explicit. Note that not all geography courses/modules should address every graduate attribute; but across the programme most graduate attributes should be evident in learning outcomes (some may involve extra-curricular activities).

3. ***Explicit links between graduate attributes and assessment*:** Again this involves having curriculum maps that make these links explicit. Whilst most graduate attributes will be assessable, other more affective[1] attributes may not be readily assessed.

4. ***Staff awareness of graduate attributes***: All teaching staff should know what the graduate profile for their geography programme is and how the graduate attributes are embedded in courses. Moreover, they should know about educational and employment pathways for students.

5. ***Student awareness of graduate attributes:*** All students should know what the graduate profile is for their geography programme and how graduate attributes are progressively developed. Only providing written information about the graduate profile is unlikely to raise student awareness so other methods should be used. Students should also be aware of educational and employment pathways.

6. ***Monitoring of attainment of graduate attributes***: There should be mechanisms in place to monitor student attainment towards the graduate profile. This might involve periodic review, programme-level surveys, alumni surveys and employer feedback on graduates. Data gathered through monitoring should be fed back to programme coordinators in an evaluation cycle so that practice continues to improve.

(adapted from Authors removed, 2013d).

[1] Affective attributes include values and attitudes

Enabling engagement with graduate attributes in geography

Using the framework provided in Figure 2, a range of strategies have been developed to promote engagement with graduate attributes (Table 1). These strategies are discussed in more detail below under key steps in implementing graduate attributes in geography.

[Table-1]

Key steps for geography leaders to engage with graduate attributes

The key steps we identified on the pathway to a high level of engagement with graduate attributes are:

1. Deciding who is going to be responsible for driving curriculum renewal around graduate attributes
2. Developing contextualised graduate profiles for geography degrees
3. Gaining leverage from enablers of engagement with graduate attributes
    a. Drawing on external drivers
    b. Creating the context for curriculum renewal
    c. Ensuring enabling structures and processes are in place (note that curriculum mapping is a key procedural enabler)
    d. Ensuring developmental enablers are in operation
    e. Activating achievement enablers
4. Monitoring progress of embedding graduate attributes and using feedback to improve the learning experiences for students (Authors removed, 2013d).

Each step is considered in turn below.

1. Deciding who is responsible for driving curriculum renewal

It is important that any departmental or programme-wide geography curriculum renewal processes are instigated with strong support from the Head of Department and Programme Directors. Often working groups are delegated the responsibility for oversight of curriculum renewal, and ideally some senior members of the department should sit on this group. If an institution has an academic staff development unit, then an academic staff developer should

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also be on the group, since they can play a key role in facilitating conversations and providing guidance on best practice. Try to get representation from across the department/programme including academics and students. Ideally, all teaching staff would be involved in the group, since it is important for staff to have collective ownership of any changes to the curriculum. If this is not possible, it is very important that the working group regularly reports to full staff meetings and instigates opportunities for department-wide conversations about curriculum renewal.

2. Developing contextualised graduate profiles for geography programmes

A critical and somewhat time-consuming step in curriculum renewal is developing a contextualised graduate profile for the geography degree programme. Such profiles may be required by external audit agencies or funders and, as well as programmes having a graduate profile, educational and employment pathways should also be articulated. The contexualised graduate profiles should take account of institutional generic graduate attributes (if there are any), as well as external accreditation or professional body requirements and discipline-specific knowledge, skills and values. As discussed in the introduction, there is some literature that can assist in this step, since several researchers have identified appropriate graduate attributes for geographers.

In this process it is vital to include as many stakeholders as possible including academics, students, alumni and employers. Academic staff developers have particular expertise in facilitating conversations around desired graduate attributes and, being independent of the department, they can often mediate between staff members should any disputes occur (and they usually do!).

For early discussions about graduate attributes, it is often good to start with a clean slate, and put to one side any existing graduate profiles or requirements from external agencies. Typical questions to frame conversations about graduate attributes are:

- What knowledge must our graduates have of geography? In this discussion consideration should be given to threshold concepts[2] since these are known to be very important to student progression in a subject.

[2] 'Threshold concepts' were coined by Meyer and Land (2005), who said that "in certain disciplines there are 'conceptual gateways' or 'portals' that lead to a previously inaccessible, and initially perhaps 'troublesome', way of thinking about something" (p. 373). Being troublesome they can be difficult to learn, but once grasped

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- What geography-specific skills should they acquire?
- What generic skills should they acquire (e.g., critical thinking, communication, information literacy, numeracy, problem solving, etc.)? Is there a set of institutional generic attributes we are required to foster in our graduates? Can we be specific about what each generic attribute looks like in geography?
- What values should we foster in our students? Are there any values that the institution would like to see fostered? What about external agencies and the discipline of geography?

Once there is agreement on a core set of attributes, consider how these match institutional and external expectations, as well as any existing profiles (if applicable). Do extra attributes need to be added into the profile or are some redundant? Gaining views of students, alumni and stakeholders on the developing graduate profile is very important to ensure relevance.

3. Gaining leverage from enablers of engagement with graduate attributes

As noted above, we found five categories of enablers for engagement with graduate attributes, with strategies shown in Table 1. Below, we consider each in turn, discussing possible strategies.

Drawing on external drivers

Take advantage of external drivers where possible, as these are powerful enablers for engagement with graduate attributes. As geography is not a vocationally oriented programme, there is no mandate from accreditation processes, but professional bodies such as the Association of American Geographers[3], and the Royal Geographical Society[4], can have a strong influence. Stakeholders such as employers and alumni can also be powerful external drivers of curriculum renewal.

they are unlikely to be forgotten since they are irreversible and transformative as the concept is seen in a different way. See the 17th volume of *Planet* for several papers on threshold concepts in geography.

[3] For example see the 'Enhancing Departments and Graduate Education in Geography or EDGE Project' http://www.aag.org/galleries/education-files/EDGE_brochure_1.pdf

[4] For example see the brochure on 'Demand for geography' outlining skills sought by employers, http://www.rgs.org/NR/rdonlyres/1422E618-F932-4F20-9500-C9C605246076/0/Employabilitydemandforgeography_.pdf

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Creating the context for curriculum renewal

It is clear that academics will devote more time and energy to teaching if they perceive that teaching is valued within the department or programme. Thus heads of geography departments should endeavour to promote a culture that values teaching (see Author removed, 2014). Aspects of a vibrant teaching culture include a departmental focus on student learning, the promotion and recognition of courses that provide high-impact educational experiences (Kuh, 2008), giving graduate attributes a high profile and clearly communicating this to staff and students, being aware and supportive of the context in which academics teach, and providing positive feedback to staff engaged in teaching towards graduate attributes. Moreover, space should be made available to have department-wide discussions about graduate attributes and how to embed them.

Ensuring enabling structures and processes are in place

These are very important in the embedding of graduate attributes and these enablers should also have strong links to developmental enablers. The department and/or programme should have policies and plans that include graduate attributes. Ideally, the department will have an overarching teaching and learning strategic plan, and in this should be a goal and strategies for embedding graduate attributes across the curriculum. As well as policy, the department needs to have committee structures and procedures in place to ensure implementation of policy. To advance a graduate outcome agenda may mean changing the roles and/or procedures of existing departmental committees or it may mean the formation of a new committee or group. Ideally, as described above, a team-based approach to curriculum renewal should be promoted. It is important to have staff in this team who are familiar with both the regulatory and structural aspects of the qualifications.

Using curriculum mapping to embed graduate attributes

A key procedural enabler for embedding graduate attributes in curricula is curriculum mapping, which must involve a whole-of-programme approach (Barrie et al., 2009). This is a process whereby the desired graduate attributes for the qualification are linked to the learning outcomes and assessment in courses (e.g., see Harden, 2001). Various tools are available to assist in this mapping exercise. The hardest part of curriculum mapping is often articulating learning outcomes that link to the graduate profile, and this is where the assistance of an academic developer can be very valuable. Authors removed, (2013e) created a toolkit aimed at lecturers in which they provide links to tools which can assist academics to write learning

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outcomes.

Ensuring developmental enablers are in operation

Departments that have strongly embedded graduate attributes report the importance of academic developers in achieving this high-level engagement. Undertaking major curriculum renewal can be very unsettling for academics, particularly if their conceptions about teaching are being challenged. Thus having academic developers to facilitate conversations about curriculum renewal becomes very important and they can help guide programme teams through the process. In addition, academic developers can provide tools for curriculum mapping and work with groups of academics to develop learning outcomes for courses.

Other developmental enablers include champions within the department (those academics who are enthusiastic and well informed about pedagogy); and the involvement of as many staff as possible in curriculum renewal in order to foster ownership of the process. Some staff may be skeptical about the benefits of curriculum renewal; however, our research has shown teaching benefits such as improved efficiency, greater collegiality and the adoption of more student-centred approaches (Authors removed, 2013a).

Another major developmental enabler is that of time. It is vital to allow one or two years of planning and then several years of implementation for curriculum renewal to occur, particularly if geography programmes are undertaking major revisions to courses.

Activating achievement enablers

These are the enablers that help students achieve the desired graduate attributes. It is important to have educational and employment pathways clearly articulated for students. However, just having these pathways in a handbook or website is unlikely to be enough; instead, invite alumni and employers to talk about industry jobs, and encourage these visitors to make explicit why they value particular attributes. Moreover, invite graduate students to share their perspectives on future study, and get them to articulate which attributes are valuable for further educational pathways. Another strong enabler is contemporary and flexible delivery methods, and ensuring that curricula are focused on students. If the curriculum is designed around graduate attributes, this is a great start. Ensure that there are strong links between employment, graduate attributes, learning outcomes and assessment and make these links explicit to students. Progressively scaffold the development of skills so that graduates become more competent through their study. Try to use high-impact educational

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experiences (see Kuh, 2008), as well as signature pedagogies[5], since these are likely to develop a range of desirable graduate attributes. Some departments help students to track their attainment of graduate attributes through an ePortfolio framework or by personal advising and mentoring of students. Croot and Gedye (2006) provide some excellent guidance for geography students to undertake a process of personal development planning.

4. Monitoring of attainment of graduate attributes

It is apparent that while many departments and programmes plan for, teach and assess graduate attributes in their programmes, the monitoring of them is given less consideration. Bath et al. (2004) emphasise the need for academics to engage critically in planning, acting, reviewing and reflecting on how graduate attributes are incorporated in the curriculum. Thus, student development needs to be tracked to see if graduates are in fact achieving the desired graduate attributes. Monitoring may be via periodic review, graduate opinion surveys, and alumni and employer surveys. Ideally longitudinal monitoring should also occur, to track graduates well beyond their time in the academy. As with any evaluative process, the results of the surveys should be fed back to staff and students, and used to improve the learning experiences for the students.

Conclusions

The aim of this article was to present a practical toolkit, aimed to assist geography leaders to implement graduate attributes in their geography programmes. The toolkit was generated through findings from a national project exploring engagement with graduate outcomes in higher education institutions across New Zealand.

The process of embedding graduate attributes in degree programmes is a substantial undertaking since it typically involves major curriculum renewal. This toolkit has outlined some considerations for geography leaders to assist them overseeing the process. The focus of curriculum renewal should be seen as a means to improve student learning, not driven by compliance. Any curriculum renewal processes to embed graduate attributes should include:

- strong leadership at the departmental and programme levels

[5] Shulman (2005, p52) created the term 'signature pedagogies', which he argued are characteristic or 'signature' ways of teaching that "organize the fundamental ways in which future practitioners are educated for their new professions". He gave the example of medicine, with bedside teaching, or law with its Socratic method.

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- the assistance of academic staff developers in facilitating conversations about graduate attributes and teaching towards them
- ownership of the process by the teaching staff, i.e. as many teaching staff as possible should be directly involved in curriculum renewal
- the development of a contextualised graduate profile for the programme. Ideally students and other stakeholders should be involved in developing this profile
- a focus on generating learning outcomes and assessment well aligned with the graduate profile. Curriculum mapping tools provide a useful resource for this, especially under the guidance of an academic staff developer
- the collection of, and action on, evaluative data to inform the continual enhancement of the curriculum
- allowing at least a couple of years for curriculum renewal to occur.

Other generic toolkits are available to assist in the process of curriculum renewal: a toolkit for institutions (Authors removed, 2013c) and one for lecturers (Authors removed, 2013e). Future research should evaluate the usefulness of these toolkits, and whether the framework for enablers of engagement with graduate attributes has indeed captured the necessary elements.

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Table 1: Strategies to promote embedding graduate attributes in geography curricula (adapted from Authors removed, 2013b). Note that these strategies for each enabler are discussed in detail in the next section.

Enablers	**Programme – what helps embed graduate attributes in geography programmes?**
External – forces to which institutions were required to respond or perceived they were responding, or should respond	• Mandate from audit and quality processes and professional bodies • Stakeholder involvement in developing graduate attributes (employers, alumni, students) • Using geography alumni to help with programme quality
Structural and procedural – those that facilitated or engaged staff and communities within the institution to become aware of, or work towards, change in practice in regard to graduate attributes	• Supportive middle managers responsible for teaching and learning • Promoting a team focus to curriculum development • Having designated authority to implement policy • Having people familiar with regulatory and structural aspects of qualifications • Developing programme graduate profiles – graduate attributes need to be contextualised • Requiring clear links between the programme graduate profile (i.e. set of attributes), and the institutional graduate profile (if there is one) • Requiring strong links between graduate attributes, learning outcomes and assessment (curriculum mapping)
Developmental – those that assisted staff/groups/departments to introduce and develop graduate attributes and embed them in curricula, or undertake some curriculum development	• Translation or enabling beliefs about the role of graduate attributes and teaching and learning • Champions • Recognition and support for the role of the discipline in developing/embedding graduate attributes • Recognising and supporting staff ownership of their programme • Engaging all staff in curriculum renewal • Valuing programme staff input • Provision of academic development support for the process and particularly for developing learning outcomes • Provision of teaching resources and planning tools such as curriculum mapping • Instigating formal and informal conversations about teaching and curriculum • Having good communication of the process and outcomes • Emphasising that improved efficiency will result

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Achievement – those that were related to assisting students to achieve the graduate attributes	• Having clear educational and employment pathways • Using contemporary/flexible delivery methods • Ensuring curricula focus on students • Having strong links between graduate attributes, learning outcomes and assessment • Scaffolding of skills – to gradually develop graduate attributes • Including high impact educational experiences (*e.g.* service learning, inquiry; see Kuh, 2008) • Requiring ePortolios or similar • Involvement of students in developing graduate attributes
Contextual – generic institutional and/or individual cultural/affective qualities that crossed other enablers and made them more or less effective	• High staff morale • Good communication • A departmental culture that focuses on teaching • Creating time and space for discussions for curriculum renewal • Having an alertness to the context of lecturers

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Figure captions

Figure 1: Definitions of graduate outcomes, profiles and attributes that we adopt in this report (Authors removed., 2014). Note: 'Graduate outcomes' is used as an umbrella term to encompass graduate profiles, which in turn encompass sets of graduate attributes, consisting of knowledge, skills and values. The number and nature of graduate attributes will vary between institutions and programmes.

Figure 2: Conceptual framework of enablers for engagement with a graduate outcome agenda (Authors removed., 2014).

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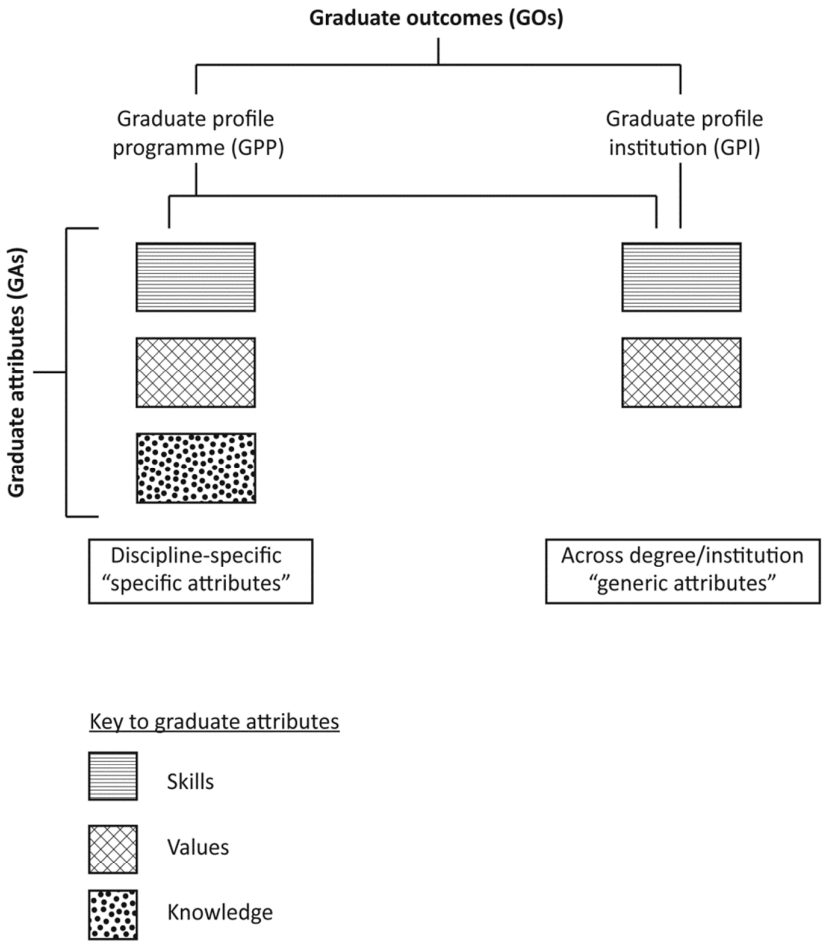

Figure 1

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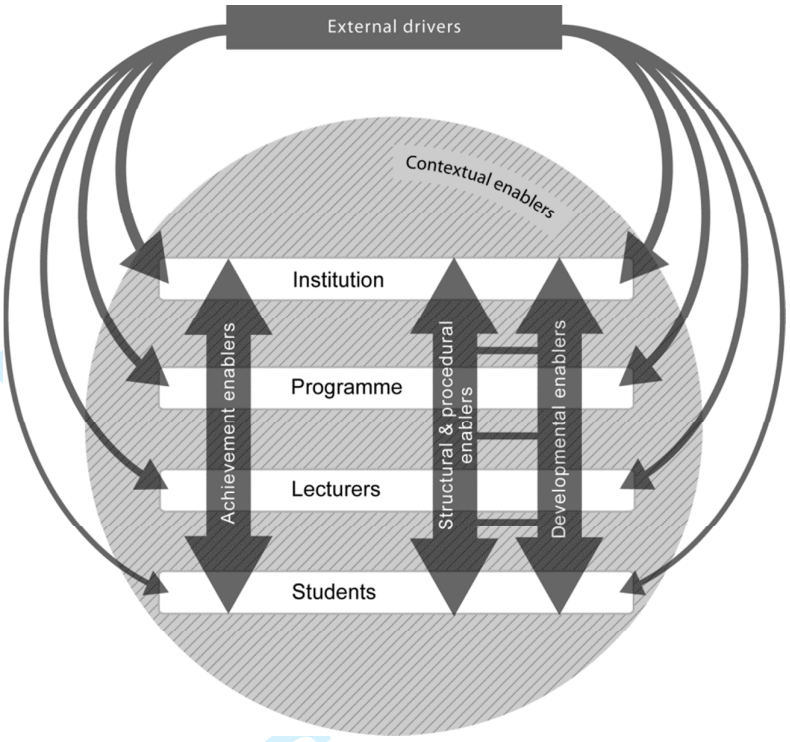

Figure 2

For Review Only