A dialogic framework for embedding graduate attributes in discipline-based degree curricula

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Submitted 12 March 2012; accepted in final form 10 June 2012

Abstract

The starting point of this paper is the understanding that to date, attempts to integrate graduate attributes in academic curricula continue to form lists of isolated skills, with no clear rationale explaining how they are embedded or, indeed, illustrating how they interact with one another to enhance students' learning experiences. While most studies agree that the desired change requires a shift in the curriculum from its predominant focus on content to one that integrates content with process, it is argued here that this refocusing requires a methodology which begins with pedagogy and, therefore, with clear statements regarding the process of knowledge construction that academic curricula support and see as good practice. This objective is in alignment with the understanding that graduate attributes concern themselves with educating students to live in a knowledge society, i.e. with the process of educating. This paper describes a proposal for one such methodology.

Keywords: *graduate attributes, graduate capabilities, dialogic learning, dialogic curriculum*

1. Introduction

In Australia or overseas, universities increasingly engage in reconstructing their role as leaders of change, innovation and education (Bradley, Noonan, Nugent, & Scales, 2008; Ourairat, 2011; Boonprasert, 2010). As part of this task, high on the agenda of universities in Australia has been evaluation of their teaching programs and explicating those in terms of graduate attributes, commonly accepted as "orienting statements of education outcomes" formulated in order to inform curriculum design and the provision of learning experiences at a university (Barrie, Hughes & Smith, 2009, p. 1). Graduate attributes are derived from the Employability Skills Framework (Department of Education, Science and Training, 2005) and, typically, refer to the following qualities: critical thinking, professional expertise, intellectual curiosity, problem-solving, independent thought, creativity, ethical practice, integrity, communication, teamwork, self-management, planning and organising, technology skills, life-long learning, initiative and enterprise (Oliver, Jones, Tucker & Ferns, 2007, p. 1).

However, the challenge of linking graduate attributes to curriculum as well as to teaching and learning renewal continues. Oliver (2010) summarises the key problem of this challenge when calling for studies to take a broader view on the concept of competencies which guide universities' teaching and to resist the temptation of reducing this concept to "lists of skills" (p. 15). In other reports, Oliver (2011a, 2011b) urges for a change of focus, away from spending "countless hours aligning outcomes, assessments and experiences" (p. 6). Instead, Oliver argues for studies focusing on the **accountability** of the frameworks in which these efforts are articulated and implemented: "A most pressing challenge is to find increasingly rich and transparent ways of warranting graduate achievements, and at the same time ensure that graduates themselves are assured of their capabilities" (p. 6.). In here, Oliver specifies the focus of the embedding methodology: it is not only that universities need to be assured that the process warrants change, but also that students are aware of the skills they develop. Or, as Lian (1993) puts it, "students should be able to feel that they are making progress while in fact making progress" (Achievement section, para 9).

As Green, Hammer and Star (2009, p. 18) remind us, the roots of the curriculum renewal agenda, of which the focus on graduate attributes is at least a partial manifestation, emerge from a longstanding critique by educators and sociologists of the Western educational system, shown to be prone to serve, when not engaged in critical self-reflection, the reproduction of dominant forms of power and capital to the detriment of creativity, inclusivity (Albright & Luke, 2008; Bourdieu, 1977,

DOI : 10.14456/rjas.2012.1

1984) and, indeed, transformation of "relations of cultural, social and political power" (Luke & Dooley, 2011, p. 1). This paper is embedded in the tradition of this critique, as it attempts to offer a rationale for a different approach to graduate attributes. The proposed rationale breaks with the traditional methods which view curriculum "as a linear sequence of content blocks" (Barrie, Hughes, & Smith, 2009, p. 14), and which "[deconstruct] learning into skill sets that [do] not realistically represent how students actually think, act, solve problems, engage questions, take risks, propose new ways of looking at a problem, create an original work, or design research" (Maki, 2009, p. 15).

In the methodology that will be proposed, the key question of the curriculum designer is not "[w]hat are these things that universities call generic attributes", or "what combination of skills, attributes and knowledge should be included on the graduate 'shopping list'" (Barrie, 2006, p. 215). Instead, the aim is to locate the attributes in a matrix of a process of knowledge construction that takes account of "how [students] integrate knowledge, abilities, habits of mind, ways of thinking and problem solving" (Maki, 2009, p. 15). In this way the model, helps refocus teaching away from a model of "transmission of factual content" that continues in Australian universities "despite the rhetoric of graduate attributes policy and despite the espoused claims of statements of course learning outcomes" (Barrie et al., 2009, p. 7).

The sections which follow propose a model that supports this change of focus, together with the methodology for its development and pedagogic implications. Different ways of working with the model will be reported on shortly at the Australian Qualitative Research Conference 2012, Darwin. The value of the model that is presented here is not so much in that it helps eliminate transmission models. Rather, its relevance is in providing an alternative to the current approaches to graduate attributes. It achieves this by refocusing the methodology for integrating of graduate attributes in academic curricula away from their current role as "**orienting**" the curriculum (Barrie et al., 2009, p. 1) toward **supporting** the pedagogic process that the curriculum explicates. This refocusing instantly orients the graduate attributes agenda and research back on pedagogy, which is exactly the intention of this article. This re-focusing would certainly help shift the perception among Australian academic staff of this curriculum renewal reflecting "merely a narrow 'managerialist' agenda" (Star & Hammer, 2008, p. 241), rather than a pedagogic, i.e. intellectual, change.

This paper is not the only one advocating change in this direction: "The irony here is that while the graduate skills agenda focuses attention on outcomes, it has also 'opened up a particularly interesting pedagogical space' […], which requires a careful exploration of procedure or process" (Green et al., p. 22).

2. Dialogic process of knowledge construction

The participatory role that Australian universities expect their graduates to play in the 21st century (Department of Education, Science and Training, 2005; Young, 2011), engaged as participants, rather than "pliable peons in the global market place" (Tomlinson, 2006, p. 57) implies a very specific approach to the concept of knowledge, one which is sourced in dialogue and which gives rise to dialogue.

Calhoun (1995) describes this kind of participatory approach as a "conversation in which the construction of new understandings is continual" (p. 11), "enabling us to ask new and different sorts of questions" (p. 7). As Calhoun explains, at stake in these "conversations" is not the production of "timeless and perspective less truths", speaking "from the umpire's chair" (p. 11), where interlocutors "move simply from false propositions to true ones" (p. 7), "claim[ing] – like Sherlock Holmes – to be working with "nothing but the facts" (p. 5). Rather, it is the construction of related perspectives, "highly contentful theories which must be subject to a continual play of interpretation" (p. 91), each "self-conscious about its historicity, its place in a dialogue and among cultures, its irreducibility to facts, and its engagement in the practical world" (p. 11). In this sense, "[o]ur hypotheses, therefore, should not be accorded predictive value in relation to reality, but strategic value in relation to the question raised" (Lyotard, 1984, p. 7).

3. Integrating the dialogic process of knowledge construction into curriculum

The dialogic and situated qualities of knowledge described above imply a process of its construction which is historically located and an object of change, embedded in interactions seeking to relate rival perspectives in order to construct the points from which positions, or possibilities, become more perceptible (Hobson, 1998, p. 24).

Calhoun (1995) describes this construction process as originating in the perception of conflict, generated when attempting to "connect widely different phenomena" (Latour, 1999, Good and bad generalizations section, para. 2), and resulting in reorganisation of the initial assumptions by "discovering [their] limits rather than affirming [their] possibilities" (Calhoun, p. 13).

It is this emphasis on the discovery of limits that differentiates a dialogic model of knowledge construction from models which do not challenge the terms on which they build their concepts and in so doing, are oriented toward knowledge reproduction, ultimately resulting in "conversion" (Popper, 2002, pp. 45-46). Against this background, a dialogic process of knowledge construction can be thought of as comprising of three distinct stages:

(a) **Exploration** of the terms and beliefs that frame questions and, therefore, their assumptions;

(b) **Expansion** of those terms by opening up the space of the inquiry to alternative considerations;

(c) **Evaluation** of the explanatory potential that different terms, and their combinations, bring on the initial question and therefore on the initial assumptions in which it was framed.

To return to Calhoun (1995), as a result of the above, new and different sorts of questions can be asked (p.7). This kind of methodology has been eloquently expressed by Latour (2002) when describing the qualities of a critic, "The critic is not the one who debunks, but the one who assembles". […] [It is one who constructs] a multifarious inquiry launched with the tools of anthropology, philosophy, metaphysics, history, sociology to detect how many participants are gathered in a thing to make it exist and to maintain its existence" (Conclusion section, para. 12.). In another work, Latour (1999) describes this methodology as one which generates articulate knowledge, "[in] an articulate model, scientific laboratory will say "A is B, is C, is D", engaging what a thing is in the fate or destiny of many other things as well" (Scientific Means Interesting section, para. 1). He opposes this to tautological methods, producing redundant expressions saying that, ""A is A", that is, repeating the same expression twice" (Latour, 1999, Scientific Means Interesting section, para. 1).

The emphasis on the **problems** of a discipline, rather than its content, is at the core of a dialogical model. In a dialogic model, a discipline is constructed in terms of questions that it asks. As conceptual paradigms expand, so do the terms in which these questions are framed and explanatory potentials established. This essence is reflected in Figure 1. The strategic steps of exploration, expansion and evaluation help to orient the design of curricula around disciplinary problems by centering the design on the process of knowledge construction. The role of curricular activities is to support this process, not to teach content.

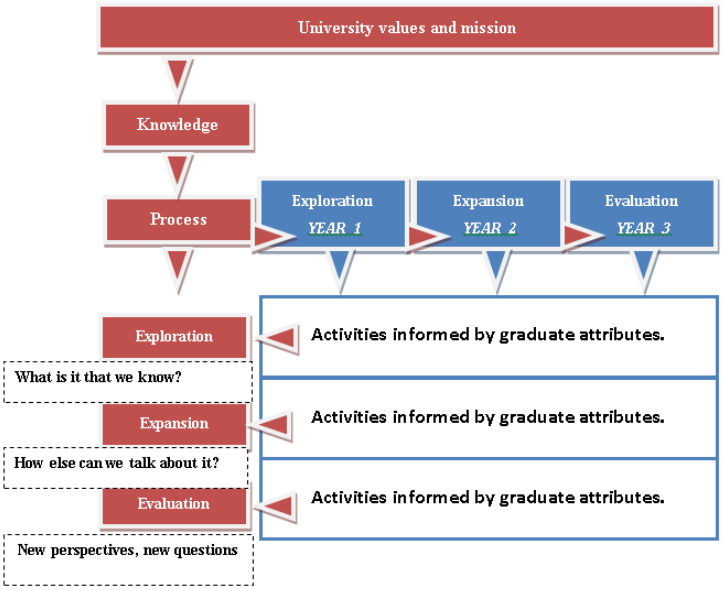

Figure 1 A conceptual framework for embedding graduate attributes in academic curricula

While Figure 1 is constructed around a very linear model of knowledge construction, as students go about solving problems, they may oscillate between the stages, in order to check for consistencies. This aspect of the model is explained in the later sections which deal with the practical aspects of the model at the level of unit/course design. For now, it is important to indicate that in Figure 1, the task of the designer is not which content to cover, but more importantly, which tools to use in order to assist students in their engagement with each of the respective phases of the curriculum. The later sections will also show how this change of focus can assist teachers and students as a diagnostic tool, with each party evaluating their own engagement in the unit, from the perspective of the quality of teaching and learning, respectively.

As Figure 1 shows, the dialogic phases of the process of knowledge construction also can inform the design of a course sequence. That is, each of the years in the progression sequence of a specific course/program can choose a different focus of the model. YEAR 1 can focus teaching and students' projects on the EXPLORATION of the terms in which a specific field of inquiry/discipline frames its questions. Table 1 in the sections below exemplifies a unit designed with this objective in mind. YEAR 2 units can frame their objectives around the objective of EXPANSION. In other words, teaching and students' learning projects can focus on a methodology which assists in opening up the space of the inquiry to alternative terms and consideration which may allow framing problems in different terms, thus opening up paths to new perspectives and new possibilities. In the field of TESOL, as one possible example, this would be a very desirable direction, taking the field away from its long-term preoccupation with grammar and vocabulary, toward other forms of knowledge, which have the potential to enrich the terms in which the needs of ESL students are interpreted and then addressed. Examples of such fields could include genre studies (e.g. Freadman, 2004), where genre can be approached as a tool for engaging ESL students' own cultural frames of references as resources in their second language learning. Genre-based methods of analysis can also be used for analysing the practices of ESL teaching (e.g. Kapitzke, 1995). Other fields that would make desirable candidates for inclusion in TESOL research include brain studies, which can then be linked to a multitude of areas of concern to TESOL. All these are still largely under-represented in the fields of TESOL and Second Language Teaching. In turn, YEAR 3, teaching can engage students in a more hands-on work, by involving them in experiments, allowing them to EVALUATE the enabling potential that different terms and their varied combinations help open up. TESOL as a field would surely benefit from this approach to teacher education.

In the above description, the progression sequence is constructed in terms of objectives sourced in the process of knowledge construction which is embedded in the philosophy of inquiry. The model therefore offers a principled strategy/process for relating units and their outcomes. This is very different from the conventional models where graduate attributes refer to an array of dispositions which are then stratified in reference to arbitrarily defined, self-referentially constructed, scales of difficulty. For example, in Table 1, progression is related to arbitrarily constructed concepts such as *basic*, *moderate*, or *comprehensive* and to qualifies like: *clarity*, *cohesion*, *logic*, *structure*, *analysis*, *relevance*. Without a clear reference to a process that would contextualise these qualities, it is not clear why these qualities are explicated in the first place or why the students would produce text with a "limited range of basic writing concepts" (Centre for the Advancement of Teaching and Learning, CATL, 2010). Similar issues are shown in Appendix 1, Figure 1 (CDDU, 2010) where neither of the achievement targets is related to any external structure/criteria that would legitimise their internal logic and pedagogic relevance.

Table 1 An extract from the University of Western Australia Communications Skills Framework (Formatting adapted, our underlining) (CATL, 2010)

Dimension	Beginning	Developing	Advanced	Professional
Students demonstrate writing that is clear, well-structured and appropriate to audience and purpose	Demonstrate and reflect on a limited range of basic writing concepts and skills within an area of study with extensive structured guidance	Demonstrate and reflect on a moderate range of competent writing concepts and skills within an area of study with limited structured guidance	Demonstrate and reflect on an extensive range of advanced writing concepts and skills within and beyond the area of study with little or no structured guidance.	Demonstrate and reflect on a comprehensive range of professional writing concepts and skills in professional contexts with no structured guidance

4. Integrating graduate attributes in a dialogic curriculum

In a dialogic curriculum, the role of graduate attributes is to support the dialogue between the student and the demands of the respective phases of the process of knowledge construction. From the student's perspective, the better this dialogue is supported, the more interactive is their learning environment. To this end, graduate attributes provide the curriculum designer with intentions, or points of focus, for activities and tools that make students' learning interactive, meaningful and informative.

The role of graduate attributes in this process cannot be underestimated. If well-defined and integrated, they help make the curriculum responsive to students' learning needs. Therefore, it is not only the embedding of graduate attributes that needs resolving, but also the intentions that guide their selection and, therefore, the impact that they are expected to have on students' learning.

To compare, the discussion below focuses on a number of aspects of working with graduate attributes in the model proposed in this paper. One of the graduate attributes included is that of Communication. As shown in Appendix 1 Figure 2, the intentions of this attribute were derived from the theoretical work of Freadman (1994). In the context of language teaching, she describes communication as the capacity to "imagine and effect active intervention" (p. 21). She describes culturally competent students as able to "assert their authority over a discursive situation" and opposes it to environments that teach students "to bow to the law of a language which they may never master: their errors and the restrictions on linguistic scope that define them as students will always leave them in a position of non-mastery vis-à-vis their interlocutors" (p. 21).

Following Freadman, the pedagogic intention of the graduate attribute of Communication was defined as concerning itself with challenging the belief systems or ideas which inform how they "imagine and effect active intervention in the situations that affect them" (Freadman, 1994, p. 21). The focus on challenge helps focus activities and tools of a curriculum, in each aspect of the process of knowledge construction, on conditions enabling students to compare and contrast effects of different aspects and forms of communication which they engage or select to do so. This methodology is consistent with the process of knowledge construction described above and very different from pedagogic strategies which assumes that they can result in learning by offering information.

This conceptualisation of the Communication attribute, and therefore its method of integration in the curriculum, is very different from more conventional approaches to curriculum. For example, Oliver (2011b) in a quick list of attributes distinguishes between Written Communication and Oral Communication (Fifteen Templates Available slide). It is arguable that these are not the only literacy practices that will test students' capacity to generate effective intervention in their professional lives. The situated aspect of communication is not reflected on the slide. This approach is likely to result in a curriculum which itemizes learning and where attributes do not serve the learning process but, instead, they form isolated learning tasks, each for their own sake.

When describing the attribute of Communication, Victoria University (Australia) defines it as the capability to "communicate in a variety of contexts and modes" (The VU graduate capabilities policy, 2008, p. 8). However, defining communication as an ability to communicate does not help in unpacking the concept itself, nor does it offer criteria for evaluating effectiveness of curricular activities. The definition is wholly circular.

The main point of this section is that the definitions of attributes, when constructed intuitively, with no explicit or argued reference to concepts and models developed by academia, are unable to offer a focus for guiding academic faculty and curriculum developers in designing activities that support students' learning. It may be that these definitions never were developed for that purpose. However, as shown in the earlier section, in the absence of any external structure to validate the internal logic of the progression scales which they describe, their contribution to the curriculum is doubtful. It may be quite illusory to seek to have neutral objectives and neutral assessment processes. And every time such neutral concepts are created artificially, they are accepted by consensus and a priori beliefs rather than critical intellectual review:

> Ten geographers who think the world is flat will tend to reinforce each other's errors. If they have a private dialect in which to do this, it becomes impossible for outsiders to disagree with them. (Saul, 1996, p. 476)

Further, once conceptual boundaries are developed between the learning process that graduate attributes are to support and the intentions guiding the development of learning activities, research can then explore the different forms of support in order to enrich the interactivity of learning environments in each phase of the learning process. In this way, a framework for linking graduate attributes with the curriculum renewal agenda and pedagogic research would be established in manner that gives direction to all involved, including students. The next sections deal with this aspect of curriculum.

5. Dialogic curriculum in practice

In order to visualise how the proposed framework would look from the students' perspective, a hypothetical example taken from a TESOL Methods unit is explored in this section. First, the methodology of the dialogic process of knowledge construction proposed in this paper is illustrated, as it would inform students' projects and assignments. Second, it will be shown how this method of work could be supported by the unit. A hypothetical unit outline will be constructed, assignment tasks will be described, the focus of each phase of the process of knowledge construction will be given together with the activities developed from the pedagogic intentions informing graduate attributes. Third, the framework will be shown as a diagnostic tool that can be used by the students to support their learning. Alternatively, teachers can use the model as an evaluation tool of their own teaching strategies.

6. The dialogic model of knowledge construction in a student's inquiry

As pointed out earlier, while Figure 1 shows a linear model of knowledge construction, the process itself is never linear, as students will shift between stages when needed. The steps below will illustrate a hypothetical process of inquiry that this model supports and will exemplify how this form of shifting may occur. The aim is to show the model at work and to illustrate its critical potential.

In this hypothetical TESOL Methods unit, a student may decide to investigate the belief systems that form the barriers to teacher engagement with technology in a specific ESL placement school (where pre-service teachers have their practicum). Potentially, these belief systems may include a range of conditions. The following processes can take place:

(a) **Exploration** - In order to focus the question, the student may begin by investigating the belief systems that make the student himself or herself feel convinced as to the value of technology in an ESL context. These explorations will be further expanded as a result of the student's engagement in the unit/course. The outcome of these explorations will be a framework outlining concepts and concerns relevant to TESOL pedagogy. They will provide the student with principled criteria for understanding and evaluating teaching.

(b) **Expansion** – Bearing in mind that the student is not allowed to interview teachers due to ethical considerations, the student, instead, may engage in a reflective review of the teaching practices at the school. He or she may do so in relation to the principles developed in the earlier phase. The student may engage in an exploration of literature, and may contact relevant people, in order to expand the terms of his or her analysis. The student will compare and contrast his or her initial model against the principles revealed in the course of the review process.

(c) **Evaluation** - It is quite possible that the analysis will show that the teachers do meet some of the criteria against which the student compared their teaching strategies. However, the question still would remain as to the reasons why the teachers cannot see the value of technology to the extent that the same extent as the student.

(d) **Expansion** – To learn more, the student may need to return to the expansion phase in order to explore other factors. One of them could be the training materials distributed to teachers in the course of numerous professional development workshops. The student may engage in exploring the frameworks and concepts in which technology is presented in those materials.

(e) **Evaluation** – The student may resolve that technology tends to be presented

> at the level of technique or a "good idea", and less time is given to examining the role that technology can play in addressing to the intellectual concerns of TESOL and the concepts in which these concerns are framed. While a project of this kind may not change the landscape of the field of TESOL, nor may it point to the correct cause, it will produce some valuable insights, one of them being the need for higher order thinking by pedagogues and teacher trainers.

The above example does not imply that the teacher was teaching or supervising a single student. In fact, as said earlier, the student undertook this research in an ordinary TESOL methods unit. Table 2 shows the unit outline of this hypothetical subject. On its inspection, it becomes evident that the unit is not organised according to any specific content, but around the respective phases of the process of knowledge construction.

For each phase, it was critical to establish its focus in relation to the overall expectations of the unit. Broadly, these can be summarised as enabling students to engage in the unit from three different perspectives: as pre-service teachers, teacher trainers and educational leaders. The aim was for pre-service teachers to develop a three-dimensional understanding of the key issues of the field and to position pre-service teachers as active participants shaping the landscape of the profession.

Each phase of the unit is aligned with an appropriate assignment task. The activities are developed from graduate attributes and are always constructed around a specific purpose. This is important, as the feature of purpose allows the curriculum designer to determine relationships between activities. This is important since the relevance of one kind of activity or skill is perceptible only when engaged in, or integrated with, other activities (skills).

For example, when examining the structure of the Exploration phase, the purpose of the activity developed from the graduate attribute of Collaboration (COLL) (Appendix 1 Figure 2) is to assist students in exploring its challenges and to enable team work to function as a context offering support and nurturing creativity. However, students are unlikely to develop these skills just from watching video tutorials about team work. This skill needs to be put 'in play'. In other words, students are more likely to understand the demands and the potential of this skill, when they engage it in the context of various activities; when they engage it dialogically by identifying and evaluating its different aspects, while, at the same time, learning about other skills. In Table 2, in the Exploration phase, this is achieved with the help of different activities, each offering different aspects and challenges, depending on its focus. For example, the activities developed from the graduate attribute of ICT provide students with communication facilities that allow them to explore the effectiveness of these tools in different contexts of team work. In yet another activity, students are given access to a multitude of online ESL resources. When explored in teams, evaluation of these resources can engage greater levels of creativity. However, it will also engage skills like Critical Thinking and Professional Expertise (Appendix 1 Figure 2). The point here is that successful engagement of an attribute in the curriculum will depend on the designer's capability to engage its objectives with the objectives of other attributes. This interaction needs to be facilitated for students to engage critically in curricular activities. The dialogic model of knowledge construction, with its three distinct phases, helps focus these interactions and, in so doing, supports students in reorganising the understandings that they construct about what is possible, why it is possible and how.

The strategy of constructing activities around a precise purpose is informed by the field of semiotics which views social behaviour as goal directed (Wertsch, 1985, pp. 207-208). These goals are considered to emerge from social interactions and are realised in the appropriation of socio-historically embedded mediational means (Engeström 1999). The interactions listed in the unit outline assist students in exploring the relevance of the various "mediational means" to their own development as ESL teachers.

Furthermore, the relational linking of activities and, therefore, of the graduate attributes from which they are developed is based on the understandings that meaning is constructed relationally (Freadman, 2004). Latour (1999) explained this in relation to science by opposing tautological and articulate models of scientific inquiry. Minsky (1981) applied this understanding in cognitive science when saying that to understand [anything], it is to "have several different ways to represent it […], if I understood something just one way, I would not

understand it at all" (Sonata as Teaching Machine section, para 5). In Vygotsky, meaning is considered as an act of construction of texts in relation to other texts (Smagorinsky, 2009). This is why graduate attributes in and of themselves have no meaning, as meaning is always inferred from other texts. No descriptors alone can assist, or help capture, the process of their learning. Therefore, their dialogic (not linear) embedding in the curricula is critical.

The goal-oriented quality of social behaviour and the relational basis of meaning-making offer critically informed principles for this dialogic embedding. This puts to an end contemplations regarding what to include in the "graduate 'shopping list'" (Barrie, 2006, p. 215). Instead, the content of this list will depend on the critically explored demands of a specific unit or an entire course/program, not ad hoc decisions.

Table 2 A unit outline organised around the dialogic model of knowledge construction

Process	Activities
Exploration Phase In this phase, the focus is on supporting students in their exploration of the terms in which they frame their projects and assess their relevance to TESOL pedagogy. E.g. Identifying the relevance of terms like diversity, inclusion and learner-centredness to TESOL pedagogy and curricula. Examining various ESL resources and their repositories. Exploration of ideas and activities suitable to support expansion of intercultural frames of reference of ESL students.	**Assessment Task 1**: Identify a task that you will undertake in the course of this unit that relates to TESOL pedagogy. Establish the terms which will guide your understanding of that task and its relevance to TESOL pedagogy. Explicate these terms by linking the objectives that your task will attempt to meet to the relevant concepts and concerns of the field (e.g. diversity, inclusion, and learner-centredness). **Examples of the unit's activities informed by graduate attributes** COLL: Students work in mixed groups. Tutorials are made available for students to explore techniques of team work. This is to assist them in exploring its framework as a context of support and creativity. ICT: Various communication facilities are made available. Tutorials are made available for students. This is to allow students to explore the potential of those tools in the context of their collaboration. ICT: ICT applications, tutorials, repositories of online ESL resources are made available to engage students' creativity and assist them in their critical appropriation and creative use. PE/CT: Class meetings (lectures) and online materials help students explore the relevance of the ideas which they engage in reference to concepts, terms and objectives in which these are ideas are embedded. The aim is for students to develop their own intellectual frameworks that will inform their pedagogic judgment. IA: Concepts of diversity, inclusion and learner-centredness are explored to assist students in approaching the design and the rationale of their projects in a culturally sensitive manner. COMM: A formal academic text is chosen for students to explore its features and potential as a communication tool. IL: Multimodal tutorials are made available to assist students in constructing academic texts. The tutorials exemplify the organisation of academic texts and the relevance of structured organisation to the overall purpose of academic texts which is to reflect the critical process of the researcher's inquiry.
Expansion Phase In this phase, the focus is on supporting students in developing critical tools of analysis E.g. Developing a historical perspective on TESOL pedagogy and assessment. A critical examination of the history of TESOL concepts in relation to the principles of diversity, inclusion and learner-centredness.	**Assessment Task 2**: As a teacher educator, you need to describe your project to TESOL teachers who will one day want to use it or create a project of their own. To this end, produce a "user manual". In this manual, identify the strategies which informed the design and the development of your project against the principles which formed its intellectual framework described in Assessment Task 1. In order for teachers to understand the value of your project, position your strategies against an alternative model or models of practice. Compare and contrast the frameworks.

	Examples of the unit's activities informed by graduate attributes COMM: The genre of a "teacher manual" is chosen for students to explore its features and potential as a communication tool. IL: Tools are made available to assist students in exploring the features of the genre of the "teacher manual". LLL: The genre of the "teacher manual" was chosen for students to position themselves as teacher educators and mentors. This is to change the perspective from which students approach their work and to support their personal investment in their own learning. PE/CT: Class meetings (lectures) and online materials help students in developing principles for evaluating the relevance of the ideas that they engage. IA: Concepts of diversity, inclusion and learner-centredness are explored. This is to further support students in framing their intellectual frameworks in relation to these concepts.
Evaluation Phase In this phase, the focus is on supporting students in collaboratively and critically exploring the explanatory potential of the findings that their projects helped them establish	**Assessment Task 3 (not graded)**: Students are requested to use the website format as a communication platform for facilitating professional development. To this end, in their groups, students will place on their websites the projects they created in the course of the unit, links to the sites of other groups, and will share understandings that they developed in the course of their individual assignments relating to these projects **Examples of the unit's activities informed by graduate attributes** COLL: Students work in mixed groups. Tutorials are made available for students to explore techniques of team work. This is to assist them in exploring its framework as a context of support and creativity. ICT: Various communication facilities are made available. Tutorials are made available for students. This is to allow students to explore the potential of those tools in the context of their collaboration. COMM: A website as a professional development platform is selected for students to explore its features and potential as a communication tool. CT: Typically, students' assignments and research are not shared, or further explored to affect students' learning. This strategy is used to assist sharing, collaborative evaluation and interpretation. ICT: Video tutorials are made available to support students in creating websites. IL: Tools are made available to assist students in exploring the genre of the professional website. This is to assist in creating effective websites. NE: Students explore professional websites for examples and ideas. PE/CT: Class meetings (lectures) and online materials help students in developing principles for evaluating the relevance of the ideas that they engage.
	Abbreviations (Appendix 1 Figure 2) **COLL:** Collaboration **COMM:** Communication **CT**: Critical Thinking **IA**: Intercultural Awareness **ICT**: ICT expertise **IL**: Information Literacy **LLL:** Life-long learning **NE**: Networking **PE**: Professional Expertise

7. A dialogic curriculum as a diagnostic tool

The goal-oriented quality of social behaviour and the relational basis of meaning-making also offer critically informed principles for evaluation of students' learning, and also of the curriculum and the teaching process. Since no attribute alone holds the power of signification, or meaning-making, any form of evaluation needs to consider all relationships engaged in the curriculum, including assessment. In other words, the testing criteria cannot be derived from an arbitrarily constructed set of descriptors, but from the parameters describing the objectives of the activities engaged in the curricular content, including the assessment tasks. Typically, in a unit outline, these objectives are described in terms of their overall purpose. More elaborated descriptions at the module level will include more detail which will help in further explicating these purposes, thus providing the parameters with more content. Evaluation of this kind will help relate the quality of engagement of different parameters in relation to one another. This is a very important point. Tested here are not artificial constructs of generic skills, but the strategies in which the skills were engaged by students to support other skills and, as a result, the completion of the assessment tasks, i.e. the learning process. In this way, a dialogic curriculum helps address the criticism that conventional, content-centred curricula attract for "giv[ing] the impression that they [the skills] can be acquired once and for all, and in isolation from each other" (Oliver, 2010, p. 15).

This kind of relational linking can translated into rubrics, displaying the criteria for progress evaluation. This will help educators map progress across units and levels in relation to the actual learning processes that were facilitated. Furthermore, appropriate evaluation sheets could be developed and distributed to students at the end of the teaching period or, better, at the end of each phase of the process of knowledge construction. This would engage students in assessment of their own progress and in reflecting on their own learning strategies. Evaluations of this kind can be used by teachers to inform their teaching and curriculum design.

8. Conclusion

The agenda of integrating graduate attributes into academic curricula was largely informed by the need for universities to provide higher teaching standards and to assure quality learning for university students. As stated in the Bradley report, it is important to be able to relate students' learning experiences to the values held by academia and the community at large, thus making university education perceived as capable of "[c]ompet[ing] effectively in the new globalised economy" (Bradley, Noonan, Nugent, & Scales, 2008, p. 1).

The approach outlined in this paper seeks to respond to these challenges by offering a methodology for embedding graduate attributes in discipline-based degree curricula. It does so by proposing the dialogic process of knowledge construction as the organising structure of the curriculum. The principles of this dialogic model are embedded in critical approaches to knowledge production and derived from an analysis of what makes an inquiry (learning) "interesting, deep, profound, worthwhile" (Latour, 1999, Articulations and Propositions section, para. 8). In the proposed model of a dialogic curriculum, graduate attributes serve as pedagogic intentions, i.e. points of focus, for developing activities which support students in each of the phases of the process of knowledge construction.

The article has also shown the model to be suitable as a diagnostic tool for students to evaluate their own learning strategies and for teachers to evaluate their role in the process. When appropriately designed, the model can help designers trace students' progress in relation to criteria derived from the objectives of the activities engaged in the curricular content, including the assessment tasks. As discussed, this can assist in producing contextualised and meaningful forms of assessment which can further inform curriculum design and pedagogy. As shown here and throughout the paper, the model offers constructive solutions to longstanding questions of the graduate attribute agenda, such as what graduate attributes should be engaged and measured, or how to embed graduate attributes in curricula that would lead to more relevant, inquiry-oriented pedagogies.

Without doubt, the proposed model strays away from the paths paved by the conventional, content-centered approaches to the graduate attributes agenda. In this aspect, it is constructed from within the very approach that it adopts for curriculum design, i.e. one which seeks to enhance consistency of the terms on which understandings are built, uncovering new connections and re-

qualifying questions (Latour, 1999, Good and Bad Generalizations section, para. 2). One of the qualities of an "interesting" inquiry that Latour (1999) argues for is for a study to resonate with other studies and, in so doing, inspire new paths and new questions. This is exactly the intention of this paper which builds its accountability on research embedded in critical theory, critical pedagogy and dialogic learning.

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10. Appendix 1

	Details	GA1 Communication
Assessment 1	Workbook	Please select HOW
Assessment 2	Media Writing	Please select HOW
LO 1	Recognise professional writing styles and techniques	Please select HOW
LO2	Differentiate markets and audience when selecting appropriate communication techniques	Please select HOW
LO3	Use writing	

GA1 – Communication

Introductory:

Use of appropriate language to describe/explain discipline-specific fundamentals/knowledge ideas

Intermediate:

Select and apply an appropriate level/style/means of communication

Graduate:

Formulate and communicate views to develop an academic argument in a specific discipline

Figure 1 The graduate attribute of Communication in a screencast illustrating the "the pedagogy and the technology" of mapping graduate attributes at the Central Queensland University, Australia (Curriculum Design & Development Unit, 2010) URL: http://www.screencast.com/t/BGyhEVp4j9Lm

Communication: The intention of activities constructed within this attribute is to offer students access to contexts challenging the belief systems or ideas which inform how they "imagine and effect active intervention in the situations that affect them" (Freadman, 1994).
E.g. presentations, in-class and online discussions, interviews.

Collaboration - The intention of activities constructed within this attribute is to offer students access to contexts challenging the belief systems or ideas which inform how they envisage effective teamwork.
E.g. developing a website for Professional Development, creating learning environments and learning resources, creating an online broadcasting channel.

Information Literacy: The intention of activities constructed within this attribute is to offer students access to contexts challenging the belief systems or ideas which inform how they manage information (Council of Australian University Librarians, CAUL, 2004).
E.g. recognising the need for information, its nature and extent; finding information; evaluating its relevance to their study; compiling and managing its format and type, relating information to relevant contexts, presenting and using ethically.

Intercultural Awareness: The intention of activities constructed within this attribute is to offer students access to contexts challenging the belief systems or ideas which inform how they construct their interactions and, specifically, how they construct the criteria that they perceive as significant in those interactions (Chambers, 1996, p. 147).
E.g. expansion of the schemes of appreciation through strategies of "compare and contrast" which help in building bridges between that which appears foreign, but in fact, may be a different appropriation of the same purpose (Freadman, 2004)

Critical thinking: The intention of activities constructed within this attribute is to offer students access to contexts challenging the belief systems or ideas which inform how they assemble perspectives when constructing their response to the assignment question ("The critic is not the one who debunks, but the one who assembles", who constructs a multifarious inquiry launched with diverse tools in order "to detect how many participants are gathered in a thing to make it exist and to maintain its existence" (Latour, 2002, Conclusion section, para. 12).
E.g. the process used for establishing the question of the assessment task, object of inquiry, purpose, the scope of inquiry and the rationale supporting the scope.

Life Long Learning: The intention of activities constructed within this attribute is to offer students access to contexts challenging the belief systems or ideas which inform how they perceive the relevance of their inquiry to others in the profession and to their own future. The idea is for students to "develop a sense of their own history" in the contexts of projects where, after a while, "their personal stakes change: they are no longer just doing an exercise, their "self" is at stake (Lian, A-P. 2011, p. 10).
E.g. illustrating how the relevance to professional contexts, using current projects to inform one's teaching, sharing projects and reflections with relevant professionals.

Networking: The intention of activities constructed within this attribute is to offer students access to contexts challenging the belief systems or ideas which inform how they construct and work their relationship with professionals and relevant bodies.
E.g. engaging professional networks, organisations and experts to inform one's learning; being part of a larger learning forum, thus expanding one's perspectives

Professional expertise: The intention of activities constructed within this attribute is to offer students access to contexts challenging the belief systems or ideas which inform how they construct questions relevant to their discipline and with what kinds of tools (Latour, *op. cit.*).
E.g. engaging interdisciplinary fields in order to build broadly informed expertise

ICT skills: The intention of activities constructed within this attribute is to offer students access to contexts challenging the belief systems or ideas which inform how they utilise online tools and to what purpose.
E.g. using Google Sites, email, closed and open discussion fora, Learning Management Systems, applications like authorstream, technical editing skills.

Figure 2 Definitions of the scope of each of the attributes