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Assessing Graduate Attributes for Employability in the Context of Lifelong Learning: The holistic approach

Introduction

To promote economic and personal growth, higher education students' employability in ensuring their preparedness for workforce is emphasized. From the employer's perspective, to judge whether the graduate is employable depends upon whether the graduate exhibits the attributes that employers anticipate (Harvey et al. 1997). Yet, with the growing emphasis on lifelong learning in times of uncertain change, it is important for higher education to re-consider the development and assessment of graduate attributes from the perspective of lifelong learning, in which it is argued that what constitutes graduate attributes for employability is changing and may need to be based on a different approach.

The listing of graduate attributes: the dominant, technical-rational approach

The emphasis of 'graduate attributes' in higher education has increasingly gained attention in related educational literature (Barrie 2004; Fallows & Steven 2000; Knight & Yorke 2004; Hager & Holland 2006; Johnston & Watson 2006; Scanlon 2006). One tendency that seems to predominate in thinking of graduate attributes is to refer to them as equivalent to sets of 'key skills' (Fallows & Steven 2000), 'transferable skills', or 'generic skills (Allen 1991). Barnett (2006) however considers that graduate attributes "should not primarily be construed as sets of skills or even knowledges", but should be viewed as 'certain kinds of human dispositions and qualities' (61). The learning of both knowledge and skills are equally necessary for students' preparation for changing workforce. Yet, if one only speaks of knowledge and skills, they may not be performed because one lacks the disposition to make the use of them a lifelong 'habit of mind' (Costa & Kallick 2000). A more inclusive account of graduate attributes in this sense represent a mix of knowledge, skills and dispositions than simply focusing on one or two of them (Hager 2006; Holland 2006).

Furthermore, in order to be specific, lists of graduate attributes have been developed, by identifying what kinds of knowledge, skills and dispositions are to be assessed (e.g. Harvey 1999; Dunne et al. 2000; Knight & Yorke 2000, 2001, 2003, 2004; Little 2001; Warn & Tranter 2001; Yorke 2001; Yorke & Harvy 2005; Yorke & Knight 2006;

Hager & Holland 2006). Such an assessment approach is based on the technical-rational thinking, which assumes a ‘container’ view of mind (see Bereiter 2002; Bereiter & Scardamalia 1996; Brown 2002; Hager 2004; Lakoff & Johnson, 1980). Graduate attributes are acquired in the metaphorical sense of mechanical delivery and stable transmission. The focus of assessment in this regard is to assess ‘what is stable and replicable’ (Hager 2003, 2); it assumes that, when one learns and possesses knowledge, skills and dispositions, application and transfer may take place automatically.

The consequence of the assessment approach grounded in linear, rational calculation, however, is insufficient to give graduates the power to deal persistently with the complex workforce in change. It overlooks the current phenomenon of uncertainty and acceleration of change in workforce in which, with the growing emphasis of lifelong learning, the way the graduate attributes are expected to demonstrate are more sophisticated than the way the attributes are listed with the technical-rational approach. The idea of lifelong learning does not simply mean the extension of the learning period, but signifies a shift of focus from the de-contextualization of knowledge and skills for their own sake to the practical value and application of knowledge and skills in relation to the changing world. It also involves the metaphorical shift of our conception of mind from mind as container to mind as constructor (Earl & Katz 2000). The ‘mind as constructor’ view emphasizes students’ ability of interaction with the world and their ability of ‘knowledge construction’ (Olson & Bruner 1996); the form of knowledge is transformed from ‘Mode 1’ to ‘Mode 2’ (Gibbons et al. 1994), and the form of skills is not seen as simply *teche* but goes beyond the technical sense to require ‘reflection, judgment and situational awareness’ (Winch 2006, 87).

Such a ‘constructor’ view of graduate attributes, characterized by the emphasis of interactivity and organic learning (Hager & Beckett 2000), must be studied and assessed as wholes (Holland 2006). The central task becomes not about how much knowledge, skills and dispositions graduates *have* but about how well students can use and relate them to the changing contexts in a way of *being* with them. That one can learn and acquire ‘static’ knowledge, skills and dispositions does not mean that one will be able to apply them and make them ‘dynamic’ and useful in changing workforce. It is a methodological mistake to take the owning of knowledge, skills and dispositions as the ultimate objective of assessment in higher education and to overlook the importance of the sense of holding knowledge, skills and dispositions together as a whole through student *engagement*.

The focus on engagement: the holistic approach

An important characteristic of the holistic perspective is the impossibility of explaining employability in terms of the properties of the constituents of graduate attributes. The assessment of the identification of graduates attributes cannot be deduced from knowledge, skills and dispositions *per se* as parts, but is instead judged holistically by how graduates use and integrate them (Holmes 2001). It is the capacity of engaging with knowledge, skills and dispositions as a whole, rather than the acquisition of a constellation of them individually, that makes someone employable (Morley 2001). With the indivisibility of wholeness, the assessment is not confined to pre-specified tick-lists by making predefined objectives respectively, but is open-ended and divergent (Torrance & Pryor 1998, 2001) in the possibility of the combination of knowledge, skills and dispositions. It does not mean there is no need to list knowledge, skills and dispositions, yet the assessor does not evaluate the listing on a divisible basis. The lists of them are viewed in a helicopter vision, in which the focus is on the links of them revealed through engagement.

Engagement as process is not a set of techniques or mechanical procedures, but rather a way of dynamic *being*, in which the student is not simply to own knowledge, skills and dispositions, but to actually employ and associate them in flexible ways into something as an outcome. The principles of association in consciousness cannot be reduced to Skinnerian stimulus-response connections (Gage 1963, 138). Instead, there is no general rule of telling and dictating the relevant combination of knowledge, skills and dispositions on the basis of the properties of them as parts *per se*. Yet it does not mean the possibilities of relating parts as a whole derive from a random, accidental sorting of variants, but they arise from one's engaging and working through the full attention and consciousness to deliberate on and detect what is the appropriate order relevant to the wholeness. There is purposefulness which is implicit towards the emergent wholer; the relatedness of the parts and the emergence of wholeness are one process (Bohm 1995). The process of engagement involves the integral, tacit, and non-linear aspects of perception, and the result of the engaging process could be 'a quantum jump' (Bohm 1951) that can never be predicted.

Engagement with phronesis

With the non-mechanistic, non-reductive perspective, graduate attributes do not arise from the decontextualized acquisition of knowledge (episteme) and skills (teche), but

are grounded in the immersed application of knowledge and skills (phronesis) through the wholeness of engagement that cannot dispense with a link to the real context and reflecting upon it. The priority of the assessment of graduate attributes from the holistic perspective is given to phronesis over episteme and teche. It is not the assessment of the abstraction of knowledge as *theoria* but the assessment of knowledge as being-in-the-world (Gibbs & Angelides 2004). Such a assessment approach focuses on students' engagement with phronesis, as a way of being and engaging in the world, which is not a process of the linear transmission of knowledge, skills and dispositions by being taught directly in a top down sense, but a process in which knowledge, skills and dispositions are integrated, embedded, and devoted as a whole through being constantly immersed in activities and being with things (Bath et al. 2004, 314). Through engagement with phronesis, students take a deep approach, rather than a surface approach (Entwhistle 1996), to make commitments to the integrative learning of knowledge, skills and dispositions.

Phronesis as practical judgment or wisdom grounded in being-in-the-world, as Aristotle specially says, is not mere knowledge, but also must include action (Aristotle 1985, 1152a8-9). The process of being-in-the-world, as Yuasa (1987) put it, has 'the character of *action*; the essential mode is to act on the world, not to cognize it' (68; italics in original). It reflects a process whereby the student proactively and sensitively detects the effects he or she can have on the situation and the effects the situation can have on him or her. This makes an ontological turn of the practice in higher education away from the learning for the subject discipline itself to the learning for oneself and the world, from the advocacy of instrumentalization and fragmentation to the exploration of integration and creation, and hence from solid knowing to dynamic acting and being (see Barnett 2004; Dall'Alba & Barnacle 2007).

Engagement with phronesis as thinking, acting, and being

Drawing on engagement with phronesis, the assessment of graduate attributes comes to grips not only with one's thinking, but also with the sheer totality of one's thinking, acting and being. It is the 'being', not the 'having', that is captured as the objective of assessment of graduate attributes. Each successful engagement yields integrative thinking, acting, and being, and an increased capacity of thinking, acting, and being in dealing with the changing situations is hence built up.

In this paper engagement with phronesis as thinking, acting, and being is in line more with Heideggerian phronesis than with Aristotelian phronesis (see Coltman 1998;

Hatab 2000). Aristotelian phronesis is more tethered to its social and cultural milieu whereas Heideggerian phronesis permits more creation and openness for the purpose of Dasein's discovery of its own possibilities (Hatab 2000, 109). Heidegger, who reflects upon and goes beyond Aristotle's stable and harmonized model of phronesis, offers the notion of phronesis in a more open sense which demands more ability of disclosing appropriateness and balancing in the midst of complexities, ambiguities, and contingencies. The focus on engagement with phronesis as thinking, acting, and being is not simply because of humanistic significance but because of the rise of ontological construction as a necessary condition in response to the times of change. In times of change, there is no 'final vocabulary' (Rorty 1989) or absolute, grand meta-narratives (Lyotard 1984) as imperatives for thinking and acting. It turns out that the ontological construction simply relies upon thinking and acting themselves without any further internal or external prescriptions, and therefore cannot be independent and removed from the practice of phronesis, which is based on judgment or wisdom of one's own, to deliver and transform the change of the workforce world.

Engagement with phronesis in Heideggerian sense does not focus upon 'object' itself, but focuses on what comes to 'be' after thought and action. It does not arise from the questioning of 'is it true' or 'is it useful' only, but from the questioning of 'is it meaningful', in the sense of the attempt of using what Heidegger called the hermeneutic circular movement, back and forth, to resolve meanings appropriate for thought and action in uncertainty of being-in-the-world.. Grounded in meaningfulness, engagement with phronesis emphasizes the importance of dwelling in context (Heidegger 1971) on the one hand, and involves the understanding of 'self' by dwelling in context on the other hand. The indispensability and involvement of self-understanding is evident in workforce where the judgment of employability is not just in knowing but is in acting and being through self-understanding.

Phronesis in experientialism

Engagement with phronesis foregrounds experientialism (Lakoff & Johnson 1980). With situational, self-referential and therefore ontological characters, phronesis must be an experiential phenomenon, in which one's thinking, acting and being are all subsumed in experience as oneness. Experience gives the power to the development of phronesis in a manner of being-in-the-world. Phronesis is not a process that can be known by being told, but a process one has to experience. 'To yield practical wisdom', as Thiele (2006) says, 'experience must be soaked up with one's pores and worked into the living texture of the mind' (321).

Such an experience-based approach goes beyond the technical-rational paradigm and it does not refer to simply the capacity of using and putting together knowledge and skills, like building blocks (Lakoff 1987), as the detached structure based on general and existing rules, but emphasizes the role of bodily experience in transcending existing rules to create and act within the situated structure. The development of graduate attributes, which grows out of bodily experience that can facilitates and constrain thought and action, are embodied and built up. Through engagement and experience in phronesis, the ability of application and transfer arises.

Implications for assessment methods

With the holistic approach, graduate attributes are considered to be assessed not simply in written testing but through assessment on the continuous process of one's engagement and experience in phronesis. Instead of assessing what knowledge, skills, and dispositions one has, what are to be assessed are the process of how well one, as a creative, spontaneous meaning-bestowing agent, engages in phronesis as experiential activities with an appropriate outcome. Besides taking tests, authentic evidence of significant engaging experiences that builds up one's ability of thought and action is highlighted.

Yet, assessment of student engagement with phronesis is challenging work. It includes the understanding of how the mental 'flow' goes (Csikszentmihalyi 1997), such as the understanding of how one thinks and reasons in phronesis. It is hard to assess the complex 'flow' state simply with traditional written tests and grading in terms of having a fuller picture of what a student can offer (Yorke & Harvey 2005). This suggests that a multi-faceted, holistic understanding ways of assessment needs to be developed. Multidimensional approaches to assess student engagement and experience in phronesis must be recognized in order to create a more holistic and naturalistic account and to prevent a narrow focus on numerical scores or grades. The quantitative assessment with a numerical value may be appropriate to express the explicit result of the engaging process. Yet, it probably cannot be the whole of assessment for employability and lifelong learning, as the assessment method, from a holistic perspective, cannot be equated with or reduced to 'testing', which easily leads to the result of numerical marks and ranking that can lead to shallow and fragmented learning (Crooks 1988; Frederiksen 1984; Frederiksen & Collins 1989; Taras 2002). The understanding of the invisible engagement with phronesis through qualitative assessment, which can reflect whether one has developed the habit of mind of being

an effective worker and lifelong learner, should not be overlooked.

The methods of assessing student engagement with phronesis can be viewed as two kinds: the first-order method and the second-order method. Impersonal observation of students' phronesis process, or participant observation through interaction with students and participating in the exercise of phronesis, which consists largely in problem-based, project-based, and task-based activities and experiences, constitutes the direct, first-order evidence for understanding the condition of students' engaging abilities. The first-order accounts and evidence of students' experience and performance can be rich resources for catching the continuity and authenticity of students' abilities of engagement with phronesis and disclose the aspects of students' thought and action in wholeness that may be missed or unattended in alternative ways.

However, it does not mean the first-order account has revealed sufficient messages and meanings of students' engagement. The voice of statements of what students think and feel about their own performance of engagement needs to be heard and understood. Written or oral narrative accounts on the activities of learning phronesis that students themselves experience, which may be presented and realized in various forms such as self-report, learning journals, learning logs, exhibitions, portfolios, student projects, questionnaire and interviews, and so on (see Skinner & Belmont 1993; Chapman 2003a, 2003b), constitutes the indirect, second-order evidence for assessing and understanding students' engagement quality. Communication and further understandings between the assessor and the assessed are required and supported by second-order reports as the accompaniment.

Conclusion

This paper seeks to investigate graduate attributes and the assessment of them from a holistic perspective. The focus of developing and assessing graduate attributes shifts from the acquisition of knowledge, skills and dispositions to the integrative use of knowledge, skills and dispositions through student engagement with phronesis. This suggests a multi-faceted assessment system to assess student engagement with phronesis, which emphasizes the qualitative approach of knowing how well graduate attributes are developed, while acknowledging that the quantitative approach is not thereby entirely displaced. The multi-faceted assessment, despite the provision of understanding graduate attributes development in a fuller sense, however, can be considered to be an unrealistic approach due to the sufficiency of time required. This explains why the grading system, with the benefit of efficiency and quick judgment,

has an obvious attraction to higher education system. Yet, if the development of employability is to be treated seriously in higher education, a multi-faceted method of assessment, which can do justice to the full spectrum of graduate attributes development, will demand attention and further research.

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