

Assessing graduate attributes for employability in the context of lifelong learning: The holistic approach*

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Abstract: To promote economic and personal growth, higher education students' employability, ensuring their preparedness for the workforce, is emphasized. From the employer's perspective, judging whether a graduate is employable depends upon whether the graduate exhibits the attributes which employers value. Yet, with the growing emphasis on lifelong learning, it is important for higher education to re-consider and reframe the development and assessment of attributes of graduates in the context of lifelong learning. In this paper, these attributes will be explored in that context, and the issue of how assessment helps the development of graduate attributes is to be considered. Student engagement is proposed in this paper as the holistic, useful approach for the development of employability and lifelong learning. The holistic approach reflects the fact that what is required in a workforce is not the acquisition of knowledge, skills and dispositions per se, but the capability to make an engagement through which knowledge, skills and dispositions are connected as a whole. The lack of emphasis on students' engagement could lead to mistakenly selecting as important for the focus of assessment simply the acquisition of skills, knowledge or dispositions, rather than the holistic connection of these to their application in the workforce.

Key words: assessment; employability; graduate attributes; holistic; lifelong learning

1. Introduction

In an age of uncertainty, as the conception of work is shifting from work as a "career for life" to work as changing career, it is expected that the aim of higher education focuses on students' employability rather than employment (Johnston & Watson, 2006, p. 235). Judging whether graduates are employable, from the employer's perspective, depends upon whether the graduate exhibits the attributes which are expected to ensure their preparedness for the workforce (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 needed for employability is changing and may need to be based on a different approach.

In this paper, the focus on students' engagement with "phronesis" is proposed as a useful, holistic approach to the development of employability and lifelong learning. To begin with, the dominant approach for identifying

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graduate attributes and the epistemology which is its underlying foundation are investigated. Given lifelong learning and the challenge it presents to higher education and the workforce, the attributes developed by using this approach are deduced to be insufficient to meet the demands of dealing with changes. Instead, the holistic approach is presented as reflecting the view that what is required in the workforce is not the acquisition of knowledge, skills and dispositions themselves, but the capability of engagement with phronesis through which knowledge, skills and dispositions are connected as a whole. Failure to emphasize students' engagement with phronesis could lead to mistakenly attribution what is important for assessment to be the acquisition of skills, knowledge or dispositions rather than the holistic connection of these with one another and their application in the workforce.

2. The listing of graduate attributes: The dominant technical-rational approach

The emphasis on "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 about graduate attributes is to refer to them as equivalent to sets of "key skills" (Fallows & Steven, 2000), "transferable skills", or "generic skills" (Allen, 1991). Such equivalence makes the point that graduate attributes are significant in having generality and transferability, and are broader than the mere acquisition of knowledge. Barnett (2006), however, points out that graduate attributes "should not primarily be construed as sets of skills or even knowledge", but should be viewed as "certain kinds of human dispositions and qualities" (p. 61). The learning of both knowledge and skills in higher education is, of course, considered necessary for students' preparation for the changing workforce (Boud, 2001). Yet, if one merely possesses knowledge and skills, they may not be well applied 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 should then include a mix of knowledge, skills and dispositions, rather than simply focusing on one or two of these (Hager, 2006; Holland, 2006).

It follows that the notion of assessment changes to a focus on assessing graduate attributes rather than assessing solely the acquisition of knowledge (Gibbs, 2006, p. 19). In order to be specific and make explicit the objectives of assessment, 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). Assessment based on such lists, however, produces some problems. First of all, as Coffield (2002) points out, it seems unlikely that different authors who have their views of their own will agree about the listing. An inclusive list will be unmanageably long. Even if an all-encompassing listing could be made, graduates could not possibly possess all the listed knowledge, skills and dispositions (Hinchliffe, 2005). The possession of all the listed attributes may not be meaningful, as a large repertoire of attributes may have general value but prove insufficient for some specific workplace. In different working situations, the combinations of knowledge, skills and dispositions which employers anticipate from graduates vary. Even within one working area (a company or an organization) different managers or recruiters could have different preferences in their requirements for knowledge, skills and dispositions, and preferences and emphases change over time (Harvey, et al., 1997; Pedagogy for Employability Group, 2006, p. 4). Martin & Gowthrope (2003, p. 72) therefore hold that there is "no such thing as graduate attributes" as the universals.

The assessment of listed attributes is based on technical-rational thinking, which assumes a “container” view of mind (Bereiter, 2002; Bereiter & Scardamalia, 1996; Brown, 2002; Hager, 2004; Lakoff & Johnson, 1980). Graduate attributes are assumed to be acquired through mechanical delivery or transmission. The focus of assessment in this regard is to assess “what is stable and replicable” (Hager, 2003, p. 2); it assumes that, when one learns and possesses knowledge, skills and dispositions, their application and transfer can take place automatically. The consequence of using the assessment approach grounded in linear, rational calculation, however, is insufficient to assure that graduates have the power to work persistently within a complex and changing workforce. The approach overlooks the current phenomena of uncertainty and the acceleration of change in workforces within which, with the growing emphasis on lifelong learning, graduate attributes are expected to be demonstrated in more sophisticated ways than attributes which can be 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 learning of de-contextualized knowledge and skills for their own sake to their practical value and application in relation to the changing world, so that one needs to constantly learn and always prepare for relearning the possibilities of knowledge and skills in use. The idea of lifelong learning 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 to interact 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 *techne* but goes beyond the technical sense to require “reflection, judgment and situational awareness” (Winch, 2006, p. 87).

In such a “constructor” view, graduate attributes, characterized by the emphasis on interactivity and organic learning (Hager & Beckett, 2000), must be studied and assessed as wholes (Holland, 2006). The assessment of graduate attributes as wholes shifts from focusing on atomic, solid representations to looking for related, “liquid” interpretations; it builds upon “relationships” rather than on “objects” (knowledge, skills and dispositions) appreciated for their own sake. The central task becomes to assess not how much knowledge, skills and dispositions graduates have, but how well students can use them and relate them to changing contexts as a way of being with the contexts. 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 a 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.

3. The focus on engagement: The holistic approach

An important characteristic of the holistic perspective is that it assumes the impossibility of explaining employability in terms of the properties of the constituents of graduate attributes. The assessment of the whole cannot be reduced to the assessment of its parts. In contrast with the technical-rational approach, in which the whole is considered to be equal to the sum total of its parts, the holistic approach holds that the assessment of the whole is always “greater over and above its parts” (Antonites, 2000, p. 91). The assessment of identified graduate 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 to engage 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 corresponding predefined objectives, but is open-ended and divergent (Torrance & Pryor, 1998, 2001) in the possibility of the combination of knowledge, skills and dispositions. This does not mean that there is no need to list knowledge, skills and dispositions, but the assessor does not evaluate the listed attributes on a divisible basis. They cannot be regarded as separate, despite their distinctiveness, but as nonlinearly related in wholeness. The listed attributes are viewed in a helicopter vision, in which the focus is on the links between 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 does not simply own knowledge, skills and dispositions, but actually convert and employ them in flexible ways into some outcome. The judgment of whether one's available knowledge, skills and dispositions are relevant requires one's engaging and relating to the world. The engagement of relating to the world contains no guiding principles of relations except the principle of associations in wholeness itself. The principles of association in wholeness cannot be reduced to Skinnerian stimulus-response connections (Gage, 1963, p. 138). Instead, there is no general rule for predicting and dictating the relevant combination of knowledge, skills and dispositions on the basis of their properties as parts per se. Yet this does not mean that the possibilities of relating parts as a whole derive from a random, accidental sorting of variants. They arise from one's engaging and working, with full attention and consciousness, to deliberate on and detect what is the appropriate order relevant to the whole. There is purposefulness which is implicit towards the emergent whole, in which there is awareness of the relationship of every part to every other; 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 can be "a quantum jump" (Bohm, 1951) that can never be predicted.

4. Engagement with phronesis

Within the non-mechanistic, non-reductive perspective, graduate attributes do not arise from the decontextualized acquisition of knowledge (episteme) and skills (techne), 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 in the assessment of graduate attributes within the holistic perspective is given to phronesis over episteme and techne. It is not the assessment of abstract knowledge as *theoria* but the assessment of knowledge as being-in-the-world (Gibbs & Angelides, 2004). Such an approach to assessment focuses on students' engagement with phronesis, as a way of being and engaging in the world, which derives not from the linear transmission of knowledge, skills and dispositions taught directly in a "top-down" way, but from process in which knowledge, skills and dispositions are integrated, embedded, and devoted as a whole through learners being constantly immersed in activities and with things (Bath, et al., 2004, p. 314). Through engagement with phronesis, students take a deep, rather than a surface approach (Entwhistle, 1996), and 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 emphasized, is not mere knowledge, but also must include action (Aristotle, 1985). The process of being-in-the-world, as Yuasa (1987) puts it, has "the character of *action*; the essential mode is to act on the world, not to cognize it" (p. 68, italics in original). The student proactively and sensitively detects the effects which he or she can have on the

situation and those which the situation can have on him or her. With this interactivity, engagement with phronesis necessarily involves a flow of energy, and focuses on “process” as well as “result”. This engagement makes an ontological turn in the practice of higher education, away from learning for the sake of subject discipline itself to learning for oneself and the world, from the advocacy of instrumentalization and fragmentation to the exploration of integration and creation, and hence from rigid, fixed knowing to dynamic acting and being (Barnett, 2004; Dall’Alba & Barnacle, 2007).

4.1 Engagement with phronesis as thinking, acting and being

Drawing on engagement with phronesis, the assessment of graduate attributes comes to grips with the sheer totality of the graduate’s thinking, acting and being. It is the “being”, not the “having”, that is defined as the objective for the assessment of graduate attributes. Each successful engagement yields integrative thinking, acting, and being, and an increased capacity for thinking, acting, and being in dealing with changing situations is hence built up.

In this paper, engagement with phronesis as thinking, acting, and being correspond more with Heideggerian than with Aristotelian phronesis (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, p. 109). Heidegger, who reflects upon and goes beyond Aristotle’s stable and harmonized model of phronesis, offers a more open notion of phronesis which demands more ability to discern appropriateness and to balance in the midst of complexities, ambiguities, and contingencies. The focus on engagement with phronesis as thinking, acting, and being is valuable not simply because of its humanistic significance but because of the rise of ontological construction as a necessary condition in response to times of change. In such times, there are no “final vocabulary” (Rorty, 1989) or absolute, grand meta-narratives (Lyotard, 1984) as imperatives for thinking and acting. Ontological construction alone 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 changes in the world of the workforce.

Engagement with phronesis in the Heideggerian sense does not focus upon the “object” itself, but on what comes to “be” after thought and action. It does not arise from asking “Is this true?” or “Is this useful?” only, but from asking “Is this meaningful”, and thus 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), and of thus understanding the “self”. The indispensability and involvement of self-understanding is evident in the selection of a workforce, when the judgments about employability assess not just knowing but acting and being through self-understanding.

Dwelling in being is understood not just as a process within the mind, but as a process involving the entire operation of the mind and body of the person concerned. The embracement of engagement in phronesis through thinking, acting and being demands the non-dualistic involvement of mind and body, which mediate each other; in the mediation, the development of being as telos is not an external directional development before, and separate from, thinking and acting, but is implicit in and generate from them. Thinking, acting and being, through engagement with phronesis, are related and experienced in the continuity and wholeness of consciousness.

4.2 Phronesis in experientialism

Engagement with phronesis foregrounds experientialism (Lakoff & Johnson, 1980). Since phronesis is

situational and self-referential, it must be an experiential phenomena, in which one's thinking, acting and being are all subsumed in experience as oneness. Experience gives the power to the development of phronesis as a manner of being-in-the-world. Phronesis is not a process that can be known by being told about it, but a process which one has to experience. It is developed not in a form that can be prior to or independent of the subject, but as a process that cannot be divorced from the subject and the circumstances which the subject is concerned with. "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" (p. 321).

Experientialism, contrasted with classical epistemology, argues that there are no abilities of thinking and knowing that can be directly used in the world without one's experience through which what is thought and known is made possible. It holds that experience, which involves perception and judgment, has the "gestalt" feature of nonlinear operation, requiring mental imagery and the acting body. It is through the body that one can experience the experienced, and that both the subject and the world are connected; through the body, thinking is linked with acting and embodied (Pfeifer & Scheier, 1999; Pfeifer & Bongard, 2007); thinking, instead of being mainly in the head, is realized and performed, and made visible.

Such an experience-based approach goes beyond the technical-rational paradigm. It does not value the capacity of using and putting together knowledge and skills, like building blocks (Lakoff, 1987), to form a 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 developing graduate attributes, which grows out of bodily experience that can both facilitate and constrain thought and action, are embodied and built up. Through engagement and experience in phronesis, the ability of application and transfer arises.

5. Implications for assessment methods

Assessment needs to be seen as an important and indispensable part of ascertaining whether students' perceptions and experiences match the purpose of higher education for enhancing the development of graduate attributes. The starting point for developing graduate attributes for employability in lifelong learning contexts is to recognize in assessment procedures the need to transcend beyond dichotomies of mind and body, thought and action, and rationality and empiricity. A complete organization of graduate attributes for employability and lifelong learning would demand that introspective mental processes be linked with physical action in contexts which force one's mentality to get connected with usefulness and meaningfulness in reality.

Within this perspective, graduate attributes would be assessed not simply through written tests but through assessment of the continuous process of one's engagement and experience in phronesis. Instead of assessing knowledge, skills, and dispositions per se, what is to be assessed is how well one, as a creative, spontaneous meaning-bestowing agent, engages in phronesis as experiential activities with an appropriate outcome. Besides test results, authentic evidence of significant engagement in experiences that build up one's ability of thought and action is highlighted. The reason for the emphasis on assessing experiences of engagement with phronesis is that the true medium of communication within the changing workforce in the age of uncertainty becomes neither the knowledge of discrete, factual contents nor the mere replicative technical implementation of skills, but rather the tacit engaging process that involves self-directed reflective thought and action.

Such assessment of students' engagement with phronesis is challenging work. It includes the understanding of how the mental "flow" goes (Csikszentmihalyi, 1997), how one thinks and reasons in phronesis, and

considering the extent to which the student shows interest in experiences of interacting with related resources, organizations and people in order to build the desired attributes. It is hard to assess the complex “flow” state simply with traditional written tests and grading; a fuller picture of what a student can offer is required (Yorke & Harvey, 2005). This suggests that multi-faceted, holistic understanding ways of assessment need to be developed. Multidimensional approaches to assessing students’ 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. A quantitative assessment with a numerical value may be appropriate to express the explicit result of the engaging process, but it probably cannot be the whole of assessment for employability and lifelong learning, as assessment in a holistic perspective cannot be equated with or reduced to “testing”, which easily leads to results defined by numerical marks and ranking that can lead to shallow and fragmented learning (Crooks, 1988; Frederiksen, 1984; Frederiksen & Collins, 1989; Taras, 2002). Understanding through qualitative assessment the students’ invisible engagement with phronesis can reflect whether the student has developed the habit of mind of being an effective worker and lifelong learner. Such assessment should not be overlooked.

The methods of assessing students’ engagement with phronesis can be viewed as two kinds: the first-order method and the second-order method. Impersonal observation of students’ practice of phronesis, or participant observation through interaction with students and participating in their 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. First-order accounts and evidence of students’ experience and performance can be rich resources for evaluating the continuity and authenticity of students’ abilities of engagement with phronesis, and can disclose the aspects of students’ thought and action in wholeness that may be missed or unattended by other ways of assessment. Teachers may choose to present the results of their observation of student engagement with phronesis in checklists or rating scales, but their remarks or comments which accompany with the checklists or scales are much more important, as they provide useful “feedback” (Shephard, 2001, p. 1075; Wiener, 1968, p. 56) that can prompt students’ thinking about making changes in the development of their attributes.

However, first-order accounts alone do not convey sufficient messages and meanings about students’ engagement. Students’ own statements of their thoughts and feelings about their own performance of engagement need to be heard and understood. Written or oral narrative accounts of the activities of learning phronesis that students themselves experience may be presented and realized in various forms such as self-report, learning journals, learning logs, exhibitions, portfolios, student projects, questionnaires and interviews (Skinner & Belmont, 1993; Chapman, 2003a, 2003b). These constitute the indirect, second-order evidence for assessing and understanding the quality of students’ engagement. Communication and understanding between the assessor and the assessed are required, and should be supported by second-order reports.

The assessment of student engagement with phronesis has some limitations, however. First, second-order accounts from students may include subjective experiences and reflective thoughts based on incomplete, fragmented memories that may lead to biases and prejudices. Second, multi-faceted assessment, despite providing a full understanding of graduate attribute development, may be considered as an unrealistic approach, due to the excessive time required. This explains why grading systems, with the benefit of efficiency and quick judgment, have an obvious attraction in higher education systems. 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.

6. Conclusion

This paper seeks to investigate graduate attributes and their assessment from a holistic perspective. The provision of knowledge, skills and dispositions in higher education should neither be conceived as sufficient for graduates to participate in the changing workforce nor be the primary focus for identifying employability in terms of lifelong learning situations. What is needed instead is a focus on the development of their human “being”, which requires ontological constructions with subjectivity in the center and involves the learning of phronesis in the Heideggerian sense. The way of developing graduate attributes in this sense shifts from the acquisition of discrete knowledge, skills and dispositions to their integrative use through one’s engaging with phronesis.

This paper further suggests a multi-faceted assessment system for assessing student engagement with phronesis. The system emphasizes a qualitative approach to knowing how well graduate attributes are developed, while acknowledging that the quantitative approach is not thereby entirely displaced. The underlying premise is that assessment, if it is to give a fuller picture of graduate attributes development, need not adopt unitary methods but can take various forms as different ways of understanding students’ abilities of engaging with phronesis, in order to do justice to their attributes and to the development of their employability in the context of lifelong learning. It is hoped that the discussion of the identification and assessment of graduate attributes in this paper, by focusing on student engagement, can contribute to the understanding and development of graduate attributes in higher education.

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