GUIDELINES FOR ASSESSING PROGRESS OF LEARNING IN COMPLEX DOMAINS

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ABSTRACT
The question of assessing the progress of learning in complex domains is in itself a particularly complex one. In the first part of this paper we explore a number of the dimensions of this complexity as a context for posing the question how can university students be equipped to deal with the complex conditions of modern life? The paper then asks what kinds of measures can be used to gauge progress along the myriad of pathways that learners may take to achieve greater understanding. The context of this paper is flexible learning in university education vocational programs. Given this complex learning environment a number of questions arise: what lines of inquiry and what investigative tools, might allow us to honour and harness, rather than reduce and stultify, this complexity? In exploring complex domains we are seeking to highlight the learner’s or meaning maker’s experience of complexity. We argue that the only way to produce sensitive measures of progress of learning in complex domains is for teachers to appreciate the subtleties and depths of the changes that may occur during learning and not just measurable outcomes. The way to help students deal with the complex conditions of modern life is to teach for complexity consciousness and capability.

KEYWORDS
Assessing learning, complex domains, university education

1. INTRODUCTION
Given this conference’s concern with ICT-mediated learning, we want to contribute to debates about assessing learning in digital time-space, in cyber communities and in communities that combine virtual and real classroom learning. We focus on this polyspace because, increasingly, university teaching is polymorphic: university programs frequently involve individual and collaborative inquiry in multiple domains, both digital and embodied. While ever these courses span different modes of course delivery (often described nowadays as ‘blended’ approaches) our pedagogies must allow us to cross between domains as seamlessly as possible, as we proliferate learning opportunities.

What kind of complex domain are we concerned about here? Barnett (2000) describes complexity in higher education as a situation where ‘one is faced with a surfeit of data, knowledge or theoretical frames within one's immediate situation’. But beyond this, ‘professional life is increasingly becoming a matter not just of handling overwhelming data and theories within a given frame of reference (a situation of complexity) but also a matter of handling multiple frames of understanding, of action and of self-identity’ [italics added].
‘The fundamental frameworks by which we might understand the world are multiplying and are often in conflict...It is this multiplication of frameworks that I term supercomplexity’ (Barnett, 2000, p. 6).

This conference invited us to reflect on the issue of assessing the progress of learning in complex domains. We think of a learning domain as a ‘space’ encompassing particular phenomena or goals for learning. We take up this theme from a stance of commitment to authenticity in curricula (McKenzie et al. 2002) and assessment. This challenge concerns teaching and assessment that is not only complex but also life-like, resembling the worlds in which our future graduates will inhabit. We will attempt to reconnect teaching and assessment processes in a broader discussion on enabling students (as Barnett (2000) puts it) to handle ‘multiple frames of understanding, of action and of self-identity’ in higher education.

Complexity is a major issue in both online and face to face education. Consider the student commencing online learning. New skills are needed and new modes of communication need to be learned. At the 2003 Digital Arts Conference in Melbourne, Truna aka J. Turner (2003) provided a description of the layers of literacy that students need when meaning making in digital (hyper) space. There are reading and computer skills, but beyond this, when students starts to engage with the learning material, they learn to ‘crack the code’, coming to understand how words are used to portray, influence and inform and how the argument and worldview of the learning task and medium are presented. Truna’s third field ventures into what we might call the ‘hidden curriculum’ – the assumptions embedded in the architecture of the hyper learning space. Educating for ‘code cracking’ naturally draws us into digital epistemologies discourse, such as Lankshear’s (2003) discussion on ‘four key dimensions of change that have epistemological significance: “changes in the world to be known”, “changes in conceptions of knowledge and processes of coming to know things”, “changes in the nature of knowers,” and “changes in the relative significance of different modes of knowing”’ (p. 167).

2. EXPLORATIONS IN ASSESSING PROGRESS OF LEARNING IN COMPLEX DOMAINS

One approach to learning assessment is to conduct a chronological series of assessments of learning performance, which, taken together, document progress in learning over the period in question. Alternatively, learners can be asked to gauge, from the vantage point of the present, qualitative differences in knowledge, skills, understanding or outlook through a retrospective appraisal of the journey undertaken – a longitudinal judgment. In the next section we share two of our experiences of assessing progress of learning. These represent an example of each approach.

Case 1: Assessing the Richness of Collaborative Online Learning

The first case comprises an assessment schema that was developed for use in an online coursework masters program. It represents one attempt at gauging students’ complex (multiple domain) engagement in an online discussion task. Teacher and students are asked to rank students’ capacity to work with ideas and build the learning community using the criteria listed below. This case would fall into our first category of chronological assessment of learning performance if the same assessment were conducted on two or more occasions. We only have space here to cite the high performing pole of both scales (McKenzie 2004).

<table>
<thead>
<tr>
<th>Working with ideas</th>
<th>Building the learning community</th>
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<tr>
<td>Shows a clear understanding of the underlying concepts</td>
<td>Your contributions encourage free-flowing and critically reflective contributions from others</td>
</tr>
<tr>
<td>Postings reveal a personal stance that is strongly grounded in the literature</td>
<td>You can always be counted on to support others in times of difficulty</td>
</tr>
<tr>
<td>Displays high level skills of analysis, critique and synthesis</td>
<td>You can always be counted on to challenge others if their postings need critique</td>
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<tr>
<td>Reveals a clear awareness of the discussion’s frame of reference and, where appropriate, skill in securing the group’s agreement to step outside it to achieve enlarged understanding</td>
<td>As facilitator, you take appropriate steps to encourage all group members to critically-self-reflect; you provide effective opening &amp; closing postings</td>
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In what sense does the schema require demonstration of capability in multiple domains? There are four performance criteria grouped under ‘working with ideas’. To score highly in the ideas arena, students must master ‘underlying concepts’, that is, they need to understand how the present discussion builds on earlier inquiry. They need to display a personal stance, a groundedness, and show how this stance is supported within the literature. They must exhibit competence in analysis, critique and synthesis. Finally, they must demonstrate metacognitive tracking capability and persuade the group where appropriate to enlarge its current frame of reference. In the second cluster of outcomes, capability both as participant and as facilitator of group discussion needs to be demonstrated. Various interpersonal and leadership skills are appraised. Again, metacognitive thinking is required as they attend not only to the social needs of the group but also expedite a completed outcome within the allocated time.

Students are given the assessment criteria in advance so that the yardstick for assessment is known before they start to engage. They are able to seek clarification on the criteria if they need it. If a student has a superficial understanding of the nuances of a particular criterion, that understanding needs to develop before or during task performance. If the assessor’s understanding is not finely honed, s/he will not be able to assess students as sensitively as the assessment design allows for. This highlights the need for teachers and learners to be adequately trained in the use of complex tools in order to achieve the optimal advantages that the tool can provide in assessing learning in complex domains. In the present argument, it is noteworthy that one single mark is awarded for global performance in the ideas category, and one in the learning community category. Here is an example of our human capacity to make value judgments spanning multiple domains.

Case 2: Using Memories and Reflection for Self Assessment

Here we briefly report on a learning activity offered to volunteers in a vocational program (McKenzie 1996). Participants were asked to identify the 20 memories from their past that best account for the persons they took themselves to be; then, to rank or sequence these moments using seven criteria:

- chronology of events
- clarity appraisal – how clearly and vividly the event stands out from other events of this period
- “timefast” appraisal – whether the memory has faded; how accurately you think you remember
- satisfaction appraisal – how much satisfaction you gain now from the recollection
- passion appraisal – an emotional temperature reading of the event
- importance appraisal – the importance of the event in shaping you as a person
- influence appraisal – the amount of influence you had on the unfolding situation.

Memories were either ‘narrow’ or ‘wide band’ events, according to whether they were single moments or ‘an experience that occurred over a period of time … [such as] a series of recurring episodes that merge together in memory’ (p. 95). While participants were required to rank their moments according to their significance to them in the present, they were first asked to record, for each moment, a comment or thought that could have occurred to them at the time: ‘The comment could relate to the surface level of the experience; or, it may show some tendency towards self-reflection, but only if – and only as far as – you were capable of it at the time … Our challenge in this activity will be to make an intuitive judgment about the gap between our reflective capacity, then, and now.’ The 20 memories exercise was described as the creation of one’s personal myth, in that it was an interpretation in the present of the meaning of the past (McKenzie 1996).

This case has a bearing on our present theme in that the activity required participants to reflect deeply on the connection between their life story and their present sense of self, and they did this via a series of self-evaluative judgments. Both in the private phase of the exercise and even more so in the sharing session, participants caught glimpses of the wonder that is the inner person, so intimately and intricately enfolded in our continuous reinterpretation of our memories. The purpose of the exercise was to explore the experience of growth in understanding over a lifetime, transmitted via each one’s continuous personal myth-making. Out of the dissonances and resonances of participants’ stories, the group caught glimpses of their capacity for discerning relative value, which plays such a central role in meaning making. What all this suggests is that as meaning makers attempt to make sense of the complex conditions of their outer and inner worlds, they progress in complexity consciousness.
3. SUMMARY: GUIDELINES FOR ASSESSING STUDENT PERFORMANCE IN COMPLEX DOMAINS

From our exploration of this topic we provide the following guidelines which we have found useful in planning and implementing strategies for assessing student performance in complex domains:

- recognise the inevitability and nature of the complex domains within which university students learn
- develop teaching and learning strategies that foster students’ appreciation of these domains by:
  - designing learning programs that value the way that learning and meaning making evolve
  - exploring ways of fostering reflexivity in students in their lifelong journeys as meaning makers
  - developing sufficiently nuanced measures of growth in understanding for student self-appraisal
- help students learn to learn successfully (in terms of personal growth and academic success) and to sustain, critique and monitor their learning in complex learning and work domains
- recognise that in complex learning environments, assessors need the capacity to deal with subtlety and nuance in the design of assessment and in student assessment itself.

In this paper we have acknowledged the value of complexity consciousness as part of the answer to the challenge of meaning making in complex domains. Today’s world is characterised by supercomplexity. We become participants in and co-creators of that complexity. As constructivists, we concur with Maturana and Varela (1992) that meaning making (‘cognition’ in their publication) is not “a representation of the world ‘out there’, but rather ... an ongoing bringing forth of a world through the process of living itself” (p. 11). We concur with Barnett’s more recently published case for imbuing university curricula with an ontological dimension (Barnett 2004), a line of thought that builds on his earlier case (Barnett 1997) for cultivating students’ critical being: ‘Amid supercomplexity, the educational task is primarily an ontological task. It is the task of enabling individuals to prosper amid supercomplexity, amid a situation in which there are no stable descriptions of the world, no concepts that can be seized upon with any assuredness, and no value systems that can claim one’s allegiance with any unrivalled authority’ (Barnett 2004, p. 252). It is by coming to know our own being and becoming critical beings that our relationship with our supercomplex world can be secured.

REFERENCES


