Curriculum, Content and Controversy in Higher Education

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ABSTRACT

Recent evidence suggests that academic staff face difficulties in applying new technologies as a means of assessing higher order assessment outcomes such as critical thinking, problem solving and creativity. Although higher education institutional mission statements and course unit outlines purport the value of these higher order skills there is still some question about how well academics are equipped to design curricula and, in particular, assessment strategies accordingly. Despite a rhetoric avowing the benefits of these higher order skills, it has been suggested that academics set assessment tasks up in such a way as to inadvertently lead students on the path towards lower order outcomes. This is a controversial claim, and one that this papers seeks to explore and critique in terms of challenging the conceptual basis of assessing higher order skills through new technologies. It is argued that the use of digital media in higher education is leading to a focus on students' ability to use and manipulate of these products as an index of their flexibility and adaptability to the demands of the knowledge economy. This focus mirrors market flexibility and encourages programmes and courses of study to be rhetorically packaged as such. Curricular content has become a means to procure more or less elaborate aggregates of attributes. Higher education is now charged with producing graduates who are entrepreneurial and creative in order to drive forward economic sustainability. It is argued that critical independent learning can take place through the democratisation afforded by cultural and knowledge digitization and that assessment needs to acknowledge the changing relations between audience and author, expert and amateur, creator and consumer.

Keywords: Higher Education, Curriculum, New Technologies, Assessment, Higher Order Skills

INTRODUCTION

This paper focuses upon the assessment of higher order skills in the context of wider pedagogical discussion and debate surrounding the expanding use of new technologies in higher education. It poses questions about the pedagogical value of these technologies in terms of their utility in addressing curricular reform as a means of developing higher order skills such as problem-solving, critical thinking and creativity (Bath et al. 2004; Winchester-Seeto et al. 2011). Within the literature these skills are considered as fundamental to the 'higher' nature of higher education and have been associated with graduate attributes (Barrie, 2006; Moore, 2004). Graduates are expected to be able to make connections between what they have learned and various academic and professional practices and between their knowledge and its creative application to new or ill-defined problems (Boud & Falchikov, 2006). Furthermore, these skills in critical analysis and problem-solving are also increasingly being related to graduates' ability to think and act as citizens in an increasingly globalised world where the pace of technological and associated change in the world of work requires flexibility in ways of operating never before.

However, whilst these higher order skills are recognised as crucial to the development of modern graduates, integrating them into curricula and their associated assessment strategies has proved to be more controversial and challenging. This is particularly evident with respect to the new technologies as tools that can support the development and demonstration of these skills. Some of the key arguments that surround these issues are developed in the following sections.

NEW TECHNOLOGIES AND THE PROBLEM OF HIGHER ORDER SKILLS

Assessment is fundamental to the ways in which students engage with curriculum. The kinds of assessment tasks that are set, their role in shaping how much time students spend on various associated activities, and their importance for progression and course completion all testify to the significance of assessment within the student experience (Brown and Knight 1994; Ramsden, 1992; Rust 2002). The nature of assessment within higher education sends out a message to students about what they are expected to achieve in terms of being able to demonstrate the kinds of skills that mark out a graduate (Brown 1997). In other words, assessment is a key component of what constitutes the higher nature of higher education. For example, there is a qualitative difference between the kind of skills involved in critical analysis that are expected of a secondary school pupil tackling a history essay and those of a third year undergraduate who is also doing an essay on what may well the same or similar topic. The difference cannot be simply expressed in terms of an index of difficulty associated with the curricular content but in the *way* that students are expected to engage with this content. In other words, the practice of critical thinking within higher education is expected to be qualitatively different from what would count as critical thinking in secondary school education. This may come down to the ways in which arguments are counterposed against each other or challenged, familiarity with and use of original sources, and originality of argument. This is just one example of how higher order within higher education are demonstrable through assessment.

However, whilst these kind skills are considered important for many courses, there is also a recognition that students require a portfolio of these skills as part of what are now known as graduate attributes, and as part of a wider recognition of the need for metacognition and lifelong learning (Boud and Falchikov, 2005; Falchikov and Thompson 2008). An over-reliance on essay-type assessments and unseen examinations has been questioned in light of the need to develop a fuller range of higher order skills to meet the needs of modern society (Falchikov and Thompson, 2008). Indeed some of gone so far as to suggest that the gap between the intentions of lecturing staff and the reliance on assessment strategies that focus on the reproduction of knowledge rather than its manipulation or transformation, raises the question of whether higher odder learning is in fact being assessed (Arum and Roska, 2010). This is considered all the more pressing in light of the uptake of new technologies for the purposes of assessment. A decade ago Northcote (2003) suggested that academics' views on the role of assessment in learning and teaching influenced their choice of online learning assessment tasks and despite the affordances of new technologies "online assessment has remained predominately summative" (p.68). Coming forward to almost the present day and McNeil, Gosper and Xu (2012) in a study of academics at an Australian university found that despite intentions of higher order learning outcomes for students, there was a tendency to use online tools such as quizzes to assess recognition and understanding. There were examples of respondents using wiki, blogs and online portfolios to assess higher order outcomes such as metacognition, creativity and evaluation. However, the relatively low uptake of these tools suggested to the authors a tendency to avoid using them as a means of engaging higher order learning. McNeil et al. conclude that their study emphasises the importance of academic development work, for example through online and on-campus workshops, to aid academics in integrating new technologies in their curriculum and assessment design. This finding is echoed in a critical literature review on the role of technology-enhanced learning in higher education by Kirkwood and Price (2014) who argue that many studies concentrate upon the means though which higher education takes place by replicating and supplementing existing teaching. However, few consider the more radical issue of the ways in which academics conceptualise teaching and learning with technology and the potential to transform the educational enterprise. In this regard it has been found that higher education teachers may adapt to technological change in ways that involve resistance, negotiation and reconciliation with a changed learning context (Westberry, McNaughton, Billot and Gaeta, 2014).

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Whilst the uptake of new technologies to assess higher order learning skills and outcomes may well be problematic, at least in some institutions, the opportunities to support the design, delivery and administration of diagnostic formative and summative assessment have been attested to in the literature. In particular, a new assessment paradigm that involves a transformational approach to computer-based assessment whereby the integration of students' performance over time is monitored as well as the integration of assessment with teaching (Bennett, 2010). The extent to which such an approach can evaluate the higher order skills is open to question but other approaches such as immersive environments and games are being used to assess such skills as problem-solving, collaboration and inquiry (See Dede, 2010; de Jong, 2010; Means & Rochelle, 2010). It has recently been suggested that electronic assessment is at a critical juncture between the 'old' testing paradigm where the linkage between pedagogy and technology is mostly one-directional, and the 'new' paradigm of a two-way 'dialogue' between new e-assessment technologies and pedagogy (Redecker & Johannessen, 2013). However, whilst these new technology assessments can inform pedagogy and *vice versa* the learning outcomes are framed in terms of "competences need for life in the 21st century" (Redecker & Johannessen, 2013, p. 91). Such claims seem to be framed in instrumentalist and functional terms rather than connect with learning that promotes higher order learning outcomes. This issue of the problematic nature of the promotion of new technologies in relation to assessment is developed in the next section.

HIGHER ORDER SKILLS AND THE PROBLEM OF NEW TECHNOLOGIES

Assessment practice has become a central topic higher education due to a changing emphasis on student engagement with higher order learning outcomes that reflect 'new' literacy skills in response to changing methods of accessing information and communicating brought about by new technologies, globalization and changing workplace needs (Johnson and Kress, 2003). Thus the higher order skills of critical thinking, problem-solving and creativity have become inter-twined with other generic high level skills such as information literacy, superior communication ability, and team working. These skills are driven by the changing pace of new technologies and communication mediums, and although they are not always explicitly taught, the do form a major part of the student experience and are often assessed implicitly within the courses that students undertake.

However, whilst these kind of generic information literacy and communication skills are important, it may be the case for some at least, that they have become the 'tail wagging the dog', so to speak. Thus whilst learning technologists have been keen to stress the benefits of new technologies, the have formulated these within an overarching discourse of digital literacies (Beetham et al. 2009). However, this recasting of higher order learning outcomes leaves wider concerns with academic and textual literacies behind and strips the these outcomes of their association with disciplinary knowledge and instead promotes a competency-based agenda (Lea, 2013). This has resulted in the term 'digital literacies' in higher education being associated with more instrumental purposes such as producing graduates that are 'fit for purpose', that is that have a range of transferable skills and competencies that can be applied to lifelong learning and the world of work. Those who are enthusiastic about promoting learning technologies in this way tend to base their arguments upon: (i) the need for higher education to respond to a generation of students who are familiar with these technologies (e.g. wikis, blogs, social media, twitter etc.) so that they are aligned with practices in higher education, including assessment practices, and (ii) that educators need to develop their own skills in utilising these new digital technologies to enhance and improve their teaching and learning strategies and practices.

The wider implication of this conceptualization of digital literacy is that it extends beyond higher education to digital society, as something that higher education must engage with itself if it is to adapt to a changing world. This view of literacy presents an 'impact model' in which new digital technologies impact upon higher education which in turn must produce students who can use these technologies to make an impact upon themselves and the their world. It is an autonomous conceptualization of literacy as if it were a stand-alone facet of learning, as something concerned with technical skills and proficiencies including cognitive skills. What this view does not engage with is the ways in which literacy is bound up with practices of knowledge making and representation and power. It is of

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course that latter than many academic would argue are the very things that students should be engaging with in a reflexive manner within higher education and that these constitute higher order learning and skills within disciplinary and inter-disciplinary contexts.

Lea (2013) also makes the point that higher education is often presented by enthusiast for new learning technologies as conservative and slow to change. In other words, teaching staff are viewed as requiring more training through workshops and the like to engage with these new technologies so they can see the benefits of them for their pedagogical practice, include as noted above, assessment practices. This presents staff as being deficient in their pedagogic knowledge and practice, which they need to keep up with the pace of modern technology. Moreover, it also promotes the idea that teaching staff need to adapt to their learners as competent professionals. This discourse marginalises the role of teachers and places them in the position of 'playing catch up' with the technology. In this way it is not only that curriculum and assessment that required to be aligned but also that teaching staff need to be aligned with the requirements of new technologies.

Brabazon (2007) argues that being a student in today's world of higher education is like living in someone else's iPod given the need for permanent reskilling. This is considered as necessary in order to mirror market flexibility and produce graduates whose programmes of study develop the skills associated with such a requirement for flexibility. It is claimed subject content has become a means to procure more or less elaborate competencies, and as a result, graduates are considered as no more than aggregates of attributes. (Brabazon, 2007, p. 163) argues that: "The transference from a manufacturing to an information-driven economy necessitates permanent reskilling [and that] the cost of labour market flexibility is educational standards and scholarly excellence." The danger here for higher education is that student learning is reduced to solely being an index of employability. It is easy to understand why this is the case given the present economic climate but it is arguable that higher order skills should be considered s something more than simply developing the student into a 'future worker'. The capabilities of new technologies and new forms of assessment can still be utilised alongside 'old' technologies in such a way that we ensure that scholarship, critical thinking and creativity are the drivers of higher education. The next section explores the practices associated with the development of higher order skills.

HIGHER ORDER SKILLS AND PRACTICES

Slow learning through reading has in some instances given way to instant access, to snippets of 'information' that are downloaded for specific instrumental purposes such as assessments that test for specific and sometimes narrowly defined learning outcomes. This can be thought of as analogous to the way in which popular music is now downloadable in terms of specific songs. It is now easy to personalize your own choice of songs and download them at relatively little cost. Meanwhile, the idea of buying an album as a coherent body of work by an artist is to some extent on the wane. Likewise, students now download academic material to garner specific bits of information rather than to gain depth of understanding through extended reading. This might seem a depressing state of affairs, and although perhaps exaggerated, higher education is arguably moving in the direction of elevating the agency of the student in terms the ways in which students select and download material. Such a learner-centred focus is not new and has been a feature of constructivist primary school education since the 1960s. Exploration, problem-solving and creativity are often associated with this form of learning and, in particular the focus on the agency of the learner.

This is now certainly the case in higher education. Take, for example, the practices involved in constructing wikis and blogs. These may take time and certainly can be said to involve creativity and teamwork. However, the focus on digital literacy perhaps at the expense of academic literacy means that these practices, as Lea (2013) argues, have come to dominate the agenda on nature of higher order learning outcomes and skills. Failure to engage in using these technologies, to link them to innovation in terms of curriculum development and assessment seems, on the face of it, to overemphasise a conservative view of teaching and learning as the reproduction of knowledge. However, this is perhaps an oversimplification of the position. Practices of assessment such as extended essays or unseen examinations may be justifiable and worthwhile but for different reasons that in the past. If these practices Technology, Higher Education and Society (2020)

were preserved simply on the basis of tradition then this would indeed represent a straightforward conservatism. However, some practices may well be characterised as conservative but in fact provide a function that can be seen as valuable in today's world. For example, in a world where students can instantly access information at the flick of a finger it might be useful to counter this with slower forms of learning that require reading, re-reading and reflection. Information communication technology can do many things such as permit collaborative learning through working together on a wiki, or searching databases of information without having to spend weeks tracking down articles. However, whilst being accomplished in these practices may well constitute higher order skills they do not permit slower paced reflective learning which may be just as valuable. In other words just because we live in a fast paced world does not necessarily meant that students must learn to cope with the demands of that world and nothing else.

The point being made here is that what may seem like conservative practices can in fact provide a useful counterpoint to so-called innovative practices and may be just as transformative. The new pathways of information communication technologies have, and are, transforming the higher education landscape, particularly where library visits and reading book are being replaced by the retrieval of information from websites. A culture of 'fast knowledge' whilst useful in some contexts and subject areas, can be inhibiting in other contexts and subject areas. Likewise, as noted above there has been a rise in diagnostic assessment and instantaneous feedback. Again without wishing to come down in favour or against the use of such approaches, the main focus should be on the higher order skills which students acquire as part of their higher education experience. Whilst the growing use of information and communication technology has transformed the nature of learning for students such that they can now choose to engage at a distance at any time, this has also led to a shift in self-identity, from that of novice and student, to that of participant and consumer. As educational practices become more learner-centred and teachers become more resource providers and mentors then the change in relations between students and their teachers becomes itself more problematic. This is particularly the case in light of assessment where for the most part teachers are still the final judges of the quality of student learning.

Being able to access, select, evaluate, synthesize, and collaboratively transfer information between one another in an online environment is part of the array of higher order skills that require assessment. However, theses generic skills cannot be extracted from the subject areas and types of knowledge that students must work in, and with. Some practices are normative in this sense that they are a performative part of the know-how of how to get things done, what steps need to be taken and how these can be achieved in an efficient manner. This does not mean to say that they are fixed in that interpretation and adaptation are always a potential part of them. On the other hand, other practices that educators might wish students to engage in are more critical and directed at changing thinking, perceptions, values and the like. These practices often require reflection, careful thought, and develop over time in an unhurried fashion. Indeed they could be characterised as a state of mind that is reflective of the spirit of lifelong learning. In both cases it is the student's relation to these practices that is of crucial importance.

PRACTICING HIGHER ORDER SKILLS

Despite the changing landscape of higher education that new technologies have, in part, brought about, there still remains a core set of activities that constitute teaching, learning and assessment. Practices such as lectures, seminar discussions, coursework assignments, examinations, and so on, form the core activities of what staff and students are engaged in. Some of these practices are likely to be the subject of change and transformation over time or perhaps be replaced by new practices. However, the main point is that practices are activities that involve both continuity and change over time. It is the very fact that these practices involve complex interactions between leaners, staff and curricular materials that make for a set of dynamics that makes change possible. There may be aspects of assessment practices that are more appropriate at certain stages than others, or fit learners' needs more readily or require updating in the light of new relations between staff, students and the curriculum. For example, it is often the case, as in any educational endeavor, that learners requires understanding certain fundamental aspects of a subject, discipline or practice before being able to engage in a critical evaluation of that knowledge or set of practices. In higher education, although learners typically join their courses with pre-requisite knowledge and skills these are usually not sufficient to engage in being able to critically engage with the new material that they learn. Thus, even at an advanced stage of learning there is an aspect of 'taking in' a fundamental knowledge base and set of principles that

define what the subject or discipline is about. In some cases this may be familiar and lead on from school or further education learning but in other cases a whole new knowledge paradigm may be opened up to learners. In either case this early advanced education necessarily requires a degree of unquestioning acceptance in order to acquire this fundamental knowledge base. Indeed it is only through the acquisition of this knowledge that learners also acquire other kinds of tacit understanding about the nature of subjects and disciplines such as their epistemological paradigms. It is only after having acquired both this explicit and implicit knowledge that students can then go in the later stages of their programmes of study to learn to unpack their understandings and subject them to question, doubt and critique, and to appreciate the provisional status of knowledge. It is therefore integral to the learning process that higher order skills of critical analysis, problem-solving and creativity are necessarily built up from such 'unquestioned' knowledge. Therefore, learning in an unquestioning manner early on does not mean that unquestioning acceptance is being learned *tout court.* Teaching staff may well utilise Socratic methods of questioning with students throughout their higher education but this does not mean that such questioning is being used in the same way at each stage.

It is for the reasons outlined above that we should be thoughtful about *how* and *why* new technologies are used in assessment practices. Getting students to be creative early on in their programmes of study in for example, producing a blog or wiki, may serve the purpose of collaborative working and may make the experience engaging. However, the higher order outcomes of this practice will need to be carefully considered as it may help or hinder the acquisition of 'baseline' knowledge and principles and their initiation into the practices of a subject or discipline. That learning requires an initiation into practice is certainly the case but it also the case that as students' progress through their programmes of study that they develop in a relational way to their subject or discipline. This will at first be mostly about learning the 'craft' of the subject or discipline, or inter-discipline in terms of education about its methods and practices. However, later in their studies students can engage in higher order skills that evidence a critical or creative engagement. It is here that within their assessments student can be encouraged consider how practices are themselves developing via new information and communication technologies. This is one of the great advantages of the sharing capacity of new technologies. The blurred relationship between consumption and production of wikis, social networks, blogs, etc. throws into relief questions about how subject and disciplines are developing through the information that is accumulated, posted, traded, and shared. This requires a self-reflexive relationship between students and their learning, or what was referred to earlier as metacognition. This is indeed a higher order skill and one in which higher education can attach to it the concept of merit by acknowledging a commitment to critical thinking that is beyond the image of performativity in relation to simply digital literacies. This critical and more reflective mode of practicing is rooted in an enactment of participating in practices of knowledge generation and exchange whilst also at the same time maintaining a 'distance' from these in terms of subjecting them to scrutiny, question and potential transformation.

CONCLUSION

Student learning is driven to large extent by assessment practices. As has long been recognized these practices need to be aligned with the curriculum in such a way that students develop the higher order skills that are deemed to be in line with the 'higher nature' of higher education. There are certainly many drivers of change in assessment, of which new technologies have come to play a major part. However, as this paper has argued educators need to be careful that the 'tail does not wag the dog', I the sense that these technologies are used without sufficiently careful thought about the pedagogical rationale behind them. It is not enough to simply make use of them on the basis of their face value in engaging students because these are the very technologies they are familiar with. Like all technologies, be it pen and paper or tablets and social networking platforms, they have multiple uses like tools in a toolbox.

There are a number of assumptions made about the higher order skills that are capable of being developed through assessments that utlise new technologies. These are often framed in terms of an aligned curriculum that a positions learner as active enquires. However, these assumptions are rarely tested but are grafted onto the rationales for making use of such technologies. In the case of collaborative exercises it may well be the case that learners are passively consuming information by reproducing information from online sources through cut-and-paste operations

rather than engaging in a genuinely collective construction of a wiki. Thus what is superficially labeled as 'collaborative' learning may be nothing more than an exercise in co-operation or co-ordination (Selwyn, 2013, p.205). This kind of learning can be characterized as developing a competence rather than a higher order skill. Indeed as there is often more than not the assumption that learners freely engage with digital learning technologies in some independent and autonomous manner that underplays the role of formal teaching and learning.

It is not a case of either accepting or rejecting new technologies but of recognizing that the development of higher order skills is not rooted in the technology *per se* but rather in the kinds of skills that *in practice* students engage in and with. As Selwyn (2013, p.207) points out, there is often a tendency to discuss educational technology in terms of what *should* happen and what *could* happen through the introduction of new technologies. His point is that we should focus on the "'state-of-the-actual' rather than the state-of-the-art'". To this could be added that we should focus on the pedagogical state of both as we attempt to define what we mean by the development of higher order skills in higher education.

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