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284: Filling a pail or lighting a fire? The intellectual development of management undergraduates

Berry M. O'Donovan, Oxford Brookes University

Berry O'Donovan is a Deputy Director of the ASKe Centre for Excellence (Assessment Standards Knowledge exchange). She is also the Head of Learning and Teaching Development in the Business School at Oxford Brookes University and a National Teaching Fellow. Berry's teaching primarily focuses on orientating new students into the academic demands of management education. She has published on assessment and feedback for over a decade, and more recently on intellectual development and learning transitions.

(86 words)

Abstract

This paper examines the intellectual development of undergraduates with reference to research undertaken with a cohort of undergraduates on entry to a business and management degree. Using Baxter Magolda's Measure of Epistemological Reflection (1992; 2001), findings indicate that the majority of new students hold dualistic and absolute beliefs in which knowledge is seen as certain and a transmission approach to teaching valued. Statistical cross tabulations on age, gender, nationality and academic performance revealed two of significance, academic performance and nationality, and these are discussed along with the wider implications for learning, teaching and assessment. The paper concludes that intellectual development of students can be supported by appropriate assessment and learning activities, and that there are strong arguments for commencing an intentional process early in the unfrozen, transitional period of the first year of an undergraduate degree. Such a process may result in an uncomfortable student experience and therefore provoke negative student evaluation. Consequently, students need to understand the development process and reasoning behind adopted pedagogies, not only to militate against negative course evaluation and alleviate anxiety, but also to support their intellectual development. It takes time for substantive intellectual development to occur and a programme approach is a necessity.

Keywords: academic performance; epistemological beliefs; intellectual development; management education

Introduction

Arguably almost everyone involved in higher education (HE) would view the intellectual development of students as an important goal. Perhaps, almost as many would also see HE as an opportunity to do more than just accurately transmit the subject knowledge, techniques and competencies considered directly relevant to a student's future career. Indeed, many of us would agree with this quote attributed to Yeats: "education is not the filling of a pail but the lighting of a fire". Some of us may even advocate HE to be truly intellectually flammable, conceptualising quality as a transformational process beyond the technician and competent, that extends towards the development of the critical and reflective person (Curzon-Hobson, 2003). Management education in particular has come in for criticism for an over emphasis on analytical techniques, and overly simplistic and stylised case studies (Grey, 2004; Mintzberg, 2004; Bennis & O'Toole, 2005). With this in mind, this paper examines the epistemological beliefs of management undergraduates with reference to empirical research and explores the wider implications for learning, teaching, assessment and evaluation.

Understanding students' intellectual development

Prior research founded on the groundbreaking work of Perry (1970) indicated that students move through stages of intellectual development in which their epistemological beliefs about the nature of knowledge change and develop in complexity and understanding. Undergraduates enter university with a cluster of assumptions about the nature of knowledge, methods for meaning making, and beliefs about the attributes of "good" teaching (Perry, 1970; Baxter Magolda, 2001; Kember, 2001). New undergraduates' ways of knowing are characterised by Perry (1970) as "dualistic", and by others "received" (Belenky, Clinchy, Goldberger, & Tarule, 1986) and "absolute" (Baxter Magolda, 1992, King & Kitchener, 1994). Students with these kinds of interpretations of knowledge believe that there are single right answers to most questions; good teachers tell them what these are and then support them in the memorisation and reproduction of such "truths" (Pizzolato, 2003).

As students develop intellectually, their ways of knowing become increasingly complex and relativistic. Knowledge is seen as contestable and multiple perspectives are acknowledged (Perry, 1970). It is also seen as constructed rather than received (Belenky *et al.*, 1986), and the contextual nature of knowledge is recognised (Baxter Magolda, 1992). Consequently, it should be of concern to us all that HE, and management education in particular, may not be supporting such intellectual development. Worryingly, some studies

indicate that the ways courses are designed and assessed can actually inhibit intellectual development. Indeed, there are indications that an emphasis on declarative knowledge and techniques, often emphasised in the initial stages of a degree, can block intellectual development and confirm students' dualistic beliefs about the nature of knowledge and a surface approach to learning (Entwistle & Entwistle, 1991; Fazey 1996; Wise, Chang, Duffy, & del Valle, 2004). Höpfl (2005) described education in business schools today as where "everything is straightforward, linear, in neat text boxes, supported by simple examples: an orderly world which is easily digestible" (p. 67). This damning description is reflected in many of the ongoing critiques of management education today (see, for example, Grey, 2004; Mintzberg, 2004; Bennis & O'Toole, 2005). Consequently, management education may be more at risk in terms of hindering intellectual development than other disciplines.

The aims of the study

The research was undertaken within a large business and management degree course in a post 1992 UK university. The goal of the study was to identify and map the stage of intellectual development of business undergraduates on entry to their first year. The study consisted of a large scale qualitative analysis of students' beliefs about the nature of knowledge and learning and teaching, and thereby discerning students' expectations of their business degree and their tutors. Due to the size of the study it was also possible to investigate if students' stage of development correlated with their assessed performance, age, gender and nationality. More practically, this research was also undertaken to inform curriculum developments during a major revamp of an undergraduate business and management degree programme due to an institution-wide restructure.

Method

Instrument

Data were collected using Baxter Magolda's (1992) Measure of Epistemological Reflection (MER). This qualitative instrument seeks to determine students' epistemological beliefs on the nature of knowledge, the students' role as learner, and their views on the role of tutors, peers and assessment. Baxter Magolda argued that the instrument allows the researcher to determine students' "ways of knowing", a term Baxter Magolda explained as follows:

Students interpret, or make meaning of, their educational experience as a result of their assumptions about the nature, limits, and certainty of knowledge. Such assumptions referred to by researchers as epistemic assumptions, collectively form "ways of knowing". (1992, p. 3)

Thus the instrument seeks to understand students' epistemological assumptions, rather than their achievement of particular learning strategies or skills (Baxter Magolda, 2001) The instrument consists of a series of open ended questions that probe student perspectives in five learning domains: their role as a learner; the role of their peers; the role of tutors; role of assessment; their beliefs about the nature of knowledge; as well as decision-making. Prior research suggest that such open ended questions provide a more accurate representation of students' intellectual development than other more positivist surveys where students select from a number of provided options (Gibbs, Widaman, & Colby, 1982).

Sample and data collection

The questionnaire was delivered to 557 students from 68 nationalities at the start of the second week of their business degree programme. The perimeters and objectives of the study were explained to students via an information sheet that made it explicit that completion of the questionnaire was both optional and confidential, and would not affect their grades. With this assurance, and a despite a warning that the completion of the qualitative questionnaire could take more than 45 minutes, 248 usable responses were returned. This high response rate (44.5%) is likely a reflection of the compliant nature of students within the early weeks of their HE. Data analysis of 200 questionnaires was undertaken by two analysts independently and then findings discussed to support dependability of interpretations. Kvale (1996) described this as “agreement through rational discourse and reciprocal technique” (p. 65). Only 200 responses of a possible 248 were analysed as the high response rate took the researcher by surprise and the analysis was discontinued at the 200th questionnaire due to time and resource constraints. Subsequently, a review of the remaining 48 was undertaken to assure the researcher that they were not materially different, in terms of student characteristics, from the 200 analysed responses. The responses were interpreted and categorised using Baxter Magolda's model (1992), the five learning domains of which are depicted in Table 1.

Domains	Absolute knowing	Transitional knowing	Independent knowing	Contextual knowing
Role of learner	<ul style="list-style-type: none"> obtains knowledge from tutor 	<ul style="list-style-type: none"> understands knowledge 	<ul style="list-style-type: none"> thinks for self shares views with others creates own perspective 	<ul style="list-style-type: none"> exchanges and compares perspectives thinks through problems

				<ul style="list-style-type: none"> • integrates and applies knowledge
Role of peer	<ul style="list-style-type: none"> • share materials • explain what they have learned to each other 	<ul style="list-style-type: none"> • provides active exchanges 	<ul style="list-style-type: none"> • shares views • serves as a source of knowledge 	<ul style="list-style-type: none"> • enhances learning via quality contributions
Role of tutor	<ul style="list-style-type: none"> • communicates knowledge appropriately • ensures that students understand knowledge 	<ul style="list-style-type: none"> • uses methods aimed at understanding • employs methods that help apply knowledge 	<ul style="list-style-type: none"> • promotes independent thinking • promotes exchange of opinions 	<ul style="list-style-type: none"> • promotes application of knowledge in context • promotes evaluative discussion of perspectives • student and teacher critique each other
Assessment	<ul style="list-style-type: none"> • provides vehicle to show instructor what was learned 	<ul style="list-style-type: none"> • measures students' understanding of the material 	<ul style="list-style-type: none"> • rewards independent thinking 	<ul style="list-style-type: none"> • student and teacher work towards goals and measure progress • measures competence
Nature of knowledge	<ul style="list-style-type: none"> • is certain or absolute 	<ul style="list-style-type: none"> • is partially certain and partially uncertain 	<ul style="list-style-type: none"> • is uncertain - everyone has own beliefs 	<ul style="list-style-type: none"> • is contextual: judge on basis of evidence in context

Table 1: Baxter Magolda's Epistemological Reflection Model (1992, p. 75)

It is useful to highlight that the classification of a student's stage of development represents an overall assessment of an individual student's way of knowing. However, within this overarching classification students may exhibit different stages of knowing in different domains. For example, a student classified as Absolutist might demonstrate some Transitional tendencies in one or two of the domains. Academics involved in the marking of assignments with rubrics representing multiple criteria may find such overall grading familiar practice. An assignment graded as a B may have some attributes considered to be at an A grade of achievement and others at a C grade. The final classification is therefore

not solely determined by a mechanistic addition of domain categories but involves a holistic judgment of responses - a method of assessment posited by Sadler (2008) as more likely to give valid results.

Limitations of the study

The data collection method was both beneficial and limiting. The MER is more commonly used as a basis for individual interviews and not as a written questionnaire. It was used as a written questionnaire in this instance because a larger scale study was sought to more clearly understand and pattern the attributes of a large cohort of first year students, not just for research purposes but also to inform local teaching practice. Many authorities suggest that it is crucial to take account of where students are in terms of their epistemological development to improve teaching practice (Parker, 1978). Indeed, it was because of the ability of the MER to be used on a large scale whilst still allowing students to form their own responses to open questions that it was chosen. However, as Severiens, Ten Dam and Nijenhuis (1998) suggested, having used both questionnaire and interview data collection methods in the context of Dutch adult education, the interview method does make it possible to stay closer to the MER model. So whilst scale made it possible to gain understandings that could be generalised, as well as allowing categorisation of the student cohort as a whole, it did diminish rich qualitative understandings on patterns of reasoning in which students who share “basic assumptions about knowing went about it in different ways” (Baxter Magolda, 1992, p. 14). Consequently, no assertions about students’ patterns of reasoning are made in this study.

Finally, even at the early stages of student experience of HE we posit, like Severiens *et al.* (1998), that the educational context affected findings. At the beginning of their second week at university, just before they completed the questionnaire, students had taken part in a lecture and seminar session on critical thinking, in which the importance of context, authority and evidence-based reasoning had been explored. This clearly influenced their responses as it was often alluded to in the completed questionnaires. Responses were taken at face value and no evaluation of espoused versus “real” views was made. Consequently, it might be expected that this would increase the number of students purporting to a contextual way of knowing. However, only a very small proportion of first year students (see Table 2) were interpreted as belonging to this final category.

Findings from first year students on entry to HE

The 200 questionnaire responses from first year students reflected perspectives from 36 different nationalities and revealed the following summary data on “ways of knowing”.

	Number	Percentage
Absolute knowing	91	45.5
Transitional knowing	84	42.0
Independent knowing	21	10.5
Contextual knowing	4	2.0

Table 2: Ways of knowing of business undergraduates at entry to university

Absolute knowing

Students in this category were dualistic, viewing knowledge existing in an absolute form, the only uncertainty being when the answer was not known.

A fact is a fact, you either know or you don't, right or wrong. There is no room for error.

Two explanations can't be right, one will be accurate.

Students saw the role of learning as reproductive, valuing skills such as good note taking and recall. Good grades were considered solely dependent on effort. In response to a question on how to do well at university, students suggested:

You must read everything and recall it and then put it down.

Organised files and good note taking are really important.

Attend all the lectures and take good notes.

Good grades result from working hard and long.

Their views on the role of teacher were similarly clear, in that tutors must be expert in subject knowledge and communicate knowledge well, in ways that make it simple to understand and easy to learn.

The teacher is the expert, not the students.

Good instructors focus only on key points and use clear language.

Whilst these students valued the transmission approach to learning and teaching, they did acknowledge the problem of losing interest and attention in such delivery modes, and many made suggestions as to how to deal with this.

A really good teacher in my school used to keep us awake by randomly shouting out an important sentence.

Tutors who raised the spectre of uncertainty, or who did not present knowledge as absolute and focused on memorisation, were considered as lacking in both teaching proficiency and knowledge. For example, after a session exploring the contextual nature of management which purposively explored uncertainties, many students attributed lack of certainty on the part of the lecturer to a lack of proficiency, and many gave advice on how to make knowledge less confusing based on their experience of good teaching in their prior studies.

The most important thing I learned today is that if teachers are not certain about stuff in the lecture it will be a disaster really confusing. They should make sure they know the facts and what is correct before giving a lecture.

My A Level book is much simpler and straightforward I would recommend it [gives name of text].

She [the tutor] needs to find out the right info and make sure we know it. All this “he says this but he says that” it is better to just give a straight answer.

Perhaps because they saw the consequences of uncertainty and confusion as both dangerous and likely, students were already worrying how they were going to cope with assessment within a learning context that was giving them no right answers. Many students were keen to get sheets of key points that they could memorise.

He [a previous school teacher] really prepared us well for our exams and coursework telling us the key points and having us repeat them until there was no doubt. I would recommend this method I did very well in my A Level.

We need clear feedback on what we know. I want to know I have learnt the key points before any exam.

I am worried that you are asking us how we should be assessed [in response to a question on who should assess student work]. The teacher evaluates what we have learnt. What other way can there be?

On the role of peers, respondents sometimes valued discussion with other students but only because it made the lesson more lively and there was “less chance of falling asleep”.

Peer contribution per se was not valued as a way to increase knowledge or understanding:

I go to class to get info, not to give info.

They [students] sometimes talk irrelevant info [sic] when the teacher may as well just tell us.

Let the teacher talk, too many people speaking is time consuming, just tell us what we should learn.

People are allowed their own opinion and it is interesting to hear them, but we could get confused to what is correct.

Many of us may recognise students that we have known in this category: prepared to put effort into their studies in terms of attendance and rote learning but expecting to passively sit back in class and look to the tutor to feed them with “correct” knowledge, uncomfortable and anxious if their expectations about this are not met.

Transitional knowing

Students within this category referred to understanding material, frequently categorising knowledge as that which is certain and uncertain, often seen as relating to discipline.

I did A-level chemistry and things are more straightforward and right than in business studies.

The accounting teacher makes things very clear and corrects wrong work.

There are no seminars in accounting. You don't debate accounting you just get on with it.

Some students recognised the value of interaction with their peers and tutor but some still did not recognise the contestability of knowledge.

Discussion helps you and the teacher know who understands and who doesn't.

It helps with realising your mistakes by speaking them out.

Others acknowledged multiple perspectives but would base their choice of explanation on that which was easier to understand, a surprisingly prevalent way of choosing between options. In response to a question asking how one would choose between two conflicting explanations for the same phenomena students wrote:

I will choose the one that is easier to understand.

Management should be easy, there is no right answer but it doesn't make it easy, I choose the answer that I understand and makes sense.

At this stage the tutor's role was seen as slightly wider than that of purveyor of knowledge, and more about designing and using appropriate activities to both apply and check understanding.

Good teaching is doing class exercises you could learn how to do what was taught to you and learn from mistakes, also had someone to advise you if you didn't understand.

I really enjoy field trips they make things concrete in your mind.

I like teachers that use lots of examples it makes things much easier to understand.

Students whose understanding of knowledge fell within this transitional category mainly saw the role of assessment and feedback as checking understanding.

Example questions that we answer on our own to make sure we understand.

I prefer coursework to multiple choice - I can apply my knowledge and show understanding.

Many responses suggested that one teacher on their own might not be able to mark dependably. This doubting of a one-person assessment judgment seemed to go hand-in-hand with an incipient understanding of the uncertain nature of knowledge and a growing understanding of the fallible nature of authority. However, it was considered the tutor's role to undertake assessment. In answer to a question on who should assess their work:

Best to have two or three tutors assessing our work.

There needs to be more than one teacher marking to be fair.

Independent knowing

In the independent knowing category, students moved on from viewing knowledge as established certainty and started to accept the contestable nature of knowledge and, within this uncertainty, began to distil and voice their own perspectives. This way of knowing echoes the notion of 'finding voice' in the research of Belenky *et al.* (1986). Some students found this new paradigm uncomfortable, expressing discomfort and hankering after past certainties.

Sometimes the desire for concrete is overwhelming.

I wish things were more certain in business, I wish I had been better at maths.

Facilitation was now favoured over didactic delivery and students valued their own contribution as well as that of peers, finding discussion helpful in clarifying their own perspectives.

My school teacher used to really ask our opinion about things and then get us to discuss why - it really helped me.

I don't like just learning facts I like ideas and concepts and applying them to my own experience and listening to others.

I like it when class members help each other and we don't just rely on the teacher's opinion. I prefer seminars to lectures.

Students recognising the uncertain and often constructed nature of knowledge wanted assessment to be balanced between tutors and self, often wanting a tutor to assess their work with whom they had a personal relationship.

I want to be part of the process - it is my work I should be able to discuss it.

I would like my work to be evaluated by my tutor, personal tutor and myself.

There were hints that finding voice caused some problems with assessment, particularly with assessment tasks that were mainly targeting the measurement of declarative knowledge:

At school the history teacher often said history wasn't truth just the opinion of different people, but in the exam there still seemed to be a right answer that they wanted.

I used to really like multiple choice and hate it now, there is no room for explanation why you feel the way you do. I didn't think there would be multiple choice at university.

Contextual knowing

Reflecting Baxter Magolda's (1992) research, very few students were considered to have reached the stage of contextual knowing. Only four students were evaluated as displaying the attributes of contextual knowing, in that they demonstrated characteristics of independent knowing as well as considering their own perspectives in relation to contextual evidence. When writing about the nature of knowledge and teaching, they questioned whether ideas and perspectives would be applicable in different contexts.

Western teaching rarely considers Eastern perspectives on issues - really ethnocentric. Will these management ideas work somewhere else?

People have different perspectives on things - think about two people discussing WW2 that are English and German. I'm English and have an English view of things, but if I was German I would have a different view.

My A-levels needed me to think in different ways, you can't think the same way in different subjects and different situations.

Students operating at this contextual level recognised that some ideas were more valid than others and some authorities more credible.

I know that some info is better, more solid, than others. I think education is knowing how to determine what is better information and why. I don't think you can get that from a teacher just saying 'this is right because I say so'. You have to get there yourself.

Being a teacher doesn't make you right, but it probably makes you more likely to be so, because they have spent time thinking about how all this applies to many different situations.

Statistical analyses

As the first year sample was large enough to bear statistical analysis, even within this primarily qualitative study, associations were explored between ways of knowing and age, gender, assessed performance and nationality. Perhaps surprisingly no significant relationship with age (.422) or gender (.457) was found. In their research, Baxter Magolda (1992) and Severiens *et al.* (1998) found that students of different sexes display qualitative differences in how they justify their epistemic assumptions in the *same* stage of intellectual development. However, in this study, a link with gender was not verified. However, associations between ways of knowing and assessed performance, and nationality, surfaced.

Based on prior studies it would seem reasonable to posit a connection between intellectual development and grades. Accordingly, associations were initially run between ways of knowing and students' final mark on their core integrated first-year (30 CATS point) module, but initially no significant relationship was found. However, students' marks were derived from combining marks awarded for an integrated case study and an examination. When each was investigated individually, a robust association (p-value) between students' level of intellectual development and coursework marks (.001) was found, but not with their exam results (.678).

Although 36 nationalities were represented in the sample, only two nationalities were sufficiently represented within the sample to be statistically legitimate: Chinese and UK. Of the 30 Chinese students, 21 were absolute, 8 transitional and 1 independent. Of the 105 UK students, 42 were absolute, 19, transitional, 42 independent and 2 contextual with

a statistically significant association between these two nationalities and ways of knowing (.005).

Discussion and implications

The bottom rung of the intellectual development ladder

Perhaps it is not surprising that the majority of first year undergraduates view knowledge as absolute and certain. These findings accord with those of Baxter Magolda (1992) in her longitudinal study in which few students in the sample exhibited independent or contextual knowing at the start of their college education. Such findings may also resonate with the experience of colleagues teaching business and management who bemoan the lack of criticality or evaluative behaviour in first year undergraduates. However, the causes for this condition and possible responses in terms of learning, teaching and assessment strategies are not so well documented.

Within UK school education it has been argued that increased national testing of performance throughout the school years has resulted in teachers spending substantial time preparing students for such tests (Sturman, 2003). Some experts suggest that this focus has compelled students in recent years to concentrate on memorisation behaviours, at the expense of curricula breadth and balance (Boyle and Bragg, 2006). Consequently, it is perhaps unsurprising that students from the UK arrive already conditioned into reproductive learning approaches and anticipating more of the same.

Turning to the dualistic perspectives of Chinese students, it is useful to reiterate some of the conflicting views on whether or not these findings are surprising. Brown (1998) reminded his readers that knowledge traditions and values emanate from cultural and historical contexts; Smith (1998) concurred, adding that epistemological belief systems are defined by local contexts. The political and cultural context of Chinese education, described by Turner and Acker (2002), is characterised as absolutist and militating against critical enquiry. Within the UK, practice-based research indicates that Chinese students studying in the UK demonstrate relatively established and widespread beliefs in declarative knowledge and rote learning (see, for example, Woodrow & Sham, 2001). However, Turner (2006), pulling together previous research (Biggs, 2003; Devos, 2003), amended these views. She suggested that there is little evidence to support the assertion that Chinese students find it innately more difficult to reflect on existing knowledge in relational and conditional ways. Turner further suggested that Chinese students may be stereotyped on stylistic conventions rather than intellectual substance, pointing to

previous research that reflects their struggle with articulating critical and contextual reasoning processes in a Western style (Biggs & Watkins, 2001). Ultimately, it is worthy of note that most students, regardless of nationality, retreat to surface approaches to learning when adapting to new situations (Rodríguez & Cano, 2006). Kember's (2000) research indicated that learning transitions for Asian students take place over 3 to 9 months from arrival into a new national educational context and, within this time frame, international students may cling to rote learning and surface approaches to carry them through. Overall, this research suggests that whilst students exhibit national and cultural differences on entry to HE, the majority of *all* undergraduates come with dualistic perspectives that have been formed within prior educational contexts, whatever their nationality.

On the assessment front, it is reassuring to find a significant correlation between the grade that students were awarded for a piece of coursework, submitted a few weeks into their course, and their identified stage of intellectual development on entry. Again, it is interesting to note that no significant correlation surfaced between their stage of intellectual development and their exam grades. This corresponded with the course leader's view of the role of the exam as testing declarative knowledge and techniques, compared with the role of the case study coursework to assess a more critical ability to construct an evidence-based, convincing and contextual argument.

Implications for practice

Clearly, if the majority of students on entry to management education arrive with dualistic beliefs, there is a need to challenge such beliefs to encourage epistemological change. Furthermore, it seems reasonable that such challenge and development should be intentionally designed into curricula as it will require both time and support to engender. However, it is not school education alone that stands accused of promoting and confirming dualistic beliefs and surface approaches to learning. Management education has been the subject of sustained criticism for its emphasis on analytical techniques and overly simplistic and stylised case studies (Grey, 2004; Mintzberg, 2004; Bennis & O'Toole, 2005). It is posited that the intellectual development that does take place within management education does so seemingly serendipitously. Academics bemoan the lack of higher order skills and beliefs, described in various ways such as "critical analysis" or "critical thinking", but without a common view on what these terms mean (Webster, Pepper, & Jenkins, 2000; Turner, 2006), let alone having an explicit and shared understanding of systematic methods of developing such ways of knowing. On one level, intellectual development seems fairly straightforward. As Kember (2001) asserted, students "will not

develop towards higher order epistemological beliefs if teaching and assignments reflect factual material verified by authority” (p. 218). However, if true intellectual development involves transition from certainty to uncertainty, and thereby some confusion and discomfort, how do we best support students through this uncomfortable process, particularly when the process may result in negative tutor evaluation?

Few would argue that assessment drives student learning (Ramsden 1992; Brown & Knight, 1994). As Brown, Bull and Pendlebury (1997) claimed:

Assessment defines what students regard as important, how they spend their time and how they come to see themselves as students and then as graduates... If you want to change student learning then change the methods of assessment. (p. 7)

However, despite the rhetoric of HE, experts suggest that much university assessment merely demands skills of description and reproduction, rather than critical and contextual understandings (Newstead, 2002; Biggs, 2003). Indeed, Gibbs (1992) asserted “even when lecturers say that they want students to be creative and thoughtful, students often recognise that what is really necessary, or at least what is sufficient, is to memorise” (p. 10). An emphasis on declarative knowledge and assessment tasks which confirm and embed students’ dualistic beliefs is particularly likely to flourish in a student’s first year of university education (Gibbs, Widaman, & Colby, 1982). Within management education, this is again particularly likely to be the case. Due to resource constraints, the assessment of large numbers of students is often undertaken within business programmes through the use of multiple choice or short answer questions with right or wrong answers. Students are thereby immersed in the memorisation of techniques, vocabulary and simplistic interpretations of generic theory.

Towards the end of their degree, when students have demonstrated that they are cognisant of the basics, they may be challenged and perhaps bewildered by assessment that demands more critical and evaluative responses. We may be doing a disservice to our students by following this strategy. Arguably, it may be more effective to encourage students towards epistemological change whilst they are in a transitional state on entry to university. At this point, using Lewin’s (1951) terminology, students can be conceived as being in a relatively “unfrozen” state. They are expecting change, indeed a few may even be looking forward to intellectual challenge, and bored and disengaged by yet more of the same. Even Bloom (1956), whose taxonomy of educational objectives many cite as the rationale for a sequential approach to cognitive development, believed that education

should focus on the promotion of higher forms of thinking, rather than simply transferring facts. Pragmatically however, it must be recognised that challenging new undergraduates to unpick their epistemological beliefs without distress is a delicate balancing act. As Lochrie (1989) suggested, whilst intellectual development requires that the belief systems of students are subject to challenge, it is important that there are sufficient support structures in place to ensure students are not too uncomfortable or overwhelmed.

Intellectual development takes time. The fragmented approach to HE embodied in the now ubiquitous modular system can militate against coherent teaching, assessment and support structures that scaffold intellectual progression. It would, for example, seem unreasonable to expect that one lone critical thinking module in students' first year would be enough to trigger enduring and substantive development. An increased emphasis on programme coherence, that compels conversations between academics towards agreement on structures and pedagogies that support intellectual development beyond that of individual modules, may be the most effective way to intentionally promote such epistemological change. Indeed, without whole programme agreement it may be reasonable to suppose that tutors, fearing poor student evaluation, may steer well clear of intentionally challenging student beliefs and expectations in discomfiting ways.

Within UK HE an increasing emphasis on student evaluation, as exemplified by the National Student Survey, perhaps foreshadows an American system in which instructor evaluations are viewed as the "de facto 'gold standard' of retention, tenure and promotion decisions" (Gerstman, 1995, p. 122). Student resistance and initial dislike of innovative and discursive forms of teaching has been cited as a reason for sticking to didactic teaching methods (McKay & Kember, 1997) and deterring tutors from challenging students (Kolitch & Dean, 1999). Hutchings (2005) suggested that one way to get students to accept learning challenges is to facilitate their understanding of the learning journey and the rationales for programme pedagogies and structure, to become in her words "pedagogically intelligent". Such pedagogic literacy may also increase the perspicacity of student evaluation of their learning processes and environment to the benefit of all.

Conclusion

Research into learning and teaching should arguably inform those involved in teaching practice and thereby suggest improvements to that practice. Essentially, from this research it is posited that the majority of business and management students on entry to HE hold dualistic and absolutist beliefs and, although there are differences between cultures, the majority of new undergraduates from whatever background arrive with such

beliefs. The intellectual development of students can be supported by appropriate assessment and learning activities that challenge these beliefs, and there are strong arguments for commencing an intentional process early in the unfrozen and “teachable moment” of the first year of an undergraduate degree. Such challenges may result, at times, in an uncomfortable student experience, and as consequence may produce negative student evaluations of their teaching experience, at least in the short-term. It perhaps behoves us to be reminded that substantive intellectual development, and thereby lifelong learning, requires more than jumping over a few disconnected educational hurdles (Hutchings, 2005). Consequently it is suggested that students need to more fully understand the development process and be cognisant of the rationales for the pedagogies and structures of their HE programme, not only to militate against negative course evaluation and alleviate anxiety, but also to support their intellectual development. Finally, it takes time for substantive intellectual development to occur, and this demands a coherent and evidence-based programme structure and pedagogy.

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