THRESHOLD AND TRANSFORMATION

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ABSTRACT

This paper explores two closely-related concepts of relevance to teaching and learning in higher education and management education, in particular: threshold and transformation. Threshold concepts and transformational (or transformative) learning are defined and explained, and their relevance demonstrated, with reference to germane theoretical underpinnings and established practice. A dozen threshold concepts are identified that characterise the higher education classroom employing student-centred, experiential, and holistic education to achieve deep learning. Three are explained in detail to illustrate threshold concepts and how they work: the process is the solution, teaching for the unknowable, and the classroom as a community. Four extensive vignettes depict threshold and transformation as they emerge in the management classroom, revealing the conditions in which they might occur, the threshold moment, itself, and the transformation and its impact on individual learners and others in the class. The synthesis of threshold and transformation this paper introduces shows how the two concepts are integrally related and operate synergistically to produce remarkable learning outcomes. It is argued that conventional approaches – exemplified by eight “unspoken rules to management education” – fall short in equipping students for an unknown and, perhaps, unknowable future. Applying the principles of threshold and transformation is a new approach to teaching and learning that better prepares students for the real world, and may revolutionise the way students and teachers experience and exploit the classroom.

Keywords: Higher Education; Learning; Pedagogy; Management Development; Management Education; Threshold Concept.

1. INTRODUCTION

This paper explores and presents a synthesis of two closely-related concepts of relevance to teaching and learning: threshold and transformation. To begin, threshold concepts in education and transformational (or transformative) learning are defined and explained, and their relevance demonstrated, with reference to germane theoretical underpinnings. The paper then considers threshold and transformation within the context of related teaching and learning theory and strategies, including deep learning, holistic education, and student-centred learning.

It should be noted that there remains scant research on threshold concepts in education and nothing directly that supports the author’s expanded definition. There is much more available on transformational learning and, while as far as the author can tell, no treatment of transformational learning incorporates the term “threshold,” there is support for transformation as a process and consisting of steps (see King, 2007, for example.) Sources reviewed for this paper directly covering threshold concepts include: Clouder (2005), Cousin (2006), Davies and Mangan (2005), Eckerdahl, et al (2006), Gimble (2004), Meyer and Land (2003), and Meyer and Land (2006). There is a wealth of interesting, diverse, and useful literature on deep learning, holistic education, and student-centred learning, just a few of which include Bell and Lane (1998), Brown (2004), Cornelius-White (2007), Piper (2004), Robinson, Jones, and Hayes (2000).

In pouring through course outlines, student learning journals, and teaching notes, and in speaking with colleagues and students in preparation for the writing of this paper, it became obvious that two key terms embody much of what the author wishes to say about threshold and transformation: “penny drops” and aha! moments. So important they became in thinking through and describing threshold and transformation that they earned their own section in this paper. “Penny Drops” and Aha! Moments conveys the relevance of these terms to the current study, tracing their emergence out of classroom experiences and describing the significant role they played in (a) stimulating the learning process and (b) helping students to better understand that learning process. “Penny Drops” and Aha! Moments also contains four vignettes selected from course histories to illustrate threshold and transformation—their genesis and precipitating factors, the event, itself (that is, the threshold “moment”), the transformation,
and its effects on those transformed. Discussion and analysis of the vignettes includes consideration of the factors that promote and impede threshold and transformation, and enumerates presumed benefits and positive outcomes for learners and society.

The concluding section speculates on the implications of threshold and transformation, including the raising of social, ethical, and practical issues of relevance to higher education and the management discipline, in particular.

The paper may be of particular relevance to management educators as the author, himself, is a management faculty member and a practicing management consultant. The vignettes included to elucidate threshold and transformation showcase courses from the author's teaching of undergraduate and graduate management courses, including MBA. And, while no specific cases are presented, the author's views are in no small way influenced by his years of intense work with teams and other work groups in the public and private spheres. This said, it is highly likely that threshold and transformation as discussed here apply across disciplines or transfer easily. They apply equally well to the adult education context, and are central to both human and community development (see Christopher, Dunnagan, Duncan, and Paul, 2001; Gray, 2006; King and Wright, 2003; or Percy, 2005).

It remains to be seen how these concepts and the associated principles and practices presented herein might apply to primary and secondary education. But interesting and relevant lines of research are emerging from the current study, such as the formative educative approaches to which students were exposed (labelled "aculturation" in this paper), learning style preferences, and cultural backgrounds—that is, with what or how students come into the higher education classroom. There is an important body of literature exploring learning and thinking styles and their implications for teaching and learning. Useful references include: Beck (2001), Fatt (2000), Kolb and Kolb (2005), Mainemelis, Boyatis, and Kolb (2002), Wills (1994), and Zhang (2004). Brown (2004) identifies a number of factors comprising "learning orientation," all of which are relevant to this paper. While not directly related to higher education, Berings, Poell, and Simons (2005) do an impressive job of describing thinking and learning styles and their implications for on-the-job learning. Obsborn (2006) presents a comprehensive and scholarly overview of developmental theories, as well as providing other background of relevance here on transformative learning.

While threshold and transformation link naturally in the author's view, as explained in the body of this paper, they have not been paired in the scientific literature to date, to the best of his knowledge. Threshold and transformation are individually interesting and important, and there is a growing body of literature on them upon which this paper draws extensively. Much more needs to be understood about threshold and transformation as individual concepts, and this paper suggests areas for further study. More importantly, the synthesis of the two concepts represents a major pedagogical advance. Understanding how threshold and transformation operate in tandem has the potential to create a new breed of teachers and students, changing educative practices and fostering a more substantive type of learning.

The insights produced in this study may significantly influence how education is conceived, delivered, and received. It is not in theory or in abstract conceptualisation, however, where this study strikes home. The essence of threshold and transformation—as depicted as "penny drops" and "aha!" moments—is embedded in experience. They arise (or not) within and as a result of a complex set of circumstances and behaviours in dynamic interplay that define the teaching and learning context. While it would be impossible to include all possible factors, the vignettes reveal some of the circumstantial, contextual particulars found to bring about threshold and transformation. Just one of those factors is trust. As students discovered over and over in various courses, they will not have all the information; they will lack structure and direction; they will not know if they are on course or choosing the right option. They will be troubled by this. They will have to look inward or to each other for answers. Emerging from the tension, turmoil, and confusion this ambiguity causes is the dawn of self-direction and a palpable appreciation for student-centred learning. Students learn to trust the process. It works. They learn to trust themselves, each other, and their instructor. This paper describes how all this works, and attempts to explain why.
Cranton (1994) presents a very useful description of self-directed and transformative learning and their use in tandem for faculty development.

2. KEY TERMS AND CONCEPTS

2.1 Threshold

Threshold (usually threshold concept) is a term generally applied to a specific concept in a particular discipline that is known to be difficult for many learners to grasp. Until they grasp the concept (what the author refers to as “getting it” in this paper) they cannot advance to more sophisticated thinking or cannot apply their knowledge practically as the threshold concept is a fundamental understanding in or of the discipline and an essential stepping stone to further understanding. One of the key characteristics of a threshold is that once the learner grasps the concept (passes through the portal) he or she cannot go back—one can no longer see the “world” (understand the discipline) as previously. Some of the more pertinent literature reviewed for this paper on threshold concepts includes Clouder (2005); Davies and Mangan (2005); Meyer and Land (2005); and Eckerdal (2006). See also Bennis and Thomas (2002): their characterisation of leader-forging crucible experiences is closely akin to threshold experiences as used here.

The author expands on the narrower definition of threshold concepts as it is usually understood and applied in the scientific literature. Here, threshold applies more generally to a “way of thinking,” a way of looking at the world (including the self within that context) that allows and enables learners to understand new concepts or old concepts in new ways. This is an important distinction because passing through the threshold opens up new possibilities across the learner’s life, as opposed to within a particular discipline; that is, it is more generally applicable. This broader conception of threshold provides the fundamental basis to this paper.

Until the learner “gets” this new way of thinking much of the potential on which that beyond-the-threshold thinking is based is moot. It will be neglected, resisted, or rejected. The vignettes included later on illustrate the pre-threshold thinking and behaviour, the threshold event, and the post-threshold thinking and behaviour. The author draws on organisational change theory and the principle: the process is the solution (Hays, in press) as a threshold way of thinking. Various authors are stressing the importance of process and context over content and task, making the process conscious and raising it to a level of meta-analysis. This is evident in the student-centered (focused) and learning-oriented approaches over teacher-centred (focused) and content-oriented approaches (see Entwistle, 2000, and Warburton, 2003). Everyone knows what the words mean, but the essence and application of the principle is difficult to fathom and apply, challenging both facilitators of the process and those impacted by it. Until one experiences the process as the solution (instead of some tangible product or service as an output) one can only imagine what it entails and guess at the implications. In the vignettes presented one sees students wondering where the learning is (where are the PowerPoint bullets?, what do I need to memorise to pass the test?) only to inevitably discover that the learning is the process. Extracting the learning [points] is encouraged by reflective practice and meta-conversations about the process, which further involve and engage students in their own learning.

A major threshold concept of direct relevance to higher education and management education, in particular, is confronting the very real need to prepare learners for a world that is, itself, unknown and, perhaps, unknowable. Certainly, a world where creativity, courage, adaptability, initiative, discovery, and collaborative undertakings are indispensable. The paradox is that we continue to teach as if the world is rational and predictable; and students continue to expect education to be delivered in packaged, logical bits. They expect to be told, with their major responsibility to restate what they’ve been told. The pace of change and complexity of the world as we know it are only likely to become even more difficult to “get a handle on.” We persist in providing students handles, but don’t mention there is little to grasp with them. Accumulating facts (or even knowledge) and developing skills may be necessary, but are woefully insufficient to equipping people to become the leaders of tomorrow. Learners need to “get” this idea. This threshold challenge is to accept and understand that the real world is an uncertain place open to interpretation. The best way to meaningfully prepare students is to replicate / simulate those conditions
and facilitate learning in and through that context. Meuser and Lapp (2004) are amongst a very few researchers that discuss the paradox of teaching for the unknown and some of its challenges and implications. Marsick (1998) calls for management classrooms that are "messy," interactive, and evocative of the real world so that students more capably learn to cope with the complexity and other demands beyond university. Laiken (2002) holds up Bandura's fourth stage of thinking – the ability to hold polarities and work effectively with others holding different views – as an high objective for the management classroom. "Make it hard" and stop shortchanging students is the essential message in Nelson and Harper's (2006) article. They also describe a transformation process that includes a "liminal state," propelled by complexity, where learners may feel chaotic, ambiguous, and experience dissonance. If they pass through this state successfully, they will be transformed (achieve a "reaggregated state"). Kremer and McGuinness (1998) maintain that the way to improve management education and better equip students with skills for the future is to get them involved in teaching.

Increasingly over the years, another threshold has emerged in the author's classroom: the class as a community. This is partially a result of the author's industry experience working with teams and, quite naturally, from teaching university courses in teamwork and collaboration. Not coincidentally, the author has spent the last two years researching Communities of Practice, and central principles and practices such as distributive leadership, community identification and membership, collaborative problem-solving, individual professional development and group learning, and "grass roots" change and community development have progressively "leaked" into the classroom and influenced the author's teaching. This is all well and good for the author, but it is a different matter entirely for students accustomed to and often preferring independent study and individual assessment. Many students lack collaborative skills and supportive attitudes regarding group work. Many, if not most, have had disappointing groupwork experiences. And they lack the confidence, competence, and persistence to deal with difficult teammates. This said, the author admits having had enough of the constant references students make to "social loafing" and "free-riding." They're too young to have adopted those terms and their cynical implications.

There are many challenges comprising the classroom as community, including accepting that students can (and must) learn from each other and that the boundaries of the conventional class are expected to expand beyond "self" to encompass others. If the restrictions of conventional classroom attitudes and behaviours can be transcended, the potential for meaningful educational experiences and deep, transformative learning is significantly increased. Students come to enjoy learning as a community, and anachronistic conventions dwindle away. Insightful treatments of learning communities or learning in communities include Chapman, Ramondt, and Smiley (2005) and Gunawardena, et al (2006), and Holland (2006) who notes that "...now is the time for the promotion of community in educational environments" (p. 1844).

In addition to the three threshold concepts explained above, another "baker's dozen" of relevance to the modern management education classroom are identified in the theory section below, Threshold and Transformation within the Context of Learning Theory and Practice. These threshold concepts arise from observations of and reflection upon a variety of university courses over more than a decade of teaching to a multitude of students representing a wide set of demographics. They have not been validated or investigated, and are offered for consideration. Some of these threshold concepts will undoubtedly resonate with readers who recognise them from their own experience. Others may just stimulate speculation; the implications are enticing or concerning, depending on the lenses through which they're viewed. In any event, they are all open to challenge; and the author hopes some will be intriguing enough to be taken up as research topics. Many are evident in the four vignettes included in the section "Penny Drops" and Aha! Moments.

2.2 Transformation

Here, transformation implies a fundamental change in the learner, a shift in thinking such that he or she sees the world and his or her role in it differently than prior to the transformation, and is (or becomes) conscious of the transformation: the individual knows that he or she is a new and improved version, and
most likely knows something of the transformation itself; that is, what led to it or what the moment was like. This is clearly the case in the vignettes presented further on.

There is much on transformation (transformational learning) in the literature. Brooks (2004) provides an extensive review and synthesis of the literature, including presenting “four schools”: Mezirow’s rationalist, Jungian, Freire’s emancipatory, and Action Learning. Some of the more interesting and useful articles of relevance to this paper include Bennis and Thomas (2002), Carson and Fisher (2006), Hutchinson and Bosacki (2000), Marsick (1998), Meuser and Lapp (2004), and Torosyan (2001).

Interesting, in the vignette examples, the transformation is experienced as a group phenomenon. In the classroom situation, students often witness individual learners undergoing a transformative process. This event may actually spawn transformations in other students. Even when not, students are exposed to authentic and often poignant human behaviour that can presumably better equip them for the irrational realities of their [future] workaday worlds. As conceived here, transformation is tantamount to transformational or transformative learning, as discussed in the following section.

Transformation, or transformational learning, is not at all like the learning that is additive, an accumulation of knowledge or the development or acquisition of skills. Transformation is not a matter of volume or application. It does not come about as a result of standard approaches to training, teaching, or studying (although transformation can come about on its own under any circumstances if the learner is ready; the point is it cannot be forced or predicted).

Transformation is not just a new way of thinking, but a new way of being, as well, and will be evidenced in behaviour, felt and manifested in emotions, and embodied in the language learners use about, for example, problems they confront and experiences they have, including relationships with others (in this case, with other students and with their teachers). Once transformed, you cannot be the person you were.

2.3 The Synthesis and Synergy of Threshold and Transformation

At the risk of over-simplifying, threshold is a moment or an event. Transformation is a process. One is transformed at the moment the threshold is surpassed or transcended. Threshold only implies transformation when and if the learner passes through the threshold; that is, leaves behind the old way of thinking and its limitations and embraces the new with its possibilities. The author speculates that transformation does not arise on its own, but hinges on a threshold moment, the evidence of which is provided in the accompanying vignettes. This means that they operate synergistically. Both are important and, operating together, immensely powerful in terms of fostering personal and group transformation.

The synthesis needs to be further explored, including why and how it works and when it does not. There may be multiple thresholds or threshold moments or a series of them that propel the individual toward transformation. There might also be one or more approaches to the threshold (mounting) but some impediment, internal or external, causes the learner to “stall.” It is hard to say what this might look or feel like. It might be akin to that phenomenon we know from personal experience or observation of others where “you know you almost ‘get’ it or another is ‘on the verge’ of getting it.” And, transformation might possibly occur without consciousness. You might not know you’ve changed until someone else calls your attention to the fact.

3. THRESHOLD AND TRANSFORMATION WITHIN THE CONTEXT OF LEARNING THEORY AND PRACTICE

Achieving deep, transformative learning (see, as examples, Entwistle, 2000; Brown and Posner, 2001; Grauerholz, 2001; Warburton, 2003; Tolliver and Tisdell, 2006) requires not only stimulating and innovative educational strategies, but a student mindset (Ottewill, 2003) that accommodates and responds to such approaches. Undergraduate and, somewhat to a lesser degree, graduate students arrive unprepared for the deep, transformative educational experience. This has also been observed in
industry training, as well, although perhaps for different reasons. Deeper, more meaningful, life-changing experiences may be perceived as a waste of time or unnecessary cost. Dismissing such experiences out of hand or assuming they belong to other domains (effectively discounting the potential such shifts in world view has to offer) is, in the author’s opinion, another learning threshold that some seem to “get” and others do not.

Teachers can do much to create the conditions wherein deep, transformative learning is possible, but students must be willing and able to embrace and engage with those conditions and the personally-meaningful learning they potentially engender. Novel and innovative teaching strategies often starkly contrast with the more conventional educational approaches to which students are accustomed (Hennessy and Evans, 2006). They are qualitatively different and require more of students (see, for example, Sparrow, Sparrow, and Swan, 2000; Morrison, Rha, and Helfman, 2003). Generally more holistic (Hutchinson and Bosacki, 2000; Forbes, 2003) in approach, deep, transformative educational strategies involve and engage students in ways new to them (Lynch, 1999). Such strategies exercise a wider range of thinking and learning modalities, physical, affective (Grauerholz, 2001; Ottewill, 2003; Sap, 2003; Saab, van Joollingen, and van Hout-Wolters, 2005), and even spiritual (Tolliver and Tisdell, 2006; Das, 1998); see, also, Holland’s (2006) thoughtful rendition of contemplative education). Teachers employing deep, transformative strategies work hard to help students integrate material, make connections and see how things fit together, including the bigger picture (Lynch, 1999; Warburton, 2003) and to find personal meaning and relevance (Tolliver and Tisdell, 2006). Therein lies the potential for deep transformative learning.

The author employs a number of strategies in the management classroom to help students engage with material more fully. Three broadly applied are reflective activities, including journal writing, exercises in systems thinking, and metaphor. These concepts and applications of them are introduced early in the semester and provide the leitmotifs tying topics together. More than abstract content or mere devices to learn and use, they are, themselves, thresholds that shift and extend thinking, mastery of which allows learners to better understand and appreciate complex problems and generate more novel and encompassing solutions. Unfortunately, even with the best of intentions and efforts, some students don’t grasp the wider application or implications of reflection, systems thinking, or metaphor. They may “go along,” and even enjoy the ride; but, students who cannot find relevance of these thresholds to the discrete course topics and, more importantly, to their lives outside of class, fail to get the most possible out of the course.

Deep, transformative learning strategies represent not only an investment by teachers, but hard work on the part of students. They may require more initiative, responsibility, and self-direction (Sparrow, Sparrow, and Swan, 2000; Thomas, 2002), as the vignettes provided in the following section illustrate. They may require students to work on assignments and activities with which they have no experience. Reflective exercises (Hays, 2004) provide an example that highlights several potential levels of sophistication, difficulty, and risk. Writing a personal learning journal in which the student explores a particular course theme and his or her feelings about it represents a new kind of task for many university students. Sharing passages from that journal with study group members or the larger class represents a greater challenge (see Chapman, Ramondt, and Smiley, 2003; and Clouder, 2005, who discuss reflective dialogue and collaborative reflection). Finally, acting out or role-playing a situation reflected and written upon is an even greater undertaking. Students accustomed to surface learning approaches and/or who take an instrumental approach to their studies (Gordon and Debus, 2002; Ottewill, 2003) may react to deep learning strategies with trepidation and reluctance (Grauerholz, 2001; Warburton, 2003; Hennessy and Evans, 2006). If they cannot or will not participate, they will get little out of such learning approaches.

In describing a leadership course the author ran in 2007, a student wrote:

I began this semester with a mixture of trepidation, perplexity, and doubt. The instructor seemed to be from another planet. He didn’t do any of the normal things at the beginning. He didn’t teach at all. He seemed content to just talk and to get us talking. We’re all mature and confident, so few people had a problem talking. But no one took it seriously. We were just talking to please him... and maybe one-up each other. Without saying much about what he wanted from us, he pushed us to work together as a
group to come up with priorities for the course. It was like he expected us to design the course. No one believed that we could design our own assessment. No one really thought he would turn teaching over to us; or, if he did, that we would be able to achieve anything of value or to learn much of anything. Nobody said anything, but no one really wanted to work in teams either, which the course seemed to be all about. We had all worked in teams and had our share of bad experiences. I wasn't too happy about the way the course was unfolding, and I don't think anyone else was either. Then, almost without our realising it, everyone in class was talking seriously and listening to one another. We were seeing leadership everywhere, but, most interestingly, right here amongst the class. Individuals were making things happen inside and outside of class for everyone's benefit. Groups were leading class activities, and doing great! We kept talking about this, and learning more and more from the process. It took a while, but I think I understand now what the instructor was on about when he said "the process is the content."

With respect to the student quote and his description of class activities, Kolb and Kolb (2005) discuss "conversational learning," as well as other aspects of relevance to this paper, including experiential education, reflection, self-direction, and emotional aspects of learning. Chapman, Ramondt, and Smiley (2005) also stress the importance of conversation and dialogue and the important role they play in individual and group learning. Few students begin their undergraduate coursework with the readiness to undertake and get the most out of deep, transformative learning strategies and experiences (Otterwill, 2003). This applies to a surprising number of graduate students as well. Experience has shown that transition is possible for a majority of students, even within the confines of a single semester, but is a challenge for most and remains elusive for some. To capitalise on a course employing deep learning strategies and hoping to achieve transformative learning, students must broadly shift their thinking (transformation) and adopt a new behavioural repertoire (study habits, participation regime). These shifts do not come easily or automatically; teachers must facilitate students through the process, which requires patience, persistence, and commitment. The "troublesome" nature of this transformation and its irreversibility make it an important threshold concept in higher education (Clouder, 2005; Davies and Mangan, 2005; Meyer and Land, 2005; Eckerdal, 2006). Until students have undergone a fundamental shift in their thinking, they will fail to exact the full potential from deep, transformative education strategies. Related examples of the thresholds they might encounter in transformative classrooms and through which they must pass include:

**TABLE 1:**
**The requirements in transformative classrooms:**
- Teacher as facilitator, as opposed to "talking head."
- Lessons are embedded in the learning experience (not line items on a PowerPoint slide); students must extract them themselves and find their relevance.
- Students can and do have reasonable amount of power and control; they can make good decisions and fair judgements concerning their own learning.
- Students are as responsible for their learning as is the teacher (if not more so).
- Student application of principles and concepts can be more relevant and useful than the example the teacher might offer.
- Much of learning draws from the student's own experience. The experience is the lesson.
- Students can and must learn from one another.
- Lack of structure and ambiguity are okay; uncertainty is a natural part of the real world. Students may need to provide their own structure and discipline.
- Answers are not always clear and unequivocal; students do not have to look to the teacher for the "one right or best answer."
- Reflection on content and process and the learning that emerges is as important as the content itself, if not more so.
- Memorisation and mimicry won't help students pass.
- How "things" fit together is more important than the things themselves.
- Lessons come in all shapes and forms: metaphor, music, drama, ritual, enactment.
Once through the threshold [portal], students see themselves, their teachers, learning and the learning environment completely differently. Their reorganisation and expansion of thinking and behaviour opens up a whole new world of possibilities. Drawing on Bennis and Thomas (2002), this transformation "promotes new insights, skills, or qualities of mind or character that make it possible to function on a new, higher level—to jump to the next plateau."

If the primary objectives of higher education include cultivating graduates who can think for themselves, solve complex problems in unfamiliar contexts, work collaboratively with others and effectively in teams, demonstrate initiative, resilience, and flexibility, and are innovative and creative (Lynch, 1999; Morrison, Rha, and Helfman, 2003; Otewill, 2003; Thomas, 2002), then deep, transformative learning holds great potential to achieve those objectives. For deep, transformative learning to be its most effective, students need to undergo a fundamental shift in their thinking and behaviour. (Achieving that transformation is an implicit, if not explicit objective of deep, transformative education.) This transformation represents a complex threshold, a portal through which students must pass. In passing through, students re-define themselves, discard ideas, assumptions, beliefs, and behaviours that no longer serve them (they "unlearn"—Hennessy and Evans, 2006), and embrace an enlightened set of understandings. As an aside, there is an interesting range of literature on unlearning, exemplified by van Woerkom, Nijhof, and Nieuwenhuis, 2002). This notion of unlearning may prove to be of great significance in understanding the threshold-transformation process.

4. "PENNY DROPS" AND AHA! MOMENTS

Threshold experiences in the management education classroom can be described (and are, perhaps, best characterised) as "penny drops" and aha! moments. Despite their common usage and generally-accepted meanings, there is essentially nothing in the scientific literature on "penny drops" or aha! moments. Rare exceptions include Longhurst's (2006) sensitive exploration of aha! moments with respect to personal transformation; Bell, Meyerson, NKomo, and Scully who use the term "aha moment" several times in their 2003 paper on research collaboration amongst women but do not define or explain it. Crick, one of the discoverers of the DNA helix, is said to have used the expression "pennies drop" to describe the sequence of steps or events that accumulate to build a discovery (see Smith, 1993). The author acknowledges that Crick's explanation (of penny dropping) differs from the way "penny drops" and aha! moments are used here to signify a "moment" of insight (sudden realisation).

The vignettes presented below depict these experiences as perceived through the eyes of instructors and students. The terms "penny drops" and aha! moments—as used here—derive from vernacular in the author's own classrooms (courses); including versions of Management and Organisation, Leadership, and Teams and Teamwork, as well as a capstone course in a higher education teaching program. The terms come to be used and understood commonly, if not frequently. (By nature, "penny drops" and aha! moments are not frequent occurrences, nor would, then, there be frequent use. Their lack of frequency, however, is more than made up in poignancy, as the vignettes portray.) In the author's usage, the idioms are interchangeable, both implying "a sudden realisation or insight." "When," it is typically explained to groups of students or workshop participants, "the penny drops, the individual [finally] 'gets it'" (or grasps something that has till that time eluded the particular person). The light goes on is another metaphor used to explain the penny dropping; an apt analogy for aha! moments, as well. Readers may be familiar with the expressions "clued in" or "switched on," used to indicate that an individual is aware, cognisant, savvy, quick, and so on.

Emerging as important concepts in their own right came about quite unintentionally and for a time unconsciously as the terms "penny drops" and aha! moments were often introduced and explained in various courses. Through the occasional use in the classroom and, more significantly, through publicly linking the terms with situations and "behavioural moments" that exemplified those experiences, students came to understand the indications of "penny drops" and aha! moments and, more importantly, their implications. The author is fairly confident that students attending class on a regular basis could define the terms in their own words and correctly recognise the behaviours associated with "penny drops" and aha! moments more often than not.
While “penny drops” and aha! moments provide useful expressions for phenomena we may all have personally observed or experienced, their occurrence is complex and their implications profound. Hopefully the terms do not diminish the perceived value of the experience, as it is both rare and powerful. While empirical evidence is still sought, the author suspects that:

- “Penny drops” and aha! moments of the nature discussed here seldom occur in the typical conservative management classroom;
- They do not occur because of prevailing conditions as explored here; and,
- If they do, despite the above, “penny drops” and aha! moments remain below the surface of classroom activity, or are neglected as significant learning phenomena, perhaps registered as “one-offs” (singular, unaccounted-for events).

“Penny drops” and aha! moments present somewhat of a paradox: when or how they occur, and the form the take, cannot be predicted or controlled for; yet, they seem to transpire under certain circumstances. The author uses the term paradox numerously in this paper. While not precisely defined, paradox is exemplified in this sentence (“penny drops” and aha! moments cannot be predicted, controlled, or forced; yet occur in characteristic circumstances). They are “contending opposites” (Pascale, 1990) or two or more statements or facts that appear contradictory or mutually exclusive but exist simultaneously (Cameron and Quinn, 1988; Van de Ven and Poole, 1988). See also De Cock and Rickards (1996), Lewis and Dehler (2000), Marsh and Macalpine (1999), and Metcalfe (2006) for interesting applications of paradox.

**TABLE 2.**
The Unspoken Rules of Management Education:

<table>
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<tr>
<th>Rule</th>
<th>Description</th>
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<tbody>
<tr>
<td>1.</td>
<td>As professionals, themselves, students expect and must be delivered a “professional” educational experience.</td>
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<td>2.</td>
<td>The management classroom should mirror conventional management best practice.</td>
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<td>3.</td>
<td>The management course instructor must epitomise the “perfect” manager: efficient, effective, rational, unemotional, and in control.</td>
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<td>4.</td>
<td>Course outlines and facilitators’ guides should define precisely what is expected, and how it will be achieved and measured. Activities must mirror this guidance exactly.</td>
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<td>5.</td>
<td>The classroom should reflect the hierarchy of the professional organisation: teacher – student power differentials and distance must be maintained.</td>
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<tr>
<td>6.</td>
<td>Like their Theory X counterparts in the work world, students are irresponsible, unmotivated, and incapable of managing themselves.</td>
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<td>7.</td>
<td>Accordingly, the teacher directs, provides structure and boundaries, and oversees. Students receive and recite.</td>
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<tr>
<td>8.</td>
<td>Both passive and dependent, students look to their teachers to resolve conflicts, contradictions, and other problems. Teachers are responsible for fixing things.</td>
</tr>
</tbody>
</table>
Conditions ripe for "penny drops" and aha! moments appear to be those characterised by latitude. Latitude can have many dimensions, as the vignettes below reveal. There may be ambiguity, perceived as lack of structure, discipline, direction. There may be paradoxes, contradictions, and conflicts of all sorts, choices given where none are desired or expected. Following this logic and adhering to a prevalent conservatism characteristic of management classrooms, then the conditions that might promote or, at least, allow "penny drops" and aha! moments are illogical and antithetical: they are not likely to emerge on their own and, where emergent, would likely be curtailed by instructors applying the conventional rules of classroom "management." While these rules may not be codified, anyone believing they don't exist might refer to the box below, right, for sample operational management classroom management rules.

These "rules" are based on author observations and discussions with colleagues and sympathisers. See also the expectations for students at Appendix 1. Kegan's six gaps between what people are expected to bring to the modern work-world and their actual mindsets (cited in Marsick, 1998) closely resemble the dichotomy between where learners need to be as exemplified in the thresholds enumerated in this paper and the extant, operational rules of management [education].

Much of conventional wisdom in education (if not embedded in established teaching and learning theory) suggests that the conditions ripe for "penny drops" and aha! moments — what the author suggests is the threshold moment or experience of "passing through" — are to be minimised. Minimising comes about through clearly defined and measurable educational objectives and closely-aligned teaching strategies, including assessments that exercise, and demonstrate, and discriminate learning progress and distinctiveness. According to this doctrine, the 'perfect' classroom is predictable, controlled, structured, and defined. There is little latitude. Both faculty and students are penalised for (or at least suffer) the lack of structure and direction. These and other disincentives [insidiously] mediate novelty, experimentation, and other risk-taking in the classroom, tending to reinforce the status quo or what is referred to herein as "business as usual." Carson and Fisher (2008) characterise the academic environment as one seeking conformity and adherence to the status quo—and change is risky.

The problem of conventional management classroom management rules is all the more insidious because students adhere to them as well (or at least expect professors to practice what they preach). Thus, when an instructor attempts something new and different (novel content or a revolutionary approach to teaching or assessment), students acculturated in the conventional mode of education and immersed in traditional ways of doing things, including predictable patterns of teacher-student relationships, baulk. This obvious generalisation does not apply to all students in every circumstance. There is a clear minority of students who respond readily and even many who initially seem keen only to retreat when too much is new, different, and particularly "open." Investigation into learning style preferences, personality dimensions, or even early educative practices could prove beneficial. Despite some who adapt quickly, many students founder, resist, reject, scapegoat, worry, and otherwise preoccupy themselves until something resolves. Experience shows that the majority will attempt to compel the instructor to change [back] to the way he or she is supposed to be. They employ various strategies to achieve this end. Any but the most calloused or steadfast of teachers are likely to be brought back into line. Of course, and unfortunately, should this happen, then subsequent efforts to do things differently may be hampered as well.

Since the author has a lengthy, if mottled history with doing things differently in the classroom spanning fifteen years, certain student behaviours have come to be fairly predictable. The author anticipates every semester that a majority of students to be ill-equipped for and will initially resist reflective journal writing. Carson and Fisher (2006) report on their own research and that of others that shows student difficulty with critical reflection (about 25%). Resistance and dismissal abate for the majority, with many coming to highly value reflective practice and the voice it gives. Similarly, there will be a groundswell of anxiousness resulting from high levels of student-centred learning practices, including an abundance of interactive and experiential exercises and intense collaborative work (as opposed to individual / independent assignments and assessments). A range of researchers discuss anxiety / anxiousness and other emotional "troubling" brought upon by new educative strategies, including Hennessey and Evans (2006), Meuser and Lapp (2004), and Warburton (2003). King (2007) notes that "fear and uncertainty" are a necessary first step in the transformation process. Experiential education and experiential learning
are at the heart of threshold and transformation, and are covered broadly in the literature reviewed for this paper. See, as an example, Wills (1994).

Anxiety gives way to appreciation and excitement as students discover they can learn from one another, truly have license to "push the boundaries" (their own and the system's), and can trust the instructor to support, encourage, and care for them wherever their journeys take them.

While always different, every class, every semester will have "moments of truth." They don't get it until they get it. And, once they do, there's no going back. Once they understand and accept fully that "they are in charge and can fulfill their mandate," there is no telling how far or in what direction they may take their freedom and responsibility to learn. While this "boundlessness" may clearly threaten individual educators and school systems with a high need for control and risk-minimisation, the potential for extraordinary achievement and personal and group transformation seem worth the effort. From the author's personal experience, the fulfilment alone of witnessing individual students and teams "stepping up" to exceed their own (and others) expectations and often fulfil their dreams makes the arduous path every semester worth the trek.

That "penny drops" and aha! moments came to be predictable outcomes and, thus, conscious and deliberate educational strategies took years to materialise. The vignettes, below, while individually interesting and informative, each tell only a bit of the story. It took many such events and the time and space to see their interconnectedness to begin to assemble a more encompassing and captivating story.

4.1. Crisis in the Classroom

Jill was a woman in one of the MBA courses the author taught in 2006, Leading High-Performance Teams. Jill seemed mature and confident. She was not boastful, but, over time in class discussions, Jill revealed that she was a senior executive in a specialised government department. She managed a large team of her own, and was responsible for a sizable budget. It was obvious Jill enjoyed her work, and she came across as a competent and successful professional. The class was filled with interesting people, actually. One guy was a forest ranger who commuted four hours to attend class. There was an Army officer, and a business executive nearing retirement. There were several engineers, a lawyer, and a medical doctor on maternity leave. There were two executives from overseas working toward advanced degrees, and there were a few international students with little to no professional work experience. Class ages ranged from early twenties to late fifties. Lots of class time was spent talking about team experiences students were having or had had. With a focus on reflection and reflective practice, everyone got to know each other pretty well.

Jill spoke out in class no more nor no less than most, though (in retrospect), leading up to the crisis that became her "penny drop," Jill began to talk less in class, seem less sure of herself, and was at times distant and at times agitated. By Week 3 or 4, some students were feeling sufficiently frustrated or confident enough (or both) to speak out critically about course and instructor shortcomings. Others expressed their concerns more privately in their reflective learning journals. Early concern with marking (how they were going to be graded) gave way to concerns with progress: Would they get through the material? Were they learning anything at all? While all students were diplomatic publicly, consternation mounted; instructors always know if students are disgruntled and talking amongst themselves.

Realising tensions were coming to a head, the instructor decided to run a feedback session in Week 5, posing specific questions regarding the course, having learned in the past that these sessions can diffuse tension, foster unanimity, and convert chaos to concerted action (Hays, in press). Students were allowed time to reflect on the course privately, exchange thoughts and feelings in small groups, and, then, share whatever they thought the instructor and rest of the class needed to hear. The instructor tried to respond to the feedback on the course and his performance non-defensively, taking the opportunity to explain his position, promising to do what he could to change certain things. This session proved to be an important moment in and of itself. The effective dialogue deepened a sense of growing trust and safety, and promoted greater sharing and disclosure. Students who had felt alienated and were "suffering in silence" realised they were not alone. Most of all, the realisation began to be apparent that the course was
actually "on track" and what students were experiencing is normal and should be expected. Two or three students made insightful observations about the process, and it was clear that some of the earlier frustration was giving way to acceptance and appreciation. It was noted, for example, that what was happening was very much like "the real world," that is, their work, and how we were dealing with it (or not) could help explain work situations and how to more effectively intervene.

All was not well, however. Seemingly out of the blue, Jill spoke up and stated that she had had enough. The course was not serving her needs and she "...couldn't believe that the other students were 'buying in to the instructor's crap.'" Jill picked up her things hurriedly and left the room. A break was called to regroup and recuperate. After break, students and instructor were visibly shaken and perplexed. There was a little sombre and disconcerted discussion, and class broke for the evening a few minutes later. "I'm sorry I lost her," the author's own statement, is about all he remembers from the final conversation that evening.

It cannot be ascertained from outward appearances what precipitated Jill's crisis. We know from her later disclosures via e-mail, public explanation, and reflective learning journal entries that Jill was confronting and attempting to deal with multiple threats to her ego, sense of identity, and self-esteem. Fortunate for all and extending the threshold nature of the overall experience, Jill returned the following week. She apologised for her outburst and explained herself. Jill had been increasingly troubled at what she experienced as others in the class "getting it," that is, apparently understanding and appreciating the course. She felt singularly lost and "unable to get it." At the same time, problems in her team at work, accompanied by Jill's course-induced heightened attention to group dynamics and her leadership role, were making her feel incompetent. The crisis eruption and reflecting upon it during the ensuing week comprised Jill's "moment of truth," eventually leading to her "penny drop." Reflection - in this case, processing the event and the circumstances surrounding it - was assisted by journal-writing and composing an explanatory e-mail to classmates and instructor that week. Jill's epiphanic insights included that she:

- did not have to and, in fact, could not always be "in control, cool, calm, and collected;"
- had long been inauthentic in concealing her emotions and, possibly, misguided in thinking she had to protect her staff from her feelings;
- could learn from the course that "letting go" has powerful implications and may permit possibilities long desired but selfdom achieved;
- that she might be much happier allowing her staff to more actively participate meaningfully in the work and that their malcontent might be a result of her excluding them.

The crisis event and Jill's sharing of her feelings and learnings with classmates embody a significant threshold experience in her life and contributed to other students and instructor in powerful and unique ways, both individually and as a group. Heretofore boundaries on what's acceptable (legitimate content for learning) were substantially stretched.

4.2. Leadership and Ownership as a Threshold Phenomenon

It's an interesting paradox that students undertake to study leadership and management while simultaneously confronting (a) management faculty that essentially (if unintentionally) disempower them and (b) their own entrenched (and probably unconscious) passive and dependent behaviour and attitudes. Too often, faculty treat the subjects of leadership and management in the abstract—something to learn about from a safe distance, as opposed to something to learn to do or be. At the same time, faculty may make the mistake of treating students as subordinates, instead of treating them as leaders and managers. This unintentionally reinforces that leaders and managers are someone else—that is, those in traditional positions of power. The implication for instructors and their relationships to students, here, should not go unnoticed. The vignette that follows illustrates a set of behaviours and situations repeated in numerous classrooms that reveals the complexity and pervasiveness of the paradoxical dynamics alluded to in the opening sentence, but, also, how they can convert to important "life lessons," for all concerned.
The Community Project is the subtitle to a graduate-level course on management and organisation, redesigned to provide students with hands-on experience running a project on their own. In this case, students are required to conceive of, plan, implement, and evaluate a project intended to build university community and enhance the overall learning experience for stakeholders. The first session has students develop the criteria by which their proposals will be assessed. Their homework is to interview stakeholders (defined as anyone on campus and included within the university community) and develop proposals for consideration in Week 2. Readings and class activities each week are intended to support the unfolding project process.

In the first iteration of the course, this all went well in the early days. Students clearly got “a kick” out of their chance to find community by building community. They seemed to enjoy their empowered sense of responsibility and the freedom and variety offered by the course. Increasingly, however, class sessions became dominated by expressions of concern regarding proposals more so than the marker, saying business processes. If the instructor’s point of view, the vision and purpose had never been “nailed” (really elucidated and bought into by all), which more sufficiently explained the lack of progress. In any event, complaints and churn persisted. Students (some of them, anyway) were pushing and the instructor was pulling, but there was no “meeting in the middle.” Nothing really seemed to be changing and the class was going nowhere until the dawning of one of the major threshold events of the course. The precipitating moment arrived as the class was debating possible ways forward. Trying to facilitate (and not impose a solution), the instructor was exasperated and exhausted. When one of the chief agitators (used here with affection and the best of intentions...) made yet another disparaging remark, the instructor walked forward and handed him the marker, saying “I’m just too drained to continue. You facilitate for a while.”

Our nominee ably-enough facilitated what remained of the session. But the importance of this symbolic event cannot be underestimated. Influence on the overall project and the remainder of the course far exceeded what was accomplished that afternoon. Virtually all of the students dealt with the “hand-over” in their learning journals, and it was spoken about at various times in class. The event was repeated in subsequent classes, employing different “leaders” and hand-over strategies. But the aha! moment was profound. All students realised that they did, in fact, have the power and that they were entitled, even obligated to wield it for the benefit of the class and to further the project. Once through the threshold, they could not go back. From that point onward, the instructor was able to relax and enjoy the students’ newfound leadership and ownership.

4.3. Organisational Change Principles in the Classroom

In his book on organisational development and change, Hays (2004) writes that the process is the solution. The way you go about the change (the process) is as important a part of the solution – if not more so – than the technical or business package is itself. The principle derives from observation of countless change projects, often technology implementations or projects entailing new or re-engineered business processes. If the “solution” is designed from above or by “outsiders” and imposed upon stakeholders, it fails. Employees and other stakeholders resist, reject, or simply fail to adopt the change, lacking understanding of it and its rationale. Coupled with another core organisational change principle, use the targets of change as the agents of change (Hays, 2004), the strategy is to involve employees and other stakeholders in the change process, not as passive recipients but as active architects. If they are involved meaningfully, in problem-solving and solution design, implementation, and evaluation, their understanding and commitment multiply. Sometimes students have to architect their own learning to discover deeper meaning and implications, as in the following vignette.

Student-centred learning involves turning things back, standing things on their heads, giving up control so that others may become empowered. Full adoption of student-centred learning – its principles, practices, values, and beliefs – represents a threshold concept in education, for students, if not for teachers. To
realise and make the most of student-centred learning, students must accept and understand ("get") that they are both privileged and obligated to be self-directing and all that this implies. They must, for example, possess the skills and attitudes of self-management, including discipline and acceptance of responsibility. They must be willing and able to be proactive – seeking, discovering, finding their own fulfilment and reward – as opposed to conventional teacher-centred education that tends to disempower students by subordinating and making them dependent on teachers.

In graduate management education at least, applying organisational change principles can be an effective strategy for empowering students and promoting student-centred learning. In a number of organisational behaviour and organisational development courses the author has conducted, students become architects of their own and each others’ learning. Here, the use of organisational change principles is of particular value as students come to see practical examples of their application.

The "penny drop" and aha! moments in these instances arise out of the realisation that students are, in fact, designing and managing their own learning and that it is not [merely] an incompetence, abrogation of responsibility, or eccentricity of the instructor (believe me, I’ve been called worse). Instead, students come to appreciate the facilitation required to ease learners through a process that reduces teacher-centredness and increases student-centredness. It comes about through adherence to a set of classroom management and learning strategies that are independently quite common:

**TABLE 3:**
**Classroom management and learning strategies**

- generated learning objectives
- run or facilitation of group activities, individually or as teams
- peer evaluation
- design or selection of assessment
- involvement (leadership) in teaching units or sections
- led projects on or off campus

These strategies, taken on the whole, have been shown to produce capable, confident, and motivated students, willing and able to take control. They will have passed through the threshold of self-directed learning. Once through, one wonders what the effects might be and how they cope when confronting, once again, the conventional teacher-centred classroom?

**4.4. Penny Drop as Strategy and Outcome**

In this class, as with those detailed previously, students, again, confronted a course and instructor very different than expected. This was complicated by the fact that this course had a large majority of international students, implications including the obvious language difficulties and the not-so-obvious differences in student classroom behaviour and attitudes between domestic and international students. It is well known that international students, particularly those from some of the Asian countries, tend to be less assertive than their Western counterparts (papers reviewed of merit that bear on this topic include Asmar, 2005; Delaney, 2002; Jones, 2005; and Parry and Wharton, 2006) – an aspect of instruction in the internationally-diverse classroom that is interesting and challenging to teachers as well as students (and investigation that is beyond the scope of this present paper).

As might be expected, students in this course were not as outwardly vocal as many of the students in other courses. There were quiet assertions that students were perplexed as to why the course was run as it was. There were often long silences and blank looks. There were the occasional, tentative requests to remain after class to talk with students to clarify assignments or to go through one of the points made in class. There were no chief agitators in this course, so frustration and anxiousness were not brought out. It would have been easiest to allow the few more confident individuals to dominate discussion periods. Given the high proportion of international students, it would have been understandable to provide a more conventional course and adopt a more forgiving approach. The instructor is, however, a stubborn man, committed to certain classroom ideals—even if the suitability could be challenged in cultural terms.
Having taught dozens of courses with the international student proportion at 50% or higher, the author is fairly confident that the ideals, objectives, and strategies “translate.” While sometimes subtler, but nonetheless significantly, international students respond to student-centred approaches as frequently and with at least as much fervour as their domestic counterparts. More often than not it is the international student who applies him- or herself to the reflective task, to pursuing and extracting the “essence” of the lesson and applying it in his or her own life. Fortunately, most of the students who were reserved in class found their voices in writing their reflective learning journals. For some, the on-going written dialogue was the only real communication between student and teacher.

Despite the quiet and personal gains observed, the class as a whole was not responding as the instructor would have liked. The tendency to defer to the teacher or even to the odd more-assertive student was persistent. The only way to get students really talking was to form small groups (3 – 6) to discuss, debate, or work on tasks collaboratively. Following one such activity, several students expressed concerns aired in the small groups. The instructor saw this as a major step forward, and spoke to the class about the value of such feedback and the crucial and courageous role played by individuals in improving class (and work group) performance. The instructor also noted that every class experiences such challenges sometime between one-third and one-half way through the semester, and that, eventually, the “penny drops.” It was obvious that almost nobody knew the expression or what it might mean. The idiomatic expression was explained to everyone’s satisfaction, and students seemed really excited about the subject of “penny dropping” and what it implied for them. From then on, students began to use the term in class and in their journals. They enjoyed sharing their “penny drop” moments—when they came to understand a difficult concept or, especially, when they came to realise something about themselves or others.

Once people understand and accept that certain concepts, behaviours, or ways of thinking are not automatically learnt, understood, or appreciated and that sometimes tension, challenge, continued dialogue, or “just sitting with them” (tolerance for ambiguity; acceptance of paradox) are needed until the moment is right (boy, that’s a long sentence and its not over, yet) and that the moment may arrive at different times and under varying circumstances for different individuals, then they are okay: they have achieved another threshold level. Parry and Wharton (2006) entertain locus of control, tolerance for ambiguity, and work motivation in their comparison of international and domestic students in U.S. MBA programs. See Lewis and Dehler (2000) for an exceptional treatment of paradox, contradiction, and complexity in learning and, particularly, management education. As “evocateurs” radicalising the classroom, Torosyan (2001) stresses the value of paradox, as well as making classrooms more about processes than factual knowledge.

This threshold is a state of readiness, receptivity, and responsiveness that permits greater learning. Achieving this state is encouraged by an environment that that assures learners that it is okay not to know, it is alright to be wrong. Reduction in the drive to be right (as in repeat back what the teacher or the text has said) allows students more room to explore and be creative, to use their own initiative, and to collaborate rather than compete. The modern-day work world demands such qualities from workers at all levels. Why would we mass produce a workforce ill-equipped to deal with such demands?

5. CONCLUSION

Building on transformational learning theory and the still embryonic but growing body of literature on threshold concepts, this paper explicates and extends understanding of threshold concepts and the transformational process in part by applying them in the university management classroom. This study progresses research in these related areas substantially, and identifies important areas for further investigation. Significantly, a potential synthesis of the two concepts is proposed, and a strong case made for the validity of the synthesis and its potential to promote deep, transformative learning. If operationalising the synthesis of threshold and transformation can be taken up by management educators, dramatic changes in the way teaching and learning are understood and delivered can be expected with both teachers and students being impacted. It goes without saying that such drastic change could have extraordinary influence on what is learned and how, and on the overall experience of education. Some principles and strategies for translating theory into practice are supplied in this paper,
along with a cogent portrayal of their potential. Amongst others cited in this paper, Taylor (2000) lists conditions that promote transformational learning. They include: learner-centred, exploratory, and self-directed learning; environments that are supportive, encouraging, and trusting; deft facilitation; exploitation of emotion; and reflection. These conditions all get a "tick" in terms of this paper and the vignettes illustrating classroom dynamics; that is, they are present and accounted for, and used to dramatic effect. Are they worth the risk and effort in the long run? It depends whom you ask.

The greatest argument for a revolution in management education of the nature described here is the "real" world outside and after university study. A number of authors call for changing management education to more adequately prepare students for the "real world." Morrison, Rha, and Helfman (2003) submit that the way forward requires transforming the classroom, and they offer a range of strategies that support or complement those techniques suggested here. Ottewill (2003) also provide recommendations consistent with those advanced here to remedy student tendencies to approach their studies passively or shallowly. Perhaps, not surprisingly, these authors note that achieving dramatic change in the classroom can be more work for teachers than students...

The "real world" is chaotic, complex, and contentious. It demands difficult choices amongst unpleasant alternatives. It places individuals in ambiguous situations with uncertain futures and asks that they act wisely. It poses dilemmas, contradictions, and paradoxes that can only be effectively resolved through creativity, adaptability, initiative, collaborative effort, and an understanding of complexity. "Business as usual" in the management classroom does not produce proactive individuals with these capabilities. Anyone can solve the simple problems. But, they aren't that important anyway. The world outside and after university study demands a new breed of human—one who thinks and acts differently; one prepared to deal with the unknowable. Threshold and transformation offer one way forward. This study shows that conditions in the real world can be realistically simulated in the classroom. It also demonstrates that the learning that happens under those conditions is qualitatively different than that promoted in the conventional classroom, and suggests this learning is eminently transferable. The potential benefits for individuals, organisations, and society should not be underestimated.

Accepting that creating a new breed of graduate is both possible and desirable we are left with important ethical and practical questions with respect to implementation. Some of these are touched upon here.

Given that the conditions described herein that allow and encourage threshold events and transformational learning are difficult to manage (perhaps a paradox in itself) and emotionally and cognitively troubling for learners, are we as teachers ready, willing, and able to put ourselves (and our students) in that position? This is a particularly relevant question considering that threshold and transformation— at least as portrayed here— are antithetical to teaching doctrine and established practice.

From the teaching perspective, is it our role to even attempt to create a new way of thinking and being for our students? Is it ethically right and appropriate? Some would say not. Do we possess the skills and attendant attitudes and values to make it work? If not, how would we develop them? Where does one go to become a master facilitator of boundarylessness? Not to scoff at, but are we willing to "take the heat?" Experience shows that the majority of students come to accept if not highly value the deep, transformative learning approached discussed here. Some, however, will never appreciate the experience and evaluations of courses and teaching will bear the brunt of their disappointment and frustration. Individual faculty members and department administrators will inevitably have to confront this. There may be other risks, as well.

From the student perspective, is it fair to expect students to adopt to a new way of learning and a new way of thinking about learning? Are the majority of students capable of transformation, and what about those who cannot or will not? What are the consequences for them (and is that our concern)? Despite society's wishes and requirements, one must consider students' needs and preferences: Are students seeking a new way of being? Is that what parents and institutions are funding (not to mention the many students who put themselves through higher education). And, if we go down this path, students experiencing the deep, transformative learning characteristic of effectively deployed threshold and transformation strategies will—by definition—be different individuals afterward. What happens to them,
then, when they undoubtedly will confront more conventional classrooms and organisational settings? Presumably, they would be more likely to challenge or discount convention. Is that a good thing, and at what cost? We must ask ourselves if we are in the business of changing individuals, institutions, and communities. If not, then we keep with tradition.

Several potential lines of enquiry arise from this paper and the research on which it is based. As alluded to in the body of the paper and in the preceding concluding remarks, it seems important to ascertain whether or not and to what extent learners enter the management classroom with predispositions or potentials to get the most out of transformational learning strategies of the ilk proposed here. What are the significant factors (differences amongst students), if any, and what do we do about them? Does age, early educational approach, learning style preferences, personality types, or other variables predict responsiveness? Can we (and should we) cater for differences?

This study offers persuasive evidence that deep, transformative learning strategies based on threshold and transformation can produce dramatic and meaningful learning. Are there other better methods? How do they compare in design, delivery, and outcomes?

The paper also puts forward over a dozen potential threshold concepts of relevance (at least) to management education. There are probably many more. Are any of these more characteristic of challenges facing management educators and students? Are some more fundamentally important in preparing students for the unknowable?

Finally, what are the comparative effects and the long-term consequences of deep, transformative learning versus more conventional approaches? What are the real differences, if any, between graduates, say, five or ten years hence? Are we really better equipping students to deal with uncertain futures, complex problems, and constant and rapid change than their conventionally-trained counterparts? And, how do we know? And, even if there are significant differences upon graduation, do the exigencies of work life cause a balancing out (that is, do the more conventionally-trained graduates “catch up,” becoming more able to deal with chaos and ambiguity? While we do not, yet, know the answers to these questions, it would appear that the costs and dividends to organisations and society make them well worth pursuing.

As a parting thought, we return to the beginning, even before this paper became a paper. This would be about two years ago. It all started with two words: threshold and transformation. Who knows where the credit belongs for the pairing of the two concepts? But once combined in the author’s mind, the study had to be: the title was a given! The concepts threshold and transformation explained so much, and suggested even more. On top of the author’s interest in teaching and learning in higher education, threshold and transformation are central or at least of peripheral relevance to other research foci, including organisational learning, organisational development and change, leadership and professional development, and the elusive pursuit of wisdom (Hays, 2008). Whether or not the author has been transformed in the process of research and writing about these topics remains to be seen. Clearly, however, he is coming to see the world through “threshold eyes.” This may be useful or might be another paradigm trap; the jury is still out on this one. To the point, in final reviewing and editing this paper, yet another threshold becomes apparent. So, while accepting that introducing a new idea in the conclusion is “against the rules,” here it is:

Threshold and transformation in the management classroom are not about learning facts (content in the traditional sense), but about becoming and being.

The notions of being and becoming seem to underlie much that is understood and sought by experiential, holistic, and deep, transformative learning theorists and practitioners. It is not so much what you know, but what you can do with it. The distinction in the author’s course is exemplified by the distinction between what you now about management and how you mange. Today in class students volunteered the pearl of wisdom “management is life.” Another said, “I’m going to have to ‘unlearn’ everything I know about management.” Day One and they are already starting to “get it.” ☺
Learning more is simply not sufficient. The practical implications of this may shock, dismay, or delight learners (and teachers). Students may embrace or resist, but if they can come to accept that learning is not about (in the abstract, theoretical sense), but immersing, experiencing, and being, they will have achieved a pinnacle threshold in learning. Grauerholz (2001) discusses this in terms of learning about versus internalising. Lynch (1999) recalls Adler’s distinction of three levels of learning, in ascending order, knowing that, knowing how, and knowing why; he concludes that another path to discovery is needed and that the constant pursuit of "why" leads to practical wisdom. Havard, Du, and Olinzock (2005) observe that "knowing about" and "knowing that" do not help learners solve difficult problems in unknown territory. They need more sophisticated thinking developed through deep learning that will enable them to transcend adoption and effectively adapt (or think for themselves) in complex, challenging situations. Österberg (2004) constructively distinguishes "knowing that" and "knowing how" in his exposition on knowledge and generative learning, concluding that creativity is the ultimate intelligence, that which helps us solve problems when we possess no obvious relevant knowledge; that is, the world outside of university as depicted in this paper. The implications for us, here, are that (a) complex problem-solving, creativity, and wisdom are essential; (b) we haven't been doing a very good job of teaching the managers and leaders of the future; and (c) we are going to have to change our methods if we hope to better prepare graduates for the real world (perhaps exceeding societal expectations of academe and its graduates in the process).

6. ACKNOWLEDGEMENTS

The author wishes to acknowledge several researchers / articles not cited in this paper. While they may not have related directly to specific points, they either strongly influenced the author’s thinking or more-universally support, inform, or represent the philosophy and practice reported-on and aspired-to, or both. While there are many from which to choose, the following stand out: Baker and Sinkula (2002), Bierley, Kessler, and Christensen (2000), Schwandt (2005), Dhiman (2002), Hays (2008b), Huxam and Vangen (2000), Lichtenstein (2000), Oudtshoorn and Thomas (1995), Sternberg (1998), and Weymes (2004).

REFERENCES:


**APPENDIX 1**

This appendix provides a table of expectations for students abstracted from one of the author’s course syllabi. While the guidance explicitly conveys what students should and should not expect, they appear to take no notice until the reality of a maverick instructor and unconventional course strike home.

Perhaps a list of coping strategies should accompany the expectations.
TABLE 4:
List of expectations for students.

<table>
<thead>
<tr>
<th>Do Expect</th>
<th>Don’t Expect</th>
</tr>
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<tbody>
<tr>
<td>To be actively involved in each session. This means exchanging views,</td>
<td>The lecturer to “lecture” much. Formal presentations, PowerPoint slides and</td>
</tr>
<tr>
<td>participating in much group work, and learning from one another.</td>
<td>so on will be kept to an absolute minimum.</td>
</tr>
<tr>
<td>Planned activities and topics to change on short notice.</td>
<td>A traditional course. It will be unconventional, surprising, and perhaps</td>
</tr>
<tr>
<td>Additional readings and small assignments to “pop” up as we go along.</td>
<td>difficult to grasp.</td>
</tr>
<tr>
<td>New and unplanned challenges.</td>
<td>A firm and predictable structure. Things will change (as in real life), but</td>
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<tr>
<td></td>
<td>with as much consultation, group problem-solving, and shared decision-making</td>
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<td></td>
<td>as possible.</td>
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<tr>
<td>To be a member of at least one team for a majority of the course. You</td>
<td>To get too comfortable with one or two mates or a small group, as we will</td>
</tr>
<tr>
<td>will have at least one major team project with this team.</td>
<td>be mixing it up continually.</td>
</tr>
<tr>
<td>Assignments that may be new to you, such as writing a reflective learning</td>
<td>Your facilitator to be the “team leader,” always in charge and in control.</td>
</tr>
<tr>
<td>journal; joint reflection, critique, and lessons learnt; giving and</td>
<td>Each of you will be leading at various times and in different circumstances.</td>
</tr>
<tr>
<td>receiving honest feedback. Some will “put you on the spot” such as fishbowl</td>
<td></td>
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<tr>
<td>exercises and dialogue.</td>
<td>To always know where we are or where we are going. You will feel lost.</td>
</tr>
<tr>
<td></td>
<td>Your facilitator to solve this problem or make things easier. A major part</td>
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<td></td>
<td>of team effectiveness is learning to deal with problems and ambiguity as a</td>
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<tr>
<td></td>
<td>team.</td>
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<td></td>
<td>Your facilitator to tell you the one right way or to provide you the “correct</td>
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<td></td>
<td>answer.” We will debate, discuss, come to shared understandings, and accept</td>
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<td></td>
<td>different opinions and conclusions.</td>
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<td></td>
<td>It to be easy. The more you think you know, the more difficult it might be.</td>
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<tr>
<td></td>
<td>Your instructor to be perfect. He will, however, try to “take on board”</td>
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<td></td>
<td>feedback and recommendations.</td>
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<td></td>
<td>Your instructor to model effective teamwork, collaboration, and shared</td>
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<td></td>
<td>leadership behaviours.</td>
</tr>
</tbody>
</table>

AUTHOR PROFILE:

Dr. Jay Martin Hays received his doctorate from Boston University’s School of Education in 1991. He began teaching at The Australian National University in 2004, having spent over ten years working in the field of Organisational Development and Change. Jay’s work has taken him to Europe, Africa, New Zealand, Australia, and the United States. His passion remains working with teams and groups, which is evident in his teaching and research. Jay’s current focus is on Communities of Practice and the role they play in developing individuals, groups, and communities.