

## **Investigation of the relevance of the notion of a threshold concept within generic learning development work**

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### ***Abstract***

Since the term 'threshold concept' was applied within economics (Meyer and Land, 2003), its relevance has been demonstrated within disciplines ranging from biology (Taylor, 2006); to communication, culture, and media (Cousin, 2006); accounting (Lucas and Mladenovic, 2006); and philosophy (Booth, 2006). Grasping a threshold concept has been described as '...opening up a new and previously inaccessible way of thinking about something' and gaining '...a transformed internal view of subject matter, subject landscape, or even world view' (Meyer and Land, 2006a, p.3).

In previous issues of this journal, Rust (2009) and Cousin (2010) have proposed that, by highlighting the relevance of threshold concepts within the course content of academic disciplines, we can support learning development work by academics within their departments. Cousin (2010) suggests that our acknowledgement of this particular contribution that academics can make to learning development work, may pave the way for more collaborative relationships between learning developers and academics.

If threshold concepts are of such widespread relevance, and can be such powerful learning tools, it would be a shame if their potential were to be explored solely within academic disciplines. This article therefore swivels the spotlight back onto the field of generic learning development, and investigates the relevance of the notion of a threshold concept to study skills development across, rather than solely within, the academic disciplines.

**Keywords:** threshold concept; learning development; academic skills; study skills consultation; troublesome knowledge; cross-disciplinary.

## ***The learning development consultation***

The one-to-one learning development consultation involves close engagement between individual students and learning developers, so this may provide the context in which threshold concepts can be most easily identified. While each consultation is individualised, there is a broad collection of explanations/advice that seems to be disproportionately useful for many students, across many disciplines. Once such learning is supported within the consultation, students can become empowered to make significant steps forward in their academic effectiveness. Is it possible that elements in this collection could usefully be termed threshold concepts within learning development?

The vignette in Box 1 describes the case of an international student who booked a consultation after a previously lengthy period of troubled feelings. Relevant, accessible, and timely explanation of the particular requirements and styles of academic writing in the UK enabled this student to make huge progress. This suggests that something akin to threshold concepts exists within the routine work of learning development.

### **Box 1.**

An international student came for a consultation three months into his Masters course. He was extremely upset. From being a top student in his home country, he was now failing assignments. He didn't know what had gone wrong. All he could think of was to leave the course, waste family money, and go home with no qualification.

The consultation provided a safe place in which to express his concerns openly and confidentially. He was supported in grasping three threshold concepts relating to academic writing: the importance of the exact title; the meaning of critical writing; and how argument can inform structure. The student called two months later to say that he had gained two A grades and a distinction in his next three assignments.

Table 1 offers some candidates for the label of ‘threshold concept’ within learning development. They are all typical ideas that we work on with students. Individually, these ideas may appear relatively simple, perhaps even obvious, nevertheless, each can be very powerful when worked through, understood, and put into practice effectively by a student for the first time.

You don't have to read every book on the reading list
The exact referencing format does actually matter
The most important thing is the title of the assignment, and every single message within that title
Interpretations are not necessarily right or wrong, but are supported or unsupported to a certain extent by the evidence
Move from such phrases such as ‘the fact that’ ‘we know that’ and ‘clearly’, to phrases like ‘there is strong evidence that’ and ‘this suggests that’
You can't revise every hour of the day. There will be unproductive time. Be realistic and build this into your plans
Mnemonics can be used to remind you of a series of questions or processes as well as a series of facts
It can be more useful to practise creating detailed essay plans, than writing full essays
Take control of what you want to look for in the literature; don't just wade in and try to make notes on everything
If you critique your own approach it is positive evidence of your critical skills rather than simply evidence of failure
Crossing out is positive: the more you edit out poor writing, the better your draft can become
Writing is an important part of the thinking process, not a postscript to it
Liminality itself as a way of living during part of the doctoral process

**Table 1. Some potential threshold concepts that feature frequently within one-to-one learning development consultations.**

This article considers the nature of the learning development work that takes place within one-to-one consultations, and compares this against the five defining characteristics of threshold concepts suggested by Meyer and Land (2003, pp.4-9). These characteristics are: 'troublesome knowledge' associated with grasping the concept; and, once grasped, that the concept is 'transformative'; 'integrative'; 'bounded'; and 'irreversible'.

### **Troublesome knowledge**

Meyer and Land (2003, p.10) suggest that threshold concepts within an academic discipline can feel problematic or 'troublesome' for learners. Within learning development we tend instead to be dealing with troublesome **processes**, rather than troublesome knowledge. These processes can represent significant challenges for some students, at certain points in their academic careers, and the resulting problems can have serious consequences if not explicitly addressed. For example, a student may want to discuss:

- How to write an essay, not what to put in it;
- How to approach revision, rather than what to revise; and
- How to prepare for a literature review, rather than what specific texts to read.

Within a discipline, a student's progress on a specific aspect of a topic can even be brought to a halt by the failure to grasp a particular threshold concept. Within learning development, the impact of failure to grasp a threshold concept tends to impair a student's performance of a certain element of academic practice across a range of situations, rather than bringing their work to a halt. They may, for example, still be able to pass exams or assignments in all of their subjects, but they may perform well below their potential across the board because of limitations in: the effectiveness in their revision process; their note-making process; their level of critical writing; or their time-management.

Perkins (1999) suggests that troublesome knowledge can appear counter-intuitive, alien, or incoherent. Examples of this within learning development are:

- To be more effective in revision it's actually best **not** to plan to revise solidly from 6-11pm;
- To do adequate background reading: no you don't have to read all the books on the reading list;

- If you criticise aspects of your own research, it is evidence that you are taking a critical approach, rather than simply evidence of failure.

Within the consultation, a student is offered a metaphorical safety net into which they can fall, and where they can voice their difficulties confidentially. The learning developer has invariably met the situation before; is not criticising or judging; and crucially is not panicking! Tension associated with the troublesome nature of the process can be defused, and constructive progress through the threshold can begin.

The concepts suggested above may not be inherently difficult to understand, but they are difficult in a different and equally challenging way. They can relate to long-held attitudes, or to behaviour that has been learned and practised over time. They can be implicit within a student's academic practice, rather than anything that they are particularly aware of. These factors contribute to the difficulty students can have in identifying, evaluating, and solving their problems for themselves, and to the difficulty they can have in making changes once the problems have been identified.

## **Transformative**

Despite their apparent simplicity, working through such threshold concepts can be powerfully transformative for students who are supported in grasping the advice and integrating it into their academic practice. Efkides' (2006, p.61) work in this field shows that 'even small changes in the phrasing or in the context of the task may have an effect on meta-cognitive experiences'. The vignette in Box 1 is an example of such a seemingly disproportionate transformation.

Work on threshold concepts within departments involves supporting students to move through a 'portal' (Meyer and Land, 2006a, p.3) to a new level of conceptual understanding. Within one-to-one learning development consultations we are often supporting students in gaining a new **perspective** on an old challenge, for example note-making. Gaining this new perspective can prompt a crucial shift in attitude and approach to an academic process, rather than a new conceptual understanding. In the case of note-making it could be the shift from: wading into the reading and taking comprehensive but unmanageable volumes of notes; to planning in advance the different kinds of material you

are looking for, then reading with more purpose, and making more selective and relevant notes.

## **Integrative**

The candidate threshold concepts suggested in Table 1 relate to processes that are already inherently integrated across a student's academic work. Progress through one threshold can therefore facilitate progress across an already integrated set of skills. This is different from Meyer and Land's (2003, p.4) description of integration within academic discipline, whereby grasping a threshold concept exposes 'the previously hidden interrelatedness of something'. Within learning development, grasping a threshold concept can allow a student to improve the performance of an existing skill, such as essay writing, that is already integrated, but which was previously operating ineffectively and letting him or her down.

## **Bounded**

Meyer and Land (2003, p.5) describe boundedness as, 'possibly often (though not necessarily always)' a feature. An example within an academic discipline is the specific meaning, and therefore boundedness, of the concept 'elasticity' within economics (Reinmann and Jackson, 2006, p.116); a word that has a different meaning in other contexts.

Potential threshold concepts within generic learning development work tend to be of cross-disciplinary relevance rather than bounded. There is reasonably clear demarcation within the one-to-one consultation, between the students' content-related knowledge, and their generic academic skills. The consultation will focus on the latter, to support students' development and effective use of the former (Edwards, 2009). Students themselves are responsible for applying the generic learning gained within a one-to-one consultation in a way that fits with the requirements of their own academic discipline. Such meta-cognitive practice, of grasping, transferring, and effectively applying new learning, is an important academic skill in itself (Billing, 2007). So, contrary to the boundedness of discipline-based threshold concepts, working **across** discipline boundaries is a key aspect of threshold work within learning development.

## **Irreversible**

The ideal image may be of students who, having grasped a threshold concept, can never go back to their previous more limited level of understanding. Within learning development, a student may step forward through a threshold in discussions with a learning developer, and experience a revelation about, for example, how to draw boundaries around their background reading. Actually putting that into routine and effective practice, on their own, is a further step in the challenge, and may involve several steps backward as well as forward. Within learning development, therefore, working through a threshold tends to signal the beginning of a period of change and development, rather than the switching on of an irreversible process. Working through a discipline-specific threshold concept may also, however, involve a period of adjustment while the student learns to work with their new understanding.

The primary difference between the two may be in the kind of work that a student is doing as he or she grasps and begins to use a threshold concept. In the case of a discipline-specific threshold concept, the main challenge tends to be to gain an intellectual understanding of the concept. Within generic learning development, the main challenge tends to be, firstly to appreciate the relevance of a new perspective on some aspect of their academic practice; and secondly to change their problematic, and perhaps ingrained, existing academic practice. The degree to which either of these kinds of change can be irreversible relates to the different nature of the change taking place.

Table 2 summarises the similarities and differences suggested above, between threshold work in a discipline-specific, and a generic learning context. The five key characteristics of a threshold concept are relevant in cases of both similarity and of difference.

**Table 2. Comparison of working through a threshold within an academic discipline, and within a one-to-one learning development consultation, against five key features of a threshold concept listed by Meyer and Land (2003).**

	<b>Working through a threshold within an academic discipline</b>	<b>Working through a threshold within a one-to-one learning development consultation</b>
<b>Troublesome knowledge</b>	Difficulty in grasping a specific, challenging, concept within the content of a discipline. Student's progress on a specific topic may be brought to a halt by the failure to grasp a particular threshold concept.	Difficulty in performing an academic process to a sufficiently high standard. Student's progress unlikely to be brought to a halt by such a failure; instead they may underperform in a certain aspect of academic practice across a range of assignments, experiments, exams, presentations, or discussions.
<b>Transformative</b>	Can be hugely transformative once grasped and put into practice effectively. Tends to relate to grasping an understanding of a concept.	Can be hugely transformative once grasped and put into practice effectively. Tends to relate to gaining a new perspective on a problem process.
<b>Integrated</b>	Once grasped, the threshold concept can be quickly integrated with existing knowledge.	Already integrated within the student's academic practice: grasping it can facilitate more effective practice across an already integrated skill-set.
<b>Bounded</b>	Potentially bounded within the specific discipline or sub-discipline.	Inherently <b>unbounded</b> , and widely applicable within and across disciplines.
<b>Irreversible</b>	Potentially irreversible.	Potentially irreversible.



## **The doctoral process**

The doctoral process is an interesting landscape within which to identify generic threshold concepts. Kiley (2009) and Trafford and Leshem (2009) identify the **liminal state** as having particular relevance for doctoral candidates. I suggest that spending a certain amount of time in a liminal state may be a defining characteristic of the doctoral process, and that realisation and acceptance of this may represent a threshold concept in itself.

Doctoral study involves in-depth focus on a highly specific substantive element within a discipline, where students may work so close to the frontier of knowledge that they may even be involved with the discovery of new discipline-specific threshold concepts. However, it also requires their demonstration, to a high standard, of a wide range of generic academic skills. It is this requirement that enables learning developers to provide effective support for doctoral students within one-to-one consultations.

Margaret Kiley (2009, p.298-9) identified the following threshold concepts within the doctoral process: '**argument or thesis**, supported by defensible evidence'; 'the concept of **theory** as underpinning research and being an outcome of research'; and 'the concept of a framework as a means of locating or bounding the research'. Similarly, Trafford and Leshem (2009) report the many generic aspects of 'doctoralness' rather than discipline-specific knowledge that often let doctoral candidates down in their theses and vivas. So, while doctoral study clearly involves work through discipline-specific threshold concepts, it also involves work through several important generic learning thresholds.

## **Discussion**

Meyer and Land (2003, p.9) suggest that the term 'threshold concept' may be more appropriate within disciplines 'where there is a relatively greater degree of consensus on what constitutes a body of knowledge'. In areas where this is not so easy, they suggest that development in '**ways of thinking and practising** also constitutes a critical threshold function in leading to a transformed understanding'. Thresholds in learning development relate primarily to ways of thinking and practising within an academic community, rather than to subject-specific knowledge. Meyer and Land (2006b, p.23) also write about the point where a student 'becomes conscious of the fact that they are, or are beginning to think like, an accountant, chemist, economist, historian'. A student also needs to think and

write like a competent member of a wider academic community. This is the terrain of learning development.

The five characteristics of a threshold concept listed by Meyer and Land (2003) appear to be highly relevant to the generic as well as to the discipline-specific context. Two of them seem to work in a similar way in both contexts. The idea of troublesome **knowledge** within an academic discipline links easily with troublesome **process** within learning development; and in both contexts, progress through a threshold may be irreversible.

The other three characteristics are still highly relevant in the generic context, but they tend to operate differently. Threshold processes within learning development can be hugely transformative, but tend to relate to the gaining of a new perspective on a troublesome process, rather than to grasping an understanding of a particular academic concept. A learning development threshold also tends to be already integrated and inherently unbounded in its application, rather than discipline-specific and a step towards new integration.

Another important difference between the two contexts, is in the nature of the work required to work through the threshold. Previously identified discipline-specific threshold concepts tend to be clearly academically challenging, yet the ideas in Table 1 appear to be fairly simple to understand. Similarly, the generic thresholds identified by Kiley (2009) within the doctoral process appear fairly straightforward to understand. The difficulty, however, lies not in their understanding, but in their acknowledgement and appreciation, followed by their effective application, which invariably involves significant changes to previously ingrained behaviour.

## ***Conclusion***

This article has investigated the relevance of the notion of a threshold concept within generic learning development work. The five key characteristics of threshold concepts were examined individually against the kind of troublesome processes typically discussed in one-to-one learning development consultations. All five characteristics appear to be highly relevant to this work, but there are important differences in the way that some of them operate, and in the nature of the work involved to make progress through a

threshold. These differences do not, however, weaken the case for the relevance of threshold concepts within learning development. Instead, identification and further analysis of these differences can support the strengthening of the theory, by pushing it to extend explicitly into generic learning development as well as into additional academic disciplines.

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