

## **Triggering engagement in SoTL through Threshold Concepts**

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### **Abstract**

This essay is a reflection on the effectiveness of the idea of threshold concepts in engaging teaching staff in developing their scholarly teaching and scholarship of learning and teaching. I situate threshold concepts within a framework for critical reflection, describe how I have used this idea and some of the outcomes I have observed, and finish with my reflections about why threshold concepts are such an effective trigger to engage academics in SoTL

**Keywords:** Threshold concepts, critical reflection, professional development, promoting SoTL

### **Introduction**

I have worked for more than 20 years at a large, research-intensive university in Australia in roles focused on developing capability for scholarly teaching and scholarship in learning and teaching. I have explored many different ideas and strategies to engage teaching staff in SoTL - some have worked well, others have floundered. In 2004 I came across an emerging area of research into teaching and learning – threshold concepts (Meyer and Land, 2003). I found this idea challenging and intriguing, and introduced it into my work with teachers hoping it might similarly engage them. The strength of this engagement has been beyond my expectations and has astonished me – nearly all those I have worked with in this area have embraced this idea immediately and most have engaged with it deeply. It appears that this response is echoed around the world, with an explosion of interest and research into threshold concepts in multiple disciplines across many countries (see Flanagan (2009) for a comprehensive bibliography).

Most significantly, the examination of threshold concepts has proven a very effective trigger for critical reflection, already well established as a vital component for SoTL (see for instance Kreber and Cranton, 2000). Critical reflection has the potential to transform how we think about learning and, ultimately, to enhance how we teach. Through this process we can move from simply reflecting on our experience as teachers and learners to critiquing these experiences and thus challenging the assumptions and values that underpin why we do what we do (Brookfield, 1995). Viewed within this context of critical reflection, the exploration of threshold concepts acts as a lens through which teachers are able to take a different view of their discipline (and, within this, their own teaching and learning and that of their students), to question and critique their understanding and practice, and to examine their assumed knowledge, assumptions and beliefs. Through this teachers develop a deeper understanding of their disciplinary field, their learning and teaching and their student's

learning, which might then inform their framework and practice and extend into further investigation.

### **The Notion of Threshold Concepts**

In coining the expression *threshold concepts*, Meyer and Land (2003) proposed that in most disciplines there are concepts that "can be considered as akin to a portal, opening up a new and previously inaccessible way of thinking about something"; concepts that a student must understand if they are to progress. These concepts, however, prove very difficult for students to grasp and are characterized as being 'troublesome' (derived from Perkin's (1999) notion of troublesome knowledge) where they may be counter-intuitive, alien or far from commonsense understandings. Meyer and Land propose that difficulty in understanding threshold concepts may leave the student in a state of 'liminality' where they get 'stuck' in "a suspended state in which understanding approximates to a kind of mimicry or lack of authenticity" (2003, p 10).

Once the concept has been grasped, the students have a transformed way of understanding or viewing something that may represent how people 'think' in a particular discipline, or how they understand, perceive, apprehend or experience particular phenomena within a discipline. Meyer and Land found transformation went beyond epistemological dimensions of knowledge and understanding and extended to ontological dimensions around personal identity, feelings and values.

Examples of thresholds in different disciplines are, by their very definition, hard to understand but include the concepts of complex numbers and limits in pure mathematics; precedence in law; and irony in literary criticism (see Meyer and Land (2003) for detailed examples and Flanagan (2009) for a comprehensive bibliography across the disciplines). An example from the discipline of history which I find particularly interesting is the conception of the discipline itself - history is often seen by students as having an 'objective' quality within which they have to learn a series of dates and facts, rather than, as seen by historians, being an interpretive discipline which involves interrogation and analysis of artifacts, and evaluation and debate of multiple perspectives (see Diaz et al 2008 for detail). This is clearly "troublesome" for the students, who will need to grasp the concept if they are to progress in the area.

### **Introducing Thresholds to Teachers**

I first introduced this idea to teachers who were enrolled in a course *Student Learning in Higher Education*, which is part of a graduate certificate in learning and teaching. This course aims to support teachers to develop their approach or framework for teaching, underpinned by an understanding of learning, which they then use to inform their practice. This requires the ability for critical reflection and, within the course, I draw largely from the work of Brookfield (1995) who proposes that, to reflect critically, we need to move beyond the limitations of our own experiences and to reframe our teaching by viewing our practice through 'lenses' that reflect back to us a differently highlighted picture of who we are and what we do. He proposes four lenses: our autobiographies as learners; our colleagues' experiences and perceptions; our students' eyes; and the theoretical literature.

Threshold concepts provide a lens through which teachers can view teaching in their discipline from a different perspective and, along with this, consider areas where their students 'get stuck' and why - areas that may emerge as threshold concepts. A crucial aspect of this exploration is to have them examine and make visible what they, as experts in their discipline, take for granted - referred to by Schon (1995) as 'knowing-in-action':

knowledge which can't readily be named but is present in our action. This makes it difficult for those who are expert to teach these critical concepts in a way students will grasp, and to understand the difficulties faced by a 'novice' trying to move from being 'outside' the discipline to 'inside' it.

The problem, of course, is that it is difficult for teachers to see what is tacit. While an examination of threshold concepts may reveal these crucial ideas, they don't necessarily lead to an understanding of how the 'expert' came to understand them. Work being undertaken at Indiana University under the name "Decoding the Disciplines" and led by Middendorf and Pace (2006), proposes a process by which this implicit knowledge is made visible to the teacher through a process of critical questioning by another who is outside the discipline (See Dias et al (2008) for an account of how effective this process has been within a history department). The focus of the examination is upon where their students get 'stuck' - referred to as 'bottlenecks'. Through these interviews, they aim to dissect the ways an expert deals with the issues that cause the bottleneck, and then to invent ways to model this thinking for students. Many of the bottlenecks are areas that appear to be threshold concepts.

Using the 'decoding the discipline' approach as a process to reveal and examine threshold concepts has proven very effective. Some of the outcomes from these teachers reveal deep reflection across key dimensions beyond what I had seen previously:

- *Reflection on their discipline and the 'content' they teach:* considering thresholds in their own discipline leads to the discovery of new thresholds as experienced by their own students in their particular courses or programs, and to an examination of how they might best approach the teaching of these areas.
- *Reflection on the process of teaching:* the process of examining thresholds through dialogue with others leads to a broader examination of the process of learning, and reveals some of the tacit knowledge they have as teachers, and assumptions they make about their students in terms of what they know and how they learn.
- *Reflection in relation to their own learning, present and past:* examining the thresholds they are encountering in learning a new discipline (learning and teaching) allows them to better understand what it is to be a novice who sits outside a discipline, why their own students get stuck, and how best to help them. In addition, reflection on past learning, including narratives of their (often negative) experiences of learning, provides insights about their encounters with threshold concepts and how they did – or did not – come to understand them.

I have since explored threshold concepts with many different groups including more experienced teachers and those in leadership roles in learning and teaching and have found the positive response persists across these groups – this includes engaging those who in the past have been resistant to any form of development of their teaching.

### **Reflections on Why Threshold Concepts Are Such an Effective Trigger for SoTL**

I believe threshold concepts offer a huge potential for those involved in supporting others to develop scholarly teaching, through being a multi-layered lens and through providing a mechanism by which teachers can work respectfully together. My reflections on why threshold concepts have proven so useful are because:

- Exploring this area is interesting, challenging and, indeed, inspiring. Meyer and Land (2005) describe from conversations with professional colleagues that threshold concepts have “found an immediate appeal as being a ‘pedagogically fertile’ and energising topic to consider” (p 374).
- The effectiveness of threshold concepts in engaging teachers relates to why they are readily accepted and highly regarded by academics. This is because the examination of threshold concepts starts from where the academic is in exploring thinking and learning, and positions the academic as experts within their particular discipline – and so relates to how they see themselves and their role. This contrasts with what happens with more traditional teaching development programs where teachers are often taken out of their context and located as novices in terms of teaching, from where they explore generic and foreign ideas, such as around student centred teaching. There is considerable evidence that such development fails to connect with how academics see themselves and their work (see Lee & McWilliam 2008 for a vivid representation of this), where academics “leave aspects of their identity at the door” when they come to engage in thinking about teaching (Clegg 2003, p46).
- This new understanding can in turn lead academics to explore new areas of related research within the discipline they have primarily practised in, without necessarily knowing this large body of knowledge and literature. This, in turn, can carry them into ongoing development and improved practice.
- This is an emerging area, and so teachers feel they can contribute to the development of the field and make original contributions to research.
- They promote a holistic approach to development in that the focus is about knowing and understanding, but also about examining roles and identities, and underlying beliefs and values. This transformed understanding of a discipline connects to development of teaching and changes to personal growth and identity.
- They achieve high-level outcomes regarding student centred teaching and more particularly in clarifying ‘what’ it is that students should learn and why it is important, where they effectively shift the focus from teaching to learning and from content to understanding. The focus is automatically upon key concepts and understandings rather than ‘topics’, which has proven difficult in the past to shift. The focus then is upon how their students learn these concepts, as well as how they teach them to enhance learning. See O’Brien (2008) for a framework that discusses threshold concepts in relation to the question “what it is students should learn” and maps this into the broader SoTL landscape.
- The process of exploring this area puts teachers in dialogue with others from different areas - faculty developers, students and other researchers - exposing them to multiple and diverse perspectives, which might lead to an awareness of both common understandings and key differences. Thus they provide conditions for intersubjectivity - shared meaning making – within which teachers maintain their expertise and identity. This is evidenced by the numerous collaborative projects currently being undertaken across disciplines and institutions and in some cases countries.

To end reflexively, threshold concepts have provided a means for me to critically evaluate my own practice and, more broadly, how best to support the development of scholarly teaching. In my journey I have transformed my view of this and also of threshold concepts to come to a place that supports the view proposed by Meyer and Land (2005) that the idea of a threshold concept will serve to operate, in itself, as a threshold concept. And it is in their examination that lies the trigger to inspire the development of SoTL.

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