

## From Concept to Practice: Conjuring Thresholds

Jane Love, Furman University, USA

In “Thresholds are Troublesome,”<sup>1</sup> Ray Land says, “I think if we were starting again, we would probably use the term ‘learning thresholds’ because what we’ve realized later is that . . . threshold practices . . . also act equally in this rather portal-like way.” The author James Rhem continues: “[T]he terms ‘threshold concepts’ and ‘troublesome knowledge’ [. . .] suggest the two sides of learning—the cognitive on one side and the affective on the other. ‘The term “threshold concepts” has sort of stuck like a brand,’ Land admits, ‘and you’re right, it does seem to signal a more cognitive dimension, but we’ve always been aware that *all learning requires and occasions a change in subjectivity, a change in self and awareness of self*’” [emphasis added].

The concept of threshold concepts has been critiqued<sup>2</sup> because of how it seemingly conflates the cognitive and the affective, and yet it is precisely the inclusion of affect that makes the concept so refreshingly provocative and liberating, despite the problem of identifying threshold concepts as such. A recent article by Dermot Shinnery-Kennedy and Sally Flinch<sup>3</sup> charts their journey in attempting to identify threshold concepts in their field of computer science. Eventually, they conclude that “thresholdness” lies neither in concepts nor in student recollections of learning, but in “pedagogical content knowledge” (PCK): “Teachers who are able to draw on a repertoire of approaches, to respond to student needs, to present and explain material in a wide variety of ways, to draw disparate areas of the curriculum together, to show how the material being learned is linked to more advanced concepts (or to concepts already well-known) are characterized as having high PCK.”

The suggestion is that threshold learning experiences are often the results of informed, expert, deliberate choices made by teachers to shape and influence students’ encounters with new concepts. In other words, “thresholdness” is a quality of intellectual experience, one that expert teachers are able to conjure.

An obvious question is: how, exactly, do teachers go about eliciting “thresholdness” in student experience? But I am equally intrigued by an accompanying question: assuming that students do sometimes have spontaneous, gratuitous threshold experiences, quite apart from pedagogical engineering, then might they be assisted toward such experiences on their own? If transformational learning is what we are after, then must all such learning be midwifed by a teacher? Might students be able to create their own threshold experiences, not necessarily as a replacement for instruction, but as a way of deepening the affective power of their learning, increasing their sense of ownership over it?

If integration is, for many, the most troublesome aspect of threshold knowledge, then perhaps a tool that supports students in generating creative connections could precipitate insights leading to transformative understanding. This spring, I intend to explore the potential of one such tool, a variant of Herman Hesse’s glass bead game known as the Waterbird Board<sup>4</sup>, and will report on the outcomes. Perhaps this experiment will suggest further exploration of heuristic devices as triggers for threshold learning experiences.

<sup>1</sup> Rhem, James. “Thresholds are Troublesome,” The National Teaching & Learning Forum, Volume 22, Issue 4, article first published online: 27 May 2013; retrieved on 1/17/14 from <http://onlinelibrary.wiley.com/doi/10.1002/ntlf.20009/abstract>.

<sup>2</sup> O'Donnell, Rod. “Threshold Concepts and Their Relevance to Economics.” 2009. Retrieved 1/17/14 from <http://ro.uow.edu.au/cgi/viewcontent.cgi?article=3186&context=commpapers>.

<sup>3</sup> Shinnars-Kennedy, Dermot, and Sally A. Fincher. Identifying threshold concepts: from dead end to a new direction. In *Proceedings of the ninth annual international ACM conference on International computing education research (ICER '13)*. 2013. ACM, New York, NY, USA, 9-18. Retrieved on 1/17/14 from <http://doi.acm.org/10.1145/2493394.2493396>.

<sup>4</sup> Created by Charles Cameron. Retrieved on 1/17/14 from <http://hermetic.com/hipbone/IDTWeb/WBvoidBd.html>.