

CHAPTER II

Threshold crossings and doctoral education: learning from the examination of doctoral education

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Introduction

Doctoral supervision has been identified as a key factor in timely PhD completion. Therefore, this chapter sets out to explore what can be learned from doctoral examinations to support doctoral education and supervision. Applying the lens of threshold concepts theories it reflects on findings raised in previous research reports. We argue that threshold concepts theories, in addition to providing useful insights for doctoral examining, also inform supervisory approaches and enhance doctoral students' learning and completion. We show that understanding conceptual threshold crossing at different stages in a doctoral student's learning journey, and the learning, teaching and supervision which support this, can lead to more effective learner strategies, focused guidance and student preparation.

Learning about doctoral education from the examination process and examiner comments offers insights to supervisors that can lead to more effective learning and supervisory strategies. Generally, there has been limited research on assessing the PhD (Denicolo 2003; Holbrook et al. 2007; Lovat et al. 2015) from which learners and supervisors can draw. However, our work here reflects on what examiners look for, from the perspective of threshold concepts theories. We apply a framework of conceptual threshold crossing, i.e. stages in learning where breakthroughs in that learning or 'learning leaps' take place, leading to conceptual critical and creative work. Drawing on the work on discipline-based threshold concepts of Meyer and Land (2006, 2005), we argue that the idea of a threshold in learning provides a useful heuristic tool for explaining stages of achievement in doctoral study which might (and it can be argued must) also be visible in the work submitted for examination. We reflect on the usefulness of the idea of conceptual threshold crossings for doctoral education, drawing on

the research from examiners' reports (Kiley 2004) and interviews (Wisker et al. 2010), where examiners discuss the features of successful doctorates. We explore how examiners identify and demonstrate that doctoral candidates have crossed conceptual thresholds in their work. Our chapter concludes by arguing that examiners have an awareness of conceptual thresholds being crossed, even though they might not be familiar with the language/meaning of the term threshold crossings, so supervisors and students would benefit from strategies addressing/tackling liminality that precedes crossings.

Threshold concepts

The work of Meyer and Land (2006, 2005) raised awareness of discipline-specific threshold concepts, differentiating between core learning outcomes that represent 'seeing things in a new or transformed way' and those that do not. It is argued that threshold concepts are transformative. Once grasped, they lead to changes in identity (ontology), and perception and construction of knowledge in the subject (epistemology). Meyer and Land (2006, 2005) maintained that threshold concepts are characterised by: integration (sense-making of disparate aspects and exposition of previously hidden interrelatedness); irreversibility (views unlikely to be forgotten or unlearned); boundedness (conceptual spaces opened up are bounded by specific aspects within broader frameworks of knowledge); and troublesome (challenging to grasp and understand). When applied to doctoral learners in particular, candidates can be seen to pass through conceptual gateways or portals involving 'reconstitutive' moments (Meyer and Land 2005) in their doctoral journey.

Conceptual threshold crossings

While threshold concepts have largely been explored in undergraduate learning in the disciplines, earlier work by Kiley (2009) applied the concept of threshold concepts to learning to be a researcher. The work was extended by Kiley and Wisker (2009) and Wisker (2010) to encapsulate particular stages in a doctoral candidate's learning journey and their written thesis, in which their thinking and articulation reaches or exceeds conceptual, critical and creative levels sufficient for the standards expected for the award of a PhD. Transformations may be one or

several, sudden or protracted over a considerable period of time. Meyer and Land (2005) describe as liminality the state which precedes actual threshold ‘crossing’ and which seems to be characterised by oscillation, confusion and a mimicry of the language and research behaviours seen as expected of them at this level. Doctoral candidates might well feel ‘stuck’ and confused, and we have argued that enabling them to become aware of the threshold crossing moments, the importance of these moments, and manageable examples or evidence of conceptual, critical and creative work at this level can help them move forward (Kiley 2009; Wisker and Robinson 2009; Wisker et al. 2006). Understanding threshold concepts and the liminal states in research education can more adequately assist students during this time.

Evidencing critical threshold stages crossed: the what

Evidencing doctorateness is fraught with complexity since defining explicit assessment criteria is challenging (Denicolo and Park 2010). Transformed learning is a key goal of doctoral education and involves a re-evaluation of past beliefs and experiences as previously understood – a critical awareness of one’s own and others’ assumptions, expectations and beliefs, and re-assessment of these to develop an interpretation (Mezirow 2000). Threshold concepts theories similarly emphasise these cognitive, ontological and epistemological factors in expansions of worldviews, troublesome knowledge and transformations of learning.

The existing research on doctoral examination (Mullins and Kiley 2002; Lovitts 2007; Lovat et al. 2015) reveals a rich, coherent tapestry of examiner awareness of the characteristics of a good PhD. Drawing on two studies, one from Australia (Kiley 2004), the other from the UK (Wisker et al. 2010), we find that threshold crossing provides a useful framework for articulating/conceptualising stages reached/achieved that demonstrate characteristics of a ‘good’ PhD. In exploring conceptual threshold crossing, the importance of intellectual, cognitive, and ontological achievements and epistemological awareness as indicators of research learning and conceptual threshold crossing is evident. Examiners (see Kiley 2004; Wisker et al. 2010) typically evidence these conceptual threshold indicators in work and its defence that demonstrate an extension of knowledge, an appreciation of the location of the study in relation to other studies, philosophical and epistemic

awareness, appropriate risk taking, conceptual clarity, mounting challenges on established positions and reflexivity. Conceptual threshold crossings are also evidenced in the writing (thesis and related publications), through ownership of the research material, and fluent use of the discourse of the discipline, of research learning and of doctoral level work. Examiners consider the viva as confirming doctoral worthiness as evidenced in the thesis, exploring further areas not adequately or clearly addressed and highlighting weaknesses that needed redressing. Doctoral candidates' expression of awareness of self re-positioning, the 'reconstitutive' effect of threshold concepts, and the 'going beyond the troublesome' are also indicated as apparent in the successful work, in examiners' comments.

Evidencing critical threshold points crossed: the how and which qualities

Meyer and Land's (2005) threshold concept theories neither set out to address nor explicitly address the examining process or how examiners progress through the thesis and viva and reach summative judgements. Their thinking evolved around learning and recognising that learning had occurred, and initially only at undergraduate level, rather than at doctorate level or in the examining process. They also did not focus on the conceptual threshold crossings evident in stages in the research as expressed in the thesis. Such stages have been indicated as the clarity of a research question, engagement in a dialogue which situates the new work in the literature review, articulation of a sound methodology and methods for the research, the engagement with the theorising in data analysis, and the drawing of conceptual conclusions (adding to and deepening meaning, going beyond factual conclusions) in the conclusions section.

In this research, then, at both doctoral level, and in the context of the examination, our work offers new and additional insights into conceptual threshold crossings, and so extends both their original work and our own earlier work on crossings as identified by students and by supervisors (Wisker et al. 2006). We were interested to explore in the earlier research (Kiley 2004; Wisker et al. 2010) how examiners recognised the transformational learning and the conceptual threshold crossing stages as evidenced in the PhD thesis. The research provides insights both into how they approach examining a thesis and which qualities indicate a pass, or

achievement at the margins. Comments reflect awareness of the evidencing of conceptual thresholds that are crossed in a thesis which passes, and that need to be crossed in order that a thesis passes. The examiners told of differing processes of reading through the PhD (for example, back and forth, straight through, specific chapters first then others) that suggest presentation, architecture and structural considerations are important criteria for a passable thesis, in addition to those of the crossing of conceptual thresholds. This was strongly supported by the research reported in Mullins and Kiley (2002), which details a range of necessary qualities in a thesis which passes.

Language is central to presentation in its semiotic and syntactic form. Typographical errors and poor expression of ideas are key pet hates of examiners progressing through theses and which they report influences their initial view of thesis quality. Meyer and Land (2005) argued that extension of language signifies conceptual threshold crossing through discourses of how new thinking was expressed and communicated, in a manner that fitted in within the use of language and practice of the discipline, and community of practice. “Irreversible conceptual transformations” (Meyer and Land 2005:373) are another key signifier of thresholds crossed. Transformed learning and knowledge feature highly in examiners’ estimations of doctoral achievement, as an indicator of whether a PhD has crossed conceptual thresholds.

There might be some dissonance amongst examiners about the extent to which conceptual thresholds can be crossed, or regarded as crossed by examiners at vivas where doctoral candidates are questioned on their research as expressed in their written theses. Falling back to Meyer and Land’s characteristics of threshold crossing, for example, the re-positioning of the self and seeing the interrelatedness of concepts, it is possible to see how for some students, or examiners, thresholds might be crossed during the viva.

Liminality, conceptual threshold crossing and successful doctoral education

Whilst examiners in the two studies (Kiley 2004; Wisker et al. 2010) do not explicitly indicate an awareness of liminal spaces in their assessments of theses, they do indicate an implicit and sometimes explicit awareness of conceptual thresholds crossed, as the above discussion (based on analyses reported in published and

unpublished work) has shown (Wisker 2010, 2012). Meyer and Land (2005) describe liminality as a transient phase where conceptual thresholds have not been crossed – transformed learning and knowledge has not fully occurred. Therefore, applying a conceptual threshold framework to the examination process, we argue that examiners become aware that some of those doctoral candidates are within a liminal space, and, while unlikely, it may be that some have not even reached the stage of liminality.

Liminality is a useful metaphor for describing the learning trajectory of the conceptual transformation which learners undergo (Meyer and Land 2005). Based on this clarification, epistemological obstacles can be identified and strategies developed for illumination. In our various studies, examiners' comments reveal that they reflect on their own supervisory strategies for aiding completion. These include clear instruction, and the need to give clear feedback, as examiners, where theses are weak. Framing feedback in the language of conceptual threshold crossing and threshold concepts theories may serve as a useful tool to illustrate what corrections are required, in which dimensions and to what extent. Transformation, illumination and revelation are key signifiers of threshold crossing, which, some argued, sometimes occurred and was evident in the thesis at stages including the question identification, research design, engagement in a dialogue with the literature and theory-informed data analysis and interpretation, as well as the viva stage. For supervisors, activities such as dialoguing, and questioning that encourages critical thinking and reflection are advocated at each stage of the student's development, and also seem to be useful during the examiner's activities in the viva, to the same ends of revealing good research, well explained.

Conclusion

As numbers of doctoral students increase, it is important to have frameworks that inform both learning and examining to address concerns about completion and the quality of the PhD. Threshold concepts theories offer one way of looking at the transformed learning that is necessary for doctoral level work. The existing research related to examination indicates recognisable characteristics of successful theses, from which it can be inferred that those that do not have these characteristics are in a state of liminality with regard to that aspect of their research

learning. Additionally, the research provided evidence of examiner awareness of the particular elements or stages in the thesis, which they see as indications of acceptable quality of critical, creative, conceptual work of a level which merits a doctorate. Furthermore, one can begin to have insights into the contribution of the viva in enriching both the learning achievement and its articulation for the candidate. Identification of the characteristics of successful conceptual threshold crossing as acknowledged in the interview responses of the examiners from both studies (Kiley, 2004; Wisker et al., 2010), informed by threshold concepts theories, can be of use to our understanding of doctoral education and of explicit practical use to supervisors, students and examiners.

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