Gina Wisker

The 'good enough' doctorate: doctoral learning journeys

In the context of growing postgraduate numbers, this article focuses on key questions concerning the quality and nature of the PhD by questioning how one can identify what constitutes a "good enough PhD". Building on international research and a large British National teaching fellowship funded project "Doctoral learning journeys", it suggests that key quality features include research design, development and final thesis which evidence conceptual, critical and creative enough work. Research and the article consider ways in which strategies, practices and performance help students engage with research to such a doctoral level, as well as develop their practice beyond the PhD itself to help build sustainable research communities.

Die 'toereikende doktorsgraad': doktorale geleerheidsreise

Binne die konteks van toenemende getalle nagraadse studente fokus hierdie artikel op sleutelvrae oor die gehalte en aard van die PhD deur te vra hoe 'n mens 'n PhD kan identifiseer wat "toereikend" is. In aansluiting by internasionale navorsing en 'n projek "Doctoral learning journeys" wat deur 'n groot nasionale onderrignavorsingsbeurs in Brittanje befonds is, word voorgestel dat sleutelgehalte-kenmerke die navorsingsontwerp, -ontwikkeling en finale tesis insluit. Bewys moet gelewer word van bevredigende werk op konseptuele, kritiese en kreatiewe vlak. Maniere word ondersoek waardeur strategieë, praktyke en prestasie studente kan help om tot op doktorale vlak met navorsing om te gaan, asook om hulle praktyk te ontwikkel sodat dit ná die PhD tot die ontwikkeling van volhoubare navorsingsgemeenskappe kan bydra.

Prof G Wisker, Centre for Learning and Teaching, University of Brighton; E-mail: g.wisker@brighton.ac.uk

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> The best Doctorate is the one you finish and hand in. We are all try-
> ing to enable the 'good enough' Doctorate (Gina Wisker – anecdotal
> thoughts).

This article focuses on key issues concerning the quality and na-
ture of the doctorate (PhD, DBA, Prof Doc, EdD) by question-
ing what defines and how one can identify what constitutes
a "good enough" doctorate; in other words, one which achieves the
appropriate level of work equal to the award, and makes a contribu-
tion to knowledge.[1] These issues concern what constitutes evidence
of the level of that achievement. The current Britain-based Higher
Education Academy-funded National Teaching Fellowship Scheme
(NTFS) project 'Doctoral Learning Journeys' (2007-2010) develops
earlier, ongoing and complementary research which explores doctoral
student learning variations in approach, including dissonance, super-
visory practices, dialogues, communities of practice, research develop-
ment programmes and meta-learning. This major team-based project
is located in Britain. It uses a survey of 350 British PhD students, lon-
gitudinal narrative interviewing of 20 PhD students, and interviews
with 20 supervisors and 20 examiners. It is accompanied by a parallel
twin project using the same questions for the three groups – doctoral
students, supervisors and examiners, in international contexts in order
to expand the information base, and identify trends and variations in
different contexts. On the one hand, this maintains the purity of the
NTFS project for reporting purposes and, on the other, expands the
information base, retaining the focus of the project's research design
so that results can be combined across projects for reporting beyond
the funded project. The research design, methodology and methods
are explored below. The twin projects are referred to throughout as
the NTFS doctoral learning journeys project (DLJ) and the parallel
project. These current projects develop ongoing and previous work
underpinned by theories of threshold concepts in disciplines (Meyer &
Land 2006 & 2008) and generically by conceptual threshold crossing

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at the doctoral learning level (Kiley & Wisker 2009) with the focus on "learning leaps", moments of transformational learning. Specifically, the twin projects explore conceptual threshold crossing in doctoral work.

This research suggests that key features in the "good enough" Doctorate include sound appropriate research design, development and a final, well-written thesis which evidences conceptual, critical and sufficiently creative work. It considers ways in which strategies, practices and performance help students engage with research at such a doctoral level, as well as develop their practice beyond the Doctorate itself to help build sustainable research communities.

As numbers of postgraduates undertaking Doctorates increase, so do debates concerning the nature and quality of the Doctorate. Key issues in this ongoing debate relate to the elements that need to be present in a Doctorate for it to be considered "good enough". Such a definition does not intend to dumb down the Doctorate but builds on Gerry Mullins' and Margaret Kiley's key phrase "It's a PhD not a Nobel prize" (Mullins & Kiley 2002) to recognise a contribution to knowledge, which evidences quality. This definition indicates that a successful Doctorate contains all the elements to pass, to make a contribution to knowledge which is at doctoral level, and to indicate to anyone who has the qualification, or who wishes to employ someone with the qualification, that they have the necessary skills, capabilities and experience to be a good researcher beyond the Doctorate itself. According to the literature on what examiners expect of a Doctorate (Winter *et al* 2000, Bourke *et al* 2004), a Doctorate should indicate that the student is able to problematise, conceptualise, successfully design, construct, and conduct research; work creatively, critically, and then analyse, interpret, and write thoroughly to completion and beyond to publication, dissemination and change. The achievement of a Doctorate not only manifests in a completed qualification for the student but enhances a range of attributes and achievements, of behaviours and values, of skills and approaches, of certain levels of undertaking and completing work. Another key question which accompanies this exploration into the nature and quality of research in the Doctorate and the person who achieves it, concerns the activities, people and behaviours that support and enable the achievement of a

Doctorate. The issues explored in this article are the characteristics of a good (enough) Doctorate and the characteristics of a sound post-graduate researcher.

Early work (Kiley & Wisker 2008 & 2009, Trafford & Leshem 2008, Wisker *et al* 2008 & 2009) has started to identify threshold concepts and conceptual thresholds at the research education level. This article discusses parallel research projects and the sharing of effective supervision practice underpinned by theories of threshold concepts (Meyer & Land 2006) and conceptual thresholds (Wisker *et al* 2008). It indicates activities which have been used to encourage postgraduates to work at a suitably conceptual, critical and creative level towards achieving their doctorate.

1. Theoretical framework

Threshold concepts are defined as the essential concepts in a discipline which unlock the ways in which knowledge is created and understood in that discipline (Meyer & Land 2006, Land *et al* 2008). Their achievement is evidenced by troublesome knowledge; movements on from 'stuck' places; movement through liminal spaces into new understanding; transformations; ontological change – seeing the self and the world differently, and epistemological contribution - making new contributions to understanding and meaning.

Threshold concepts can be regarded as distinct from core concepts – they are more than building blocks, and lead to a qualitatively different view of the subject matter and construction of knowledge. They have parallels with Mezirow's (1978) work on perspective transformation, and are probably irreversible and integrative – exposing the previously hidden interrelatedness of something.

This present research explores the recognition and perception of threshold concepts at the doctoral level. More innovatively and particularly it explores conceptual threshold crossings. These are defined as stages in the development of research as learning when "aha" moments or "learning leaps" take place and students start to work at higher levels which are conceptual, critical and creative. The article explores ways in which the crossing of such conceptual thresholds can

be evidenced in research designs, approaches, and writing, overall defined as "articulation", which is both the coherence of the work and its expression. It also explores what might enable such crossings and new levels of learning to take place and be sustained. To date, various learning activities, all part of the research development process, have been identified, which could enable "learning leaps" or conceptual threshold crossings to take place. Interestingly, participants have also begun to talk about experiences in their own lives, rather than the research, which have also nudged such developments. Those stages in the research which participants and supervisors have identified as significant in nudging students to work at a higher level include definition of the research question or hypothesis; developing the research design; supervisory dialogues; engagement with the literature; analysis and interpretation of data; the final stages of writing the thesis, and defence of the research in the viva.

2. Methodology

The doctoral learning journey project (DLJ) uses quantitative and qualitative approaches, combined in four research stages. Stage A began with a survey of large numbers (@350) of British-based Doctorate students in four subject areas, namely arts, humanities, health and social sciences, to capture a range of responses to the exploration of the experience of acquiring and putting into practice both disciplinary and generic threshold concepts, and crossing conceptual thresholds in the research journey. The research questions were developed from consideration of earlier research (noted above) and ongoing parallel research which had begun to identify conceptual threshold crossing moments and practices which "nudged" such threshold crossing, moving postgraduate research into levels of conceptual, critical and creative learning. Stage B maps the individual learning journeys of 20 doctoral students by means of narrative interviews and journaling. Stage C involves semi-structured interviews with doctoral supervisors (20), examiners (20) and research programme leaders (5). Finally, Stage D develops theoretical models and resource materials relating to supervisory strategies, e-learn-

ing environments and written texts to support doctoral students' learning and scholarly progression.

Parallel research has been conducted with international postgraduates and supervisors using the same questions as for the DLJ project. The article explores the possible existence of both threshold concepts and conceptual threshold crossing, moments of learning leaps where the doctoral student makes a distinctively different kind or level of research engagement and creativity, contribution to knowledge, and ways of "nudging" such leaps. Discipline-specific threshold concepts and generic postgraduate level conceptual thresholds have been and are being explored.

Several research questions underpin the exploration of postgraduate students' work in terms of the levels with which they engage and the quality of the work and skills produced. These include for the students:

• Does the theory of threshold concepts describe and appreciate the kinds of learning research candidates can/must make in their work for it to achieve a doctoral standard?

• Are there generic conceptual thresholds and how might the crossing of such generic doctoral thresholds be identified?

• Are there discipline-specific conceptual thresholds at the research level?

• How can one identify when a candidate has crossed a threshold?

• How do doctoral students signify their awareness of working conceptually?

For the supervisors:

• How do supervisors recognise students' conceptual grasp of research?

• What strategies and activities do supervisors use to encourage or "nudge" conceptual grasp by doctoral students?

For the examiners:

- How and where do examiners identify and assess conceptually robust research outcomes and skills developments?

3. Results

Analysis of both the survey and narrative interviews in the NTFS doctoral learning journeys project (Wisker *et al* 2009) identifies student awareness of beginning to work at a more conceptual, critical and creative level in their doctoral studies, although for many who are in their first year, this is often couched in terms which express a pre-liminal state. The survey identified the following themes which indicate ways in which doctoral students discussed, recognised and indicated crossing any conceptual thresholds:

- Discovery – the identification of a new theory, theorist or concept that encapsulates thinking.
- Synthesis – the bringing together of two or more concepts to create a new concept.
- Verbal – the discovery of new ways of thinking as a result of discussion or the recognition of knowledge sufficient to defend a position.
- Mechanical – almost superficial adoption of conceptual position to satisfy requirements of discipline.
- Innate – "I always thought this way".

In both the survey and interviews, doctoral students used a variety of metaphors to describe their learning journeys and experiences. Learning "leaps" or major growth moments are often described metaphorically, in visual terms such as "a lightbulb moment" or in kinesthetic terms "things clicked into place", as are moments where students feel they are stuck, for instance "I hit a brick wall". According to an analysis of the data to date from both the DLJ and parallel projects, learning moments where students indicate conceptual threshold crossing may occur when they identify research questions; determine relationships between existing theories and their own work; develop appropriate research design; devise methodology and engage with methods; analyse and interpret data; reach conceptual

and factual conclusions, and express their achievements in the final thesis and in the viva.

Issues have been raised concerning the kinds and stages of development, including liminality (stuck places and movements through); praxis (integration of concepts and action, change); dialogue (discourse of subject and research, dialogue between ideas and practice, people); ontology (identity/identities) and epistemology (knowledge – contribution to meaning).

Students and supervisors talk of moving beyond stuck places in the work, through moments which we define as conceptual threshold crossing, often perceived when concepts, or concepts and practice are integrated, to see the developing work anew. They report that this takes place when the work engages in a dialogue with the literature through reading and writing; when supervisors and students are in dialogue in supervision, in developmental feedback, and when students and their peers are in dialogue at moments of critical friend support, or of presentation of the work.

4. Student responses

Student responses to the following questions have yielded interesting evidence of awareness:

- How can one identify when a candidate has crossed a threshold?
- How do doctoral students signify their awareness of working conceptually?
- How do students' conceptual grasp and comments display crossing of subject-specific and generic doctoral thresholds?

Doctoral students' interview responses indicate learning moments, "aha" moments and "learning leaps". One student noted:

> In terms of learning moments I think you have those small or medium moments every now and again, don't you, when you read and you are exposed to new ideas and you think ah now, I've got it and then actually a couple of weeks later you're a bit further but then you have another one of those moments and so you kind of gradually I guess get closer and closer to the final thing, the final shape of your theories and ideas about it (DLJ project: second-year Philosophy student).

They also acknowledge being "stuck" and moving on through what can be defined as liminal states, to a new understanding and level of conceptual, critical, creative engagement with their research.

> A couple of weeks ago I found that things have stopped […] mentally I found myself up against a brick wall […] I just felt that I was kind of stuck and it wasn't moving and it was all bitty, I'd done all these chunks of work but I couldn't really see how they fitted together and yeah so I reached quite a crisis point. Especially when I got negative feedback I just felt quite down hearted about it and, but like I say I think having the supervision, talking it through, taking a step back from everything, taking it to bits and being questioned about everything and then having to simplify everything, in order to present. I mean over a couple of days - my supervision was one day and my presentation was the next day.

> I came out of that whole process feeling that I could kind of see it, I could see that there was shape there […] I can see shapes (Parallel project: first year Gender Studies student).

This student indicates the importance of visualisation, stepping back, looking at her work in a more abstract fashion, then reidentifying what is important, how it coheres, and what is to be done next. This process of clarification is aided by handling the negative comments and moving on from them, using them to help reorganise and focus the work, discussing progress with the supervisor and managing the work into a shape suitable for presentation to peers. All of these can be activities whereby a supervisor might help to "nudge" students into a new level in their research and writing.

A third student, an international, part-time student who is studying at a distance, talks about the importance of experiencing the academic atmosphere of the university as giving her the opportunity to focus on her work. She also identifies an "aha" moment which leads to a learning leap, when she sees the coherence in her work, identified in this instance as a kind of matrix (an image many of our respondents have described):

> Well, actually, I wasn't talking about the thinking right, I was talking about I think more about the, I have the word, it is [?]. To be more attuned to my task when I am coming here. So, I am kind of collecting from the basket all the skills that I need to the task. So, that is one thing. In the way of thinking again, I feel that I, I tell you, I give you an example – yesterday night I was going with in the car, we went to X, we were invited to X and suddenly

> I heard, I saw the matrix that I want of the variables. I said, yes, give me the paper, I have everything, you know. Like from this side and this side, I have everything written and it can be also at home but if you are doing this brainstorming in this atmosphere, I think that this thing can happen especially in times like that and this is something in the thinking in terms of joining variables and understanding like the like the triangulation which was much more clearer to me this time and then I kind of said, ok triangulation this and this and this, you know, so I don't know if that answers more about the thinking process, ok (Parallel project : third year Social Science student).

The sudden need to put the new understanding on paper (even though she was travelling in the back of someone's car to supper with a supervisor) is an indication of the student's breakthrough moment, and her excitement at understanding the work more clearly, at a new level.

Key moments are emerging for the facilitation of conceptual threshold crossing for postgraduates, making learning leaps into working at a conceptual, critical and creative level. To date, some of these are identified as taking place in the conceptualising and realising of their research, milestones on the design and implementation of the research, and milestones when the student engages in the writing process, in dialogues with supervisors, and in presenting to peers, all of which aid articulation and communication.

Supervisor dialogues, reflections, writing or discussion with a critical friend or community aid the clarification of levels of work at these different stages. Some of the above responses indicate ontological shifts, so that the third student recognises his/her identity as a postgraduate more completely when in an academic context, and the second student when delivering to peers. Facility and articulacy with the discourse of the discipline at a doctoral level are all important. Postgraduate researchers need to use the meta-language of research to indicate thinking, planning, research work and articulation of their contribution to knowledge.

The next section on supervisor responses will be followed by a consideration of some elements of activities with postgraduate students which engage them in moving towards or enabling their work at a conceptual, critical and sufficiently creative level to achieve a "good enough" Doctorate.

5.   Supervisor responses

Supervisors have also indicated their awareness of these "aha" moments, learning leaps, their evidence in the student's work, and some ways of "nudging" students into conceptual, critical and creative levels of work. Their responses produce evidence related to the following questions:

- How do supervisors recognise students' conceptual grasp of research?
- What strategies and activities do supervisors use to encourage or "nudge" conceptual grasp by doctoral students?

Supervisors' comments are all from the parallel research. They identify their recognition of threshold crossing, and their thoughts about what "nudges" students across. In particular, supervisors A, B and C below mention what we call indicators of "change":

> I think the skill of helping somebody through this thought process in terms of research came from my own PhD. I mean, it has to, because I think that I had such a struggle and because I had such a struggle, I knew where I was coming up against brick walls and where I could have done with understanding the process better as I went along. And so I think that it was out of my own sort of conflicts that, that I recognised those in other peoples. Is, is being able to see that problem and then just sort of say, 'well, what do you think?'. You know, 'which way do you think that you are going to go?' (Supervisor A).

This supervisor identifies moments of guidance which have grown from their reflecting on their own research experience and putting into practice what supported them in their own progress.

> I do think there are some disciplinary differences. I still feel a bit shocked that people might suggest that you can have a good enough PhD and that they may not make that conceptual leap. I still believe that the goal of the doctoral programme regardless of the discipline is that they make a number of conceptual leaps otherwise we can't argue that it is a substantial, significant contribution to the knowledge (Supervisor B).

This supervisor highlights the importance of the conceptual level of work in postgraduate study, despite any noticeable disciplinary differences. An interview with Supervisor C introduces issues of the personal into considerations of what might enable or prevent a

student from working at a conceptual level. This is often not so much their ability or their research design, as personal circumstances preventing engagement, concentration, and sustained work.

> Supervisor C: What they are capable of and in terms of what they write I am very impressed. So often these are people who are adults, they have problems, they have families, a couple of them have had crises.
>
> Interviewer: ... and that stops them from working at anything other than university level?
>
> Supervisor C: It stops them from working at all, once they have finished their coursework, and they have gone off to deal with their family issues.

Personal issues can often prevent students from achieving a good enough level of work to achieve their Doctorate. Indeed, they can prevent any work at all. This supervisor continues:

> When they are writing that's when I work really hard with the students. They send me each chapter sometimes several chapters. It's me that goes through the threshold (Supervisor C).

Their final comment is also interesting, and one reiterated by several of the supervisors interviewed. They point out that the writing process nudges students into conceptual levels of work and articulation of their achievement. They also note that the supervisor must have made the learning leap too, to accompany the student on the journey sufficiently to understand what has been conceptualised and articulated. This is not so that they answer the questions for the student but so that they know where to prompt, recognise, and reward achievement of conceptual levels of work.

However, there are also "stuck" places where students seem unable to move on in their work or achieve a good enough level. Some of these are caused by misconceptions – underdeveloped or missed – revealed in the language used, which is how one articulates understanding, represents and communicates constructions of meaning. At postgraduate level, students might have problems with the metalanguage of doctorateness which theorises their work, including terms such as "conceptual framework".

One supervisor emphasises students' use of language and expression:

> the choice of language used to introduce threshold concepts, and indeed used in the naming and explanation of the concepts themselves, can be troublesome and can present epistemological obstacles (Supervisor D).

6. Activities to 'nudge' postgraduate students' work: some interactions

It is highly probable that some postgraduates need little real "nudging" to engage with conceptual, critical and creative levels in their work. The category of "innate" which emerged from the survey could serve to describe their "always already" level of research engagement. However, it has also emerged in the present research and supervision that for some students at least, moments of "nudging" are helpful in enabling them to focus on levels of work, and make learning leaps to cross conceptual thresholds.

Supervisors have indicated that moments of identifying a research question are an example of when a learning leap can take place. It is a key activity to support and enable students to begin to narrow down and clarify the field of research and to problematise elements within their specific area of study. In the research team's own work with postgraduates on a large postgraduate development programme, and in the present author's work with supervisors at workshops exploring this moment, it has been discovered that the process of using visualisation of an image of the whole field of study, seen as the "whole cake" (see Figure 1), with the chosen research question and specific design seen as "a slice of cake", engages students in identifying the area of their work which differentiates it from other interesting areas in the full field of knowledge, and helps distinguish their research methodology and methods from the full range available which they might engage to ask their question. Later in their development, when analysing large quantities of data or drawing conclusions from the whole research project, returning to such a visual image again focuses students on managing their

research. They can use the visualisation of selecting their "slice of cake" which might have changed and shifted since they began their research, and so consider ways of selecting and interpreting elements of the data they have collected and the arguments which they can now make. The question might have shifted; the findings will help refocus what is being asked and what achieved. The slice of cake might be slightly changed. This helps a specific focus on specific arguments whose claims are backed up by selected evidence from the data, underpinned by theories.
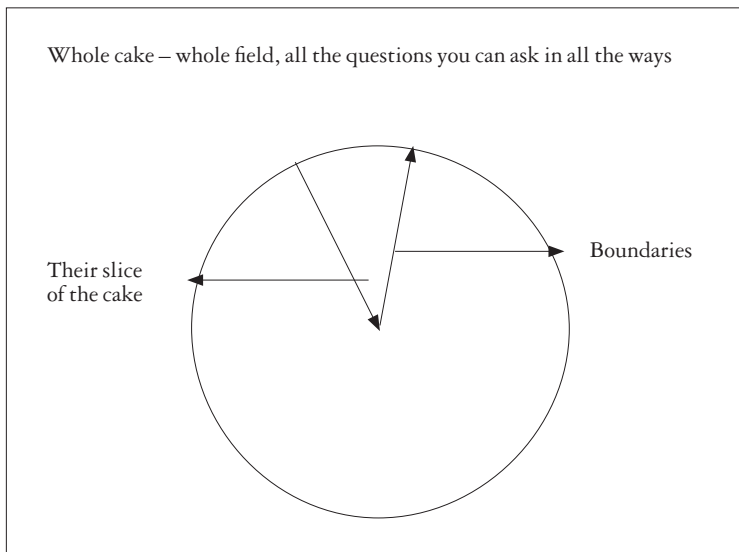

Figure 1: Identifying a research question

Another visual image found useful in practice, which also seems to be able to nudge students into a more conceptual, critical and creative response in their research, is one which compares research as a messy journey, which begins well-planned, and the thesis as a well-built building (cf Figure 2).

Research is a journey	A dissertation/thesis is a buiding

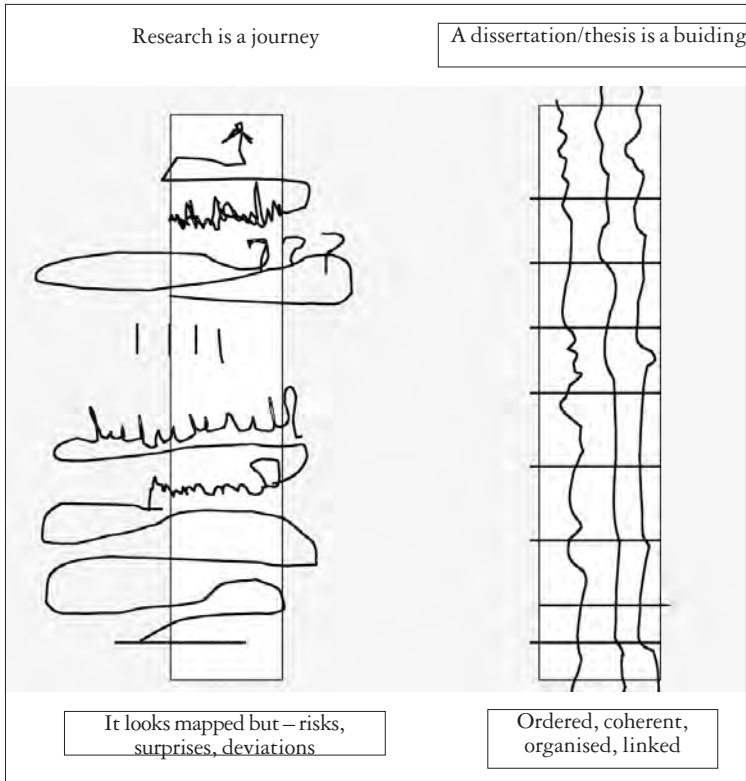| It looks mapped but – risks, surprises, deviations	Ordered, coherent, organised, linked

Figure 2

(Wisker 2008)

The notion of the journey underpins the NTFS doctoral learning journeys research. The notion of a well-designed and -built building is aspirational, some students have remarked, especially while they are still struggling with the joint activity of research and writing. As one student en route noted of his work:

> A beautifully architected building is fairly misleading. It is the work, the result of being up here on the journey (Parallel research: Student D).

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While another used it as an ironic measure of his own development so far:

> No wonder it is so daunting for the rest of us to consider construct-ing such a building, because we are not actually anywhere near where we could build it. A mud hut is as much as I could hand in at the moment (Parallel research: Student R).

Previous research has explored ways in which dialogues between supervisor and student can promote conceptual, critical thinking.[2] In interviews, both students and supervisors acknowledge the neces-sity of engagement with feedback which deliberately promotes such levels of work. Such feedback is likely to engage at a variety of levels. Supervisors and students both comment on how some feedback seems to merely correct a wrong expression or statement, while more effec-tive feedback prompts thoughts beyond the "say more" level to "why might this be?", "What does it contribute to your argument?", point-ing out the importance of identifying the contribution of a thought, argument, or piece of discussed evidence. Supervisors aim to engage the student through their modes and language of feedback by using "track changes", "comment" or verbal comments, encouraging a thinking process which answers the questions "Why?", "What has happened here?", "How did it happen?", "Why does it matter?", "What does it contribute of importance?"

Dialogue between supervisor and student is one of a set of dia-logues which encourage, build and sustain ways of identifying a posi-tion and the evidence to back it up, articulating a problem, problema-tising a given or a confused set of information and ideas. Through the dialogue and articulation, supervisor and student together can work out some views, engage evidence and theory, and enhance the level of thinking. Such dialogues can be enhanced and developed by similar dialogues between communities of colleagues, some of whom could act as critical friends. Many such communities last beyond the Doctor-ate itself and help sustain research communities (Wisker *et al* 2004, Od-Cohen & Shacham 2009).

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2   Cf Wisker 2005, Pearson & Brew 2002, Pearson & Kayrooz 2004, Pearson 2005.

7. Conclusion

The parallel research projects have identified critical points when students make conceptual "learning leaps", experience conceptual paradigm shifts regarding their research and themselves, and demonstrate "new ways of seeing". These learning developments contribute towards the achievement of a "good enough" doctorate. However, students often struggle to articulate this experience and may benefit from developing academic language and meta-learning at this level.

This research has so far indicated a number of critical moments in the development of the "good enough doctorate" for instance, one which is conceptual, critical and sufficiently creative to make a well-written, coherent, sound contribution to knowledge, and what might "nudge" it into being. Some essential stages where conceptual threshold crossing can be nudged, or appears to have been nudged, are found in the work of some students through their reading, dialogues, feedback, discussion and engagement with the literature and the resources. These include: ensuring a delimited (doable) and sufficiently conceptual question; focus on conceptual framework, methodology and methods; close reading and focus on dialoguing with experts in the literature review/theoretical perspectives chapter; oral prompting of conceptual, critical work individually in supervisions and in groups; prompt feedback, encouraging conceptual and critical work; encouragement of careful data analysis, developing themes, engaging with theories; encouraging early writing and much editing – sharing and reflection; a focus on using the language of "doctorateness", for instance "conceptual framework", and the ideas, the research and theories of learning, for example metacognition, and setting up and enabling communities to support, share, and help develop each other in order to maintain momentum through and beyond the doctorate.

Practical strategies which may enable work at a more conceptual level have been reported by doctoral students, including questioning preparation to justify their work, along with writing and presentation opportunities. Such strategies potentially benefit supervisors as they may indicate ways in which doctoral students can best be encouraged and enabled to make "learning leaps" and cross

conceptual thresholds, how supervisors recognise when this is about to occur or has occurred, and how they might 'nudge' such developmental events by offering opportunities for visualisation, dialogue, presentation and writing.

Emerging results indicate further issues for the parallel projects. More work needs to be carried out into issues of identity and ontology, and ways of encouraging postgraduates to think and behave as researchers. Epistemology is also an issue which requires more attention. The range of engagements and activities of "nudging" must still be discovered and clarified as these can aid the enabling, encouraging, and empowering of students to work conceptually, critically, so that their work is evaluative, problematising, creative – not merely busy. It is intended to continue to explore perceptions of threshold crossing and what might support and enable it. This will be done by engaging the community of doctoral students, postdoctorates, supervisors, examiners and employers in a discussion of what makes a good enough Doctorate and what specific stages on the learning journey can help develop the conceptual, critical and sufficiently creative qualities in students' work as researchers, producing the doctorate itself as a contribution to knowledge, and in their personal development in ontological, epistemological and skills areas.

A number of issues and questions remain. So far this is a very rich experience; interesting findings are emerging as the research progresses and the results should inform the development of resources and prove useful to the international research community.

Bibliography

BOURKE S, J HATTIE & L ANDERSON 2004. Predicting examiner recommendations on PhD theses. *International Journal of Educational Research* 27(4): 178-94.

C DENHOLM & T EVANS (eds) 2006. *Doctorates downunder: keys to successful doctoral study in Australia and New Zealand*. Melbourne: ACER.

KILEY M & G MULLINS 2006. Opening the black box: how examiners assess your thesis. Denholm & Evans (eds) 2006: 200-7.

KILEY M & G MULLINS (eds) 2008. *Quality in postgraduate research: research education in the new global environment – part 2: conference proceedings*. Canberra: CEDAM. The Australian National University.

KILEY M & G WISKER 2008. 'Now you see it, now you don't': identifying and supporting the achievement of doctoral work which embraces threshold concepts and crosses conceptual thresholds. Unpubl presentation at Threshold Concepts: From Theory to Practice conference 2008, Queen's University, Kingston, Ontario, Canada.

[*s a*]. Threshold concepts in research education and evidence of threshold crossing. *Higher Education Research and Development* 28(4): 431-44.

LAND R, J H F MEYER & J SMITH 2008. *Threshold concepts within the disciplines*. Rotterdam & Taipei: Sense Publishers.

LAVE J & E WENGER 1998. *Communities of practice: learning, meaning, and identity*. Cambridge: Cambridge University Press.

MEYER J H F & R LAND (eds) 2006. *Overcoming barriers to students understanding: Threshold concepts and troublesome knowledge*. Abingdon: Routledge.

MEZIROW J 1978. Perspective transformation. *Adult Education (USA)* 28(2): 100-10.

MULLINS G & M KILEY 2002. 'It's a doctorate, not a Nobel prize': how experienced examiners assess research theses. *Studies in Higher Education* 27(4): 369-86.

OD-COHEN Y & M SHACHAM 2009. Rethinking doctorate learning incorporating communities of practice. *Innovations in Education and Teaching International* 46(3): 279-92.

Pearson M
2005. Framing research on doctoral education in Australia in a global context. *Higher Education and Research and Development* 24(2): 119-34.

Pearson M & A Brew
2002. Research training and supervision development. *Studies in Higher Education* 27(2): 135-50.

Pearson M & C Kayrooz
2004. Enabling critical reflection on research supervisory practice. *International Journal of Academic Development* 9(1): 99-116.

Trafford V N & S Leshem
2008. *Stepping stones to achieving your doctorate: focusing on your viva from the start*. Maidenhead: Open University Press.

Winter R, M Griffiths & K Green
2000. The 'academic' qualities of practice: what are the criteria for a practice-based PhD? *Studies in Higher Education* 25(1): 25-37.

Wisker G
2008. *The postgraduate research handbook: succeed with your MA, MPhil, EdD and PhD*. 2nd ed. Palgrave Study Guides. Basingstoke: Palgrave.

2005. *The good supervisor: supervising postgraduate and undergraduate research for doctoral theses and dissertations*. Basingstoke: Palgrave Macmillan.

Wisker G, C Morris, M Warnes, J Lilly, G Robinson, V Trafford & M Cheng
2009. Doctoral learning journeys: supporting and enhancing doctoral students' research and related skills development through research evidence-based practices. *Assessment, Learning & Teaching Journal* 5: 19-22.

Wisker G, G Robinson & M Kiley
2008. Crossing liminal spaces: encouraging postgraduate students to cross conceptual thresholds and achieve threshold concepts in their research. Kiley & Mullins (eds) 2008. Unpubl. <http://www.qpr.edu.au>

Wisker G, G Robinson, V Trafford, J Lilly & M Warnes
2004. Achieving a doctorate: metalearning and research development programmes supporting success for international distance students. *Innovations in Education and Teaching International* 41(4): 473-89.