

LEARNING THE LANGUAGE OF THE DOCTORATE: DOCTORATENESS AS A THRESHOLD CONCEPT IN DOCTORAL LITERACY

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In academia, the definition of literacy has evolved from a focus on reading and writing to encompass more inclusive and expansive perspectives. Such perspectives have come from researchers involved in exploring literacy among diverse populations and across traditional divides such as cultural, political and socioeconomic boundaries. Changing definitions of literacy include usage in expressions such as 'computer literacy', 'civic literacy', 'health literacy', 'cultural literacy' and others. Recently, new directions in literacy research were foregrounded by critical questions that seek to discover how literacy functions in doctoral studies and within research communities. For instance, what does it mean to be 'literate' as a doctoral member of a research culture, within a field of research, within the academic profession and so on? In addition, doctoral candidates often grapple with what may be termed 'threshold concepts'. Such concepts include the meaning of the doctorate as a qualification, its aims, its narrative and the level of literacy required to succeed with a doctorate. Against this background the article explores firstly how the concept of being literate has been broadened to include literacy for doctoral learning; secondly, it explains why doctorateness remains a threshold concept for many doctoral candidates and supervisors, and thirdly it provides some evidence from at least five years of working with doctoral education and doctoral supervisor development workshops to support an argument for doctoral literacy. Finally, the article provides some implications which emerged from a better understanding of the language and requirements of doctorateness as an essential literacy requirement for doctoral candidates and their supervisors.

INTRODUCTION

In its broadest sense literacy refers to the quality or state of being literate - a concept that derives from Middle English and Latin terms meaning 'marked with letters' and 'letters or literature' (Merriam-Webster's Collegiate Dictionary). However, literacy not only involves competency in reading and writing, but goes beyond such competencies to include the critical and effective use of literacy in peoples' lives and the use of language, thinking and understanding for different purposes. This definition involves critical questions about what one is reading, writing, talking and thinking about, thus expanding the term to encompass different notions of literacy.

The Literacy Development Council of Newfoundland and Labrador (1998:2) defines literacy as '... an individual's ability to read, write, speak in English, compute and solve problems at levels of proficiency necessary to function on the job, in the family of the individual and in society'. This broadened view of literacy amends more traditional concepts of literacy and as information and technology become increasingly important, it points at the knowledge, skills and attitudes citizens need to function successfully in modern societies which increasingly ask for contextualized forms of literacy.

From a constructivist perspective, definitions of literacy include learning processes through which literacy is acquired. This represents a profound shift from a text-driven definition of

literacy to a view of literacy as active transformation of texts and even of those who create texts (Gee, 2001; Fisher, Frey and Ross, 2009; Paris, 2009; Hall, 2012). Constructivism proposes that meaning is created through interactions between the creators of text, readers and text itself. Some authors take the notion of interaction with text a step further, contrasting literacy as the act of reading and writing to literacy as ways of thinking (Kutner, Greenberg, Jin, Boyle, Hsu, and Dunleavy, 2007; Coffey and Street, 2008). Literacy can thus be viewed in broader and educationally more productive ways, namely the ability to think and reason like a literate person within a particular context or society.

Linked to this broadened view of literacy, threshold concepts and the related notion of troublesome knowledge have become the focus of more recent developments in research and thinking about learning in higher education (Meyer and Land, 2005; Meyer, Land and Davies, 2006; Entwistle, 2006). Such views hold that all ideas do not emerge suddenly in education and that 'troublesome knowledge' describes what is often perceived to be things beyond understanding (Land, Cousin, Meyer and Davies, 2005: 196). Research on student learning (Meyer and Land, 2005; Perkins, 2006) suggests that at least three conceptions of knowing could thus be found among university students:

- A possessive conception, whereby knowing is seen as knowledge to be retained and applied consistently in routine situations.
- A performative conception, where knowing is considered as a capacity to talk and think about something in a personalised way and to use in a variety of situations.
- A proactive conception, where knowing is seen as applying knowledge actively, creatively and imaginatively in a variety of ways, forming the basis for further inquiry.

Important to recognise is that proactive knowing is not merely a short step beyond performative knowing and that for many students such knowing represents a major leap. To make this leap, they need to have particular dispositions towards learning - for instance, to be open-minded, curious, concerned with evidence, to be alert, engaged and willing to venture beyond the comfortable and the known (Perkins, 2006).

In doctoral studies, the highest level of qualifications universities offer, authors have pointed to a similar problem: doctoral candidates, and sometimes even their supervisors, cannot bridge the divide between performative and proactive conceptions of knowing. Trafford and Leshem (2008) and Wellington (2012) have thus inquired into key questions that underpin the idea of 'doctorateness' as well as the regulations, requirements and actual practices which translate this concept into reality for doctoral candidates. They point at the multiple purposes of the doctorate to different constituencies and stress the possible impact of doctoral studies, doctoral assessment processes as well as the distinctive voices of supervisors, examiners and candidates. Apparently, the single most necessary, though not on its own sufficient, quality that makes up doctorateness is the notion of making a knowledge contribution - without the complication of adjectives such as 'original' or 'publishable' (Wellington, 2012:13).

Provided that the doctoral dissertation (and its live version, the oral examination) have a thesis in the sense of a position and an argument, key criteria for the evaluating doctorateness may include questions such as: Has the candidate made a contribution to the field of study? Has (s)he built on previous arguments and theses (from previous literature) and pushed it forward a little or added to it? If the candidate does make a contribution to knowledge, will this contribution potentially make an impact – or bring about a change – in thinking and to theory, policy or practice? To answer such questions, clear evidence is needed – something which doctoral candidates are not always clear on how to provide or supervisors on how to facilitate. Candidates may even be uninformed about doctoral requirements or unable to

achieve them until the very end of their studies. A perceived lack of doctoral requirements also includes the inability to synergise the different components of the doctorate (Trafford and Leshem, 2008) – a key issue which will be touched upon later. But first one may look more explicitly at literacy as an inclusive concept.

LITERACY AS AN INCLUSIVE CONCEPT

It is widely accepted that the definition of literacy has evolved from an exclusive focus on reading and writing to encompass a more inclusive and expansive perspective (Mayo 1994; Lewison, Flint and Van Sluys, 2002; Morrell, 2002; 2008). Some of that work has come from researchers involved in exploring literacy among diverse populations and across cultural, political and socioeconomic boundaries. For instance, Dubin and Kuhlman (1992:vi) have pointed to the changing definition of literacy as follows: ‘...we acknowledge that the word literacy itself has come to mean competence, knowledge and skills. Take, for example, common expressions such as *computer literacy*, *civic literacy*, *health literacy*, and a score of other usages in which literacy stand for know-how and awareness of the first word in the expression’.

Also, Mayo (1994) and later Lewison, Flint and Van Sluys (2002) and Morrell (2002; 2008) have argued that Paolo Freire's pedagogical stance on literacy stands in marked contrast to a process of literacy by prescription. In Freire's view, literacy processes consolidate sharply defined power relations synonymous with the concept of ‘critical literacy’ which is to be distinguished from functional or cultural literacy - the former referring to the technical process of acquiring basic reading skills necessary to follow instructions, read signs, fill in forms and so on, and the latter referring to the means of gaining access to a 'standard' cultural and linguistic baggage (McLaren, 1994). Critical literacy thus refers to emancipatory processes whereby one not only reads the 'word' but also the 'world' (Freire and Macedo, 1987) and whereby a person becomes empowered to be able to unveil and decode the ideological dimensions of texts, institutions, social practices and cultural forms such as television, film and advanced studies in order to reveal their selective interests (McLaren, 1994; Morrell, 2002). In the words of Lankshear and McLaren, ‘... critical literacy thrives in contexts where education strives to foster’ and as a means whereby humans are enabled to ‘perceive more clearly the relationship between what is going on in the world and what is happening to and with ourselves’ (Lankshear and McLaren, 1993: 5).

It is thus the way of thinking, not the mere acts of reading or writing that is most important in the development of literacy – particularly in the sphere of doctoral literacy. Literacy thinking manifests itself in different ways in oral and written language in different communities of practice (Wenger, 1998; 2007) and educators need to understand such ways of thinking if they are to build bridges and facilitate transitions among ways of thinking. Part of this understanding is the role of threshold concepts and its importance in doctoral literacy and progression. This will be briefly discussed next.

Threshold concepts as ‘stuckness’

University students at all levels frequently encounter ideas and knowledge that is difficult to understand. Alternatively, if they do understand such concepts and their implications, they find themselves in more favourable learning spaces. Without positive dispositions and understanding, crucial ideas and knowledge become ‘troublesome’ and effectively block further intellectual development. Troublesome knowledge in itself thus becomes threshold concepts for students and teachers alike (Meyer, Land & Davies, 2006). According to Meyer and Land (2005; 2006) the power of the idea of a threshold concept is to provide a ‘hook’ to connect knowledge structures to actual and potential situations and applications. Teaching to

help students through such thresholds in their studies shift their ability to identify, refine, frame and solve new problems (Meyer & Land, 2005; Meyer & Land, 2006).

Another view that offers complementary ways of approaching threshold concepts is to acknowledge troubled knowledge through the notion of ‘stuckness’, or an acknowledgement of not making progress with understanding key concepts (Bradbeer 2006; Cousin 2006). The idea of a threshold concept implies a linear understanding of learning and that one approaches the threshold but, until the concept is grasped, no progress is made and, once grasped, there is little further intellectual development. Instead, a ‘stuckness’ view offers the notion of exploring new learning spaces, allowing for learning frequently being cyclical, done in a variety of ways (learning styles) and in a variety of settings, including academic and everyday life-worlds. It might thus be more profitable to think of overcoming ‘stuckness’ – a type of learning which is provisional but also emancipatory, reflexive and flexible to today’s age and an increasingly super-complex world (Barnett, 2000; Savin-Baden & Wilkie, 2006; Savin-Baden, 2007).

In whatever way one views ‘threshold concepts’, ‘troublesome knowledge or ‘stuckness’, one element that stands out in postgraduate studies and in doctoral education in particular is how doctorateness is perceived and understood as a concept and a process. For doctoral candidates and novice supervisors alike it has proved challenging to come to grips with what the doctorate stands for, how it should be approached and finally what it requires to undertake and to complete a doctorate (McAlpine & Asghar, 2010; Martinsuo & Turkulainen, 2011).

Throughout history, there has always been something dynamic and evolving about the doctorate and its nature - from the early medieval idea of a ‘licence to teach’ through to its more Humboldtian conception as a research degree in Germany, and now to the current era of auditing, accountability, quality assurance and regulation (Teichler & Yagci 2009; Samuel & Vithal 2011). In its different forms across the world the concept of doctorateness varies across space, time and different disciplines; so currently, the doctorate is characterised by much diversity. We have, for instance, the ‘new variant PhD’ which features alongside the wide range of professional and practice based doctorates that are internationally available. Variability across countries and disciplines seems a key factor when we seek to conceptualise the doctorate (Walker, Golde, Jones, Bueschel & Hutchings, 2008; Martinsuo & Turkulainen, 2011) and thus this concept remains a threshold for many.

Doctorateness as a threshold concept

Amidst its variety, there are generic features of doctorateness that transcend disciplines, institutions and doctoral procedures which examiners often refer to as the ‘gold standard’ of the doctorate (Trafford & Leshem 2008: 34–35). When standards at such a level are met, they constitute doctorateness, which is what is expected to be displayed in doctoral theses (Halse & Malfroy, 2010; McAlpine & Asghar, 2010). To achieve this, doctoral candidates are expected to progress beyond merely reporting facts, since the doctorate represents a level of knowledge, skills and attitudes that involves intellectualising, conceptualising and contributing to existing knowledge. Candidates and supervisors thus have to understand the scholarly nature of the doctoral degree by appreciating the connection between doing research, writing a doctoral thesis and, at some institutions, defending a thesis in a doctoral viva. When these criteria for a doctoral degree are achieved synergistically then doctorateness could be demonstrated (Trafford & Leshem 2008; 2011)

Since doctoral career options are to be found in increasingly fluid and tight job markets, many universities are concerned that research education might be viewed narrowly as research training. This implies research results being produced at the expense of understanding

doctorateness as a concept and thus limiting its educational and scholarly functions (Malfroy & Yates, 2003; Eley & Murray, 2009). The characteristics of an educated - rather than a trained - researcher have been identified as:

- an emerging expert in a particular area or field of knowledge;
- a resourceful person, able to search out what is needed to be found out and to use;
- a person mindful of the ‘bigger picture’ and belonging to scholarly networks of expertise so as to know what is important, current and relevant; and
- someone who is adaptable and prepared to change or link research areas and/or techniques to particular contexts and circumstances (Pearson & Brew, 2002; Cumming, 2010).

It has also been pointed out that studying for a doctorate extends over many years and involves prolonged high-quality research (Trafford & Leshem, 2008; 2011). Candidates write thousands of words on their research and these are bound into a thesis or published via articles which they then have to defend before two or more eminent examiners. The doctorate could thus be described as being different from other academic degrees due to the length of study, level of scholarship, size and level of the finished output and method of examination. These are fairly obvious features. However, what makes the doctorate special and what level of understanding does it imply? Is there a common factor that is present in all doctorates? Is there a special ‘something’ about these degrees that can be recognised by those who examine them or those who already possess a doctorate? The answer to these questions is that the distinctive difference between the doctorate and other degrees lies in the concept and nature of doctorateness itself.

There is a recognisable ‘something’ that differentiates the doctorate from other degrees. Trafford and Leshem (2011:34) have concluded that doctorateness combines the issues of understanding research, research processes and research techniques into a single notion. As a result, the notion of doctorateness is pluralist as it combines both ‘doing and achieving’ a doctorate which contain critical elements of doctoral research that interest examiners. Examiners’ questions may address these elements directly or indirectly, but all are usually explored at some time during doctoral vivas or oral examinations. Figure 1 shows the 12 most frequently occurring issues of interest to examiners as indicated by their questions (see Trafford & Leshem, 2011).

Contribution to knowledge	Stated gap in knowledge →	Explicit research questions	Conceptual framework
Conceptual conclusions	WHEN SYNERGY EXISTS BETWEEN THE COMPONENTS THEN DOCTORATENESS IS DEMONSTRATED		Explicit research design
Research questions answered			Appropriate methodology
Cogent argument throughout	Full engagement with theory	Clear/precise presentation	‘Correct’ data collection

Figure 1: Components of doctorateness (Source: Trafford & Leshem, 2011: 38)

These components are portrayed as being connected when viewed in a clockwise manner. Each box represents an essential element of research activity that has to be accounted for and explained in a doctoral thesis. While these elements are recognised stages and activities in most research, they are inescapable prerequisites at the doctoral level.

When all 12 elements are appropriately displayed in a thesis, two consequences will follow. First, it will acknowledge that synergy has been achieved between the account of the research undertaken and the text that has been written. Second, it will recognise how presentation of argument and structure makes the thesis coherent as a piece of scholarly research. If examiners can draw these two conclusions then they would also conclude that a thesis demonstrates doctorateness (Trafford & Leshem, 2008; 2011).

The interconnectedness between the 12 research-related items implies that each one depends on all the other items in order to produce high-quality research. This shows that doctoral candidates have to grasp and handle a network of issues – all of which have equivalent importance. To be literate in terms of doctorateness, as is the case with other high-quality research projects, thus requires more than a simple summation of the components that comprise the research process. If there is dependency between these separate components, then it is the nature of their inter-dependencies that will determine their collective and overall effectiveness.

To university professors responsible for quality research education, doctoral supervision becomes a matter of creating research environments that can assist candidates in understanding the meaning and requirements of doctoral studies. Here issues arise as to whether there is sufficient access to knowledge resources (including trans-institutional and trans-national expertise) essential to conduct quality research and achieve advanced levels of conceptual literacy on the doctorate (Austin, 2009; McAlpine & Asghar, 2010; Trafford & Leshem, 2008). Providing such capacities can go a long way in assisting doctoral students towards understanding and achieving doctorateness.

To illustrate the value of actively promoting doctoral literacy within the concept of doctorateness, an exercise that has been on-going for a number of years between the Centre for Higher and Adult Education at Stellenbosch University and international expertise on the doctorate serves as an example. The next section will briefly report on this project.

Some evidence of how doctoral candidates (and their supervisors) improve doctoral literacy levels

One way of capacitating doctoral candidates and supervisors is to provide professional development opportunities which combine research findings and explicit developmental strategies on the concept of doctorateness and its implications. This includes

- challenges related to increasing inter-nationalisation of doctoral programmes which may involve inter- and multi-disciplinarity as well as multi-national approaches to contemporary global issues;
- an increased shift towards a variance in models of supervision and moving away from traditional master-apprenticeship models of supervision;
- appeals to supervisors and candidates for greater self-awareness, building reflective capacity and self-improvement;
- challenging supervisors and candidates to explicate their assumptions and mental constructs regarding crucial concepts such as 'doctorateness', even within the same discipline, and

- an awareness of and sensitivity towards developing and maintaining high standards of quality for doctoral education, sometimes with the assistance of foreign expertise (Bitzer, Trafford & Leshem 2013).

Such a process of increasing doctoral literacy levels for candidates and supervisors emerged in an explorative doctorateness workshop project through four distinctive phases. Phase 1 focused on 'awareness' in which needs of candidates and supervisors became clearer whilst concurrently, the need for trans-national co-operation embedded in local contexts, were apparent. Phase 2 entailed the development of learning opportunities and activities, while Phase 3 involved the pilot phase of the project. Phase 4 addressed its implementation, evaluation and refinement of the project.

Phase 1: Awareness of literacy needs

Since 2002, colleagues from the United Kingdom and Israel started publishing extensively on the concept of doctorateness and doctoral education (Trafford & Leshem, 2002a; 2002b; 2008; 2011). Their work aimed at raising doctoral literacy levels among doctoral candidates and supervisors and emerged from six years of conducting doctoral literacy development within at least thirty disciplines and in fifteen countries. In addition, these colleagues participated in over a hundred doctoral vivas or oral examinations in different universities and different capacities.

Noting the questions that examiners asked doctoral candidates in doctoral vivas highlighted patterns across disciplines and, thereby, demystified the summative examination process as well as the doctoral standards sought by examiners and supervisors (Trafford & Leshem, 2002a, 2002b; 2008; 2011). These findings were supplemented by analysing two sources of documentary evidence. Firstly, the texts of draft and completed doctoral theses displayed how candidates assembled and presented their arguments. Secondly, examiners' interim and final reports illustrated how they approached, undertook and reached conclusions about the scholarship displayed in theses. This evidence generated practical insights that could be acted on by candidates and supervisors.

In South Africa, at the same time, numerous developmental workshop opportunities for supervisors across disciplines and universities were facilitated (Centre for Higher and Adult Education, 2008). These workshops were aimed at inexperienced supervisors who had completed their doctoral degrees and were co-supervising doctoral candidates. Prior to each workshop a needs analysis survey determined participants' developmental needs in order to address their most prominent doctoral literacy needs. Although participant satisfaction was continuously above 80%, these workshops were not benchmarked against doctoral education criteria external to South African universities. However, new international developments and publications - in particular Trafford and Leshem's extensive work on 'doctorateness'- provided for such an opportunity. In a joint effort, considering both local and foreign best practices and doctoral literacy criteria, a series of developmental opportunity workshops was designed and offered to reflect best practices towards 'doctorateness'.

Phase 2: Developing the format and activities (2009)

Developmental opportunities offered across the UK and Europe by the two non-South African partners plus national workshops offered by the Centre for Higher and Adult Education indeed provided a sound base for joint developmental opportunities for doctoral candidates

and supervisors in South Africa. During 2009, the three partners discussed mutual doctoral issues that included

- contextual issues unique to South African universities such as supervisory capacity, diversity of candidates, lack of research experience and variance in doctoral requirements;
- generic international requirements for becoming doctorate across disciplines;
- intellectual challenges involving ‘doctorateness’, and
- levels of doctoral thinking and achievement as explicated by doctoral theses and examinations.

Two-day workshop formats on doctoral literacy, appropriate for both supervisors and doctoral candidates, were decided upon. Participation was therefore inclusive of both ‘providers’ of supervision (supervisors) and ‘receivers’ of supervision (doctoral candidates). The rationale was that both could learn from each other’s expectations and experiences within a professional learning dynamic. The latter argument also prevailed in a decision to include more experienced as well as less experienced supervisors as participants.

Workshop themes or topics were closely related to both local and foreign requirements and which would potentially address the notion of ‘doctorateness’ rather than focusing on the mechanics of doctoral supervision or the complexities of research methodology. This approach emphasised in particular how candidates could be assisted in raising their levels of thinking about their research topics, their research processes and their potential contribution(s) to knowledge. Such an emphasis also aligned closely with what examiners expect to see in doctoral-worthy work and then, where applicable, could examine during the viva. Thus, the workshops aimed at promoting doctoral education knowledge and skills for candidates and supervisors across disciplines and layers of responsibility.

Phase 3: Piloting doctoral learning (2010)

The first series of pilot workshop opportunities took place in Stellenbosch, South Africa in April 2010. Lasting two days each, the events were repeated three times with 20 to 25 doctoral candidates and supervisors per group, representing seven universities and fifteen disciplines or areas of study. After these workshops, participants provided feedback on features they could potentially and productively incorporate into their studies or supervision practices. They also indicated those elements that were considered to be less useful.

Participant observations such as the following were frequent:

‘Ideas from other supervisors, particularly those from overseas and other universities were very useful. I don’t mean that my own supervisor is not good, but these ideas are really new and exciting’ (Candidate)

*‘For me the criteria for doctorateness were made more visible. They helped me to see explicitly what I should be doing and **it will be easier for me to communicate** about the doctoral education process with others – particularly my students’ (Novice supervisor)*

*‘The doctoral education guidelines provided to us made sense. I am going to amend those I have used up until now and apply them in my supervision. The **difference** between narrow research training and a broader doctoral education also seems*

important. I have learnt a lot - both from the students that were present and the two colleagues from abroad' (More experienced supervisor).

No topic or theme in the pilot workshops was deemed unnecessary and few activities were reported as being of little or no use; also, workshop processes and dynamics were judged as positive experiences that contribute to doctoral literacy and an understanding of doctorateness. However, responses showed that contextual variance among international doctoral education systems, and even among local doctoral granting institutions, could be better accommodated within activities and discussions. For instance, participants from the University of South Africa (UNISA) indicated particular concerns regarding supervision within the context of an open and distance learning (ODL) institution. Overall, however, participants judged the pilot workshops to have achieved their aim of lifting the level of thinking about doctorateness, doctoral studies and supervision. The programme was thus slightly adapted for implementation in 2011 until 2014.

Phase 4: Implementation, evaluation and refinement (2011-2014)

Four series of three two-day workshops attended by 227 supervisors and doctoral candidates from sixteen South African universities followed between September 2011 and February 2014. It was argued that during the implementation phase, workshop activities could include how developmental opportunities and activities may be cascaded in institutions. Cascading is a process whereby people who have developed their knowledge and skills assist colleagues in the same environment or institution to acquire similar levels of knowledge and skills.

Although these doctoral literacy workshops had no official standing in any university, open feedback from participants pointed to the recognition of their potential value. Table 1 provides a number of typical samples from categories of participant responses as rendered from doctoral candidates and supervisors. A total of 166 (from 227) participants responded to an invitation to comment on how they experienced the workshops as well as their potential value for doctoral education.

Table 1: Sample comments rendered in the project implementation phase (2011 – 2014) (N = 227; n = 166)

Category	Participant (S = supervisor; C = candidate)
Opening up of opportunities	<i>'For me this workshop pointed to the many opportunities available in the supervisory relationship. It suggested a generic benchmark for doctoral studies and supervision which I will consider to use' (S45). 'This workshop came at the right time for my PhD studies and covered aspects very relevant to the question of doctorateness. I must admit, I did not think about my studies in this way before' (C22).</i>
Thinking like a researcher	<i>'This workshop was an eye-opener. It has helped me to see my doctoral studies from a different angle. It has also helped me to be sensitive towards raising my level of thinking (as a researcher) and adopting a more critical analytic attitude' (C36). 'In future my supervision activities will include some of the suggested tools to assist my students to think like researchers' (S27).</i>
Providing tools and models	<i>'Three things stood out for me: Firstly, the idea of doctorateness, which represents a holistic approach to research and linking the components by looking at their relationships. Secondly, guidelines on concluding a thesis have highlighted that there is no need to repeat what has been said already. Thirdly, the designing architecture of a doctorate should be a priority for</i>

	<p><i>discussion between candidates and supervisors' (S86).</i></p> <p><i>'Seeing the various elements of doctorateness made me aware of how narrow my thinking was to date as to starting with my doctoral degree. I am going to alert my supervisor to these different options. The entire event was valuable to developing my self-awareness regarding the doctoral journey awaiting me over the next few years' (C29).</i></p>
Structuring	<p><i>'A more structured way of supervising has been advocated and I will definitely try that. For me the workshop covered most of the important aspects of supervision and advising doctoral candidates. Although the workshop did not attend to very specific issues in my field of expertise, I consider myself fortunate to have become literate on the generic international expectations and standards for the doctorate' (S65).</i></p> <p><i>'Beginning with the end in mind opened up new opportunities for my studies and my thesis - to structure it differently. One other thing that I would have liked to see in the workshop is ideas on how research results (my thesis) may eventually be disseminated for wider use' (C72).</i></p>

Facilitator observations and reported workshop experiences such as those indicated in Table 1 were encouraging. On the one hand, supervisors typically seem to have found trans-national involvement in developmental opportunities valuable in a number of ways. This includes opening up new understandings of doctorateness for approaching their supervision (S45), assisting their doctoral candidates in lifting the level of thinking about doctoral findings (S27), applying a more comprehensive design architecture for doctoral projects and using doctorateness as a key concept for the research process and thesis (S86), as well as appreciation for being exposed to generic doctoral expectations and international standards (S65). Doctoral candidates, on the other hand, found novel ways to think about their studies (C22), to take a more critical-analytical stance towards their studies (C36), to broaden their research options for the doctorate and increase their self-awareness (C29), and to approach their doctoral studies with the examined product (the end of the doctorate) in mind (C72).

What became clear from the evidence was that a better understanding of doctorateness as embodied by wider, trans-national scholarly requirements and examination criteria emerged for both candidates and supervisors. Supervisor roles and the expectations of candidates were understood to reach further than merely undertaking or advising on any one particular study. Furthermore, improved understandings of doctorateness included levels of thinking that are in need of explication and are supervised in ways that promote candidates' academic success, as well as being assimilated into research and scholarly communities. Such findings open up new opportunities for doctoral literacy, particularly for doctoral candidates who aim as graduates to undertake post-doctoral studies or pursue research careers outside of universities.

IMPLICATIONS

Theoretical explorations of doctoral literacy and of doctorateness as a threshold concept, together with evidence generated from trans-national co-operation on promoting doctoral literacy, point to a number of notable implications.

Firstly, if doctoral literacy is broadened to include (a) generic trans-national quality criteria, (b) new perspectives on doctorateness for candidates when conducting their studies, and (c) candidates' sharing their experiences of being supervised towards doctorateness, the quality of doctoral education and doctoral supervision in particular may be considerably enhanced. It seems clear that supervision practices which are more educative towards doctoral literacy and

sensitive towards trans-national supervision pedagogies are rewarding to both candidates and supervisors. Doctoral literacy is thus not something which can be learnt through own or local experience alone and requires joint developmental interventions - especially for candidates guided by younger, inexperienced doctoral supervisors. Thus, a trans-national perspective can strengthen the potential for doctoral literacy of both candidates and supervisors and can assist in overcoming doctorateness as threshold concept.

Secondly, research on doctoral literacy clearly indicates that supervisors' and candidates' conceptions of important threshold concepts (i.e. concepts crucial in the understanding of related concepts and practices) such as doctorateness, scholarship and doctoral education influence supervisory practices. Learning opportunities that emphasise generic doctoral outcomes, what it means to be awarded a doctorate and how to adopt a scholarly approach in research seem prerequisites for effective supervision. This has been well illustrated by the feedback from supervisors and candidates exposed to one another's views in this explorative project. Innovative supervision strategies aimed at doctoral literacy may thus assist candidates in their transition from initial dependence as novice researchers to becoming independent researchers.

Thirdly, in rapidly changing higher education and knowledge environments, more research and development work is needed into what doctoral literacy strategies for candidates and supervisors require. For instance, literature and feedback from participants in the Stellenbosch project confirmed that supervising international, part-time and distance doctoral candidates pose difficult literacy challenges to supervisors. This includes regular communication and information on what it takes to obtain a doctorate. Universities and research units that provide research-based guidelines for doctoral literacy thus need to be better equipped to actively support doctoral candidates and supervisors in their multiple roles - which includes doctoral literacy - and is of particular concern in a diverse and challenging South African doctoral education dispensation with increasing international participation - particularly from other African countries.

Lastly, more debate and clarity are needed as to expectations for doctorateness at South African universities. Clearer notions of, for instance, the level at which doctoral studies needs to be completed, standards for doctoral examination and better understandings of what doctoral work entails are needed. Clarity on doctoral literacy features that explicate issues such as originality, scholarship, academic rigour, research design and scientific presentation is essential. Learning the language of the doctorate by unravelling threshold concepts such as doctorateness, employing trans-national approaches to doctoral education and exploring generic examination criteria could significantly improve doctoral literacy - not only for candidates, but also for supervisors - and may also address current discrepancies between levels of doctoral qualifications and outcomes at South African universities.

In conclusion: What one could observe was that the knowledge and skills needs of supervisors and candidates about doctorateness clearly vary in scope, sequence and intensity. But an important outcome from developmental and learning initiatives such as the one reported in this paper should be supervisors whose skills are grounded in an awareness of broader and inclusive doctoral education issues, an understanding of doctorateness as a potential threshold concept for candidates and observing generic standards for the doctorate associated with the induction of research candidates. An outcome for doctoral candidates would be to understand that doctorateness represents a research vision or strategy that channels their actions as they plan and undertake their research. Candidates and supervisors alike also need to understand the underlying purposes of the doctorate which guide reading,

writing and thinking as these research actions are transformed into text. Promoting doctoral learning and literacy may thus enhance capacity in doctoral education to increasingly allow candidates to think like researchers as they become more independent from supervisors.

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