

12

THE ROLE OF DOCTORAL EDUCATION IN EARLY CAREER ACADEMIC DEVELOPMENT

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POINT OF DEPARTURE

The social and economic significance of the doctorate is recognised across the world, as doctoral candidates are considered to be key contributors to the knowledge society by contributing to socio-economic development through innovation (Barnacle 2005; Taylor 2012). Doctoral students – regardless of their discipline – are expected to take part actively in the knowledge creation process at universities, and this is especially important for those who will remain in academia and continue to contribute in this way.¹ But knowledge creation is a complex process. Knowledge creation at the doctoral level and beyond requires a comprehensive understanding of relevant knowledge, sound judgment, and the ability to advise with insight. Doctoral learning also includes aspects such as abstract reasoning, the ability to conceptualise, and problem solving. Thus, through the original contribution candidates are expected to create during the doctorate, they are supposed to become experts in their chosen field of study. This process has been described by Evans (2014) as disciplinary acculturation. Various authors (for example Danby & Lee 2012; Lin & Cranton 2005; Manathunga & Goozée 2007) point out that this process of becoming an expert is by no means easy or straightforward. Rather, developing as a scholar is a lifelong process in which moving from a novice to an expert is an essential rite of passage into academic practice (Dreyfus & Dreyfus 1986). Benmore (2014) states that for those pursuing academic careers, it involves coming to know, but also coming to be an academic. Such a process of becoming doctorate implies movement over time, progression, and transformation (Barnacle, 2005).

PART THREE • CHANGING EXPECTATIONS OF POSTGRADUATE STUDENTS AND SUPERVISORS

The work of Cetina (1982, cited in Becher & Trowler 2001:76) on the scientist as an economic reasoner is valuable in taking this argument further. Cetina argues that academics are preoccupied with value – where the value of the product or output (in this case the doctorate) is perceived to be closely related to the value of the academic him/herself. Benmore (2014) refers to roles in academe as being the position of the individual in the system and the requirements to enact that role (role identity). People occupy various roles in a system and there are role transitions in the movement between various domains in the system. Roles and identities develop in the transition from novice to expert in the academic system. Transitions lead us to consider how scholars develop from novices into experts, and – in our case – to consider what role doctoral education may play in the process.²

As researchers we have all taken a keen interest in the development of doctoral students and early academic career scholarly development as a chosen field of study. We are particularly interested in how the doctorate serves as a preparation for academic practice (or not). In recent research on experiences of early career academics at eight New Zealand universities, Sutherland, Wilson and Williams (2013) found that having a doctoral degree was positively associated with academic success of early career academics. Though this finding in itself is not surprising, they also found that the more holistic the doctoral experience (including lecturing experience and serving on university committees during candidacy), the more successful early career academics were in terms of increased research output and job satisfaction. Similarly, Sinclair, Cuthbert and Barnacle (2014) found that the majority of their sample of successful researchers reported that the doctorate to a large extent prepared them for an academic career. However, they noted that some aspects necessary to a successful academic career were not developed through the doctorate and that much of their academic development continued after the doctoral candidature.

Furthermore, doctoral education has over the past two decades across the world been transformed from being predominantly a matter of apprenticeship in a close individual supervisor-student-relationship to embracing formal doctoral programmes including a complex network of diverse relationships both within (Bitzer & Albertyn 2011; Motshoane & McKenna 2014; Pilbeam & Denyer 2009; Samuel & Vithal 2011; Strandler Wisker, Johansson & Claesson in press) and outside of academia (Clegg 2014; Lee & Boud 2009; Taylor 2012). Connected to this development there is an increased emphasis on neo-liberal politics in academia (eg Brodin 2015b; Nixon 2004), affecting the conditions for doctoral learning. Currently there seems to be an all-embracing tendency to strive as far as possible for effectiveness in higher

CHAPTER 12 • THE ROLE OF DOCTORAL EDUCATION IN EARLY CAREER ACADEMIC DEVELOPMENT

education, including at doctoral level. Since the focus of current doctoral education is arguably more on moulding effective labourers than fostering creative actors (Brodin 2015a), there are concerns regarding young scholars' further academic development. McWilliam, Poronnik and Taylor (2008:226) warn of a "flight from science", even though there is an ever-growing demand for high-level innovation in science and technology, and international initiatives to support development in these areas. McAlpine, Amundsen and Turner (2013) assert that work-related experiences of doctoral candidates during their doctoral programmes influence the postgraduate careers they imagine and seek. Since expertise and creativity take many years to develop during doctoral studies (Frick & Brodin 2014), the contribution of doctoral education towards building "creative capital" (McWilliam & Dawson 2008:634) – particularly in academe – warrants further investigation.

We are thus curious about the experiences of doctoral students at our respective universities, and how such experiences inform the academic identity development in potential or current early career academics. While research on doctoral education and the students involved is a growing field, there is a paucity of research focused on how doctoral students make the transition into scholarly practice as early career academics. We thus report here on a relatively unexplored field of research through a unique and original perspective: the role of doctoral education in early career academic development at four research-intensive universities. Our goal was to explore the Swedish and South African doctoral educational contexts. Such studies are of particular importance given the increasing global mobility of both doctoral students and early career academics.

THE STUDY

We were particularly interested in how the doctorate served as a preparation for academic practice (or not), with the main question being: How, if at all, does doctoral education prepare doctoral candidates for an academic career? The sample included 20 respondents (five per institution) who were employed in academic positions and were either in the process of completing their doctoral degrees or had attained their doctoral degrees within the past five years. The respondents were purposively selected to represent as wide an array of faculties and disciplines as possible. We used our existing networks to gain access to and recruit interviewees. Babbie and Mouton (2001) advise that this type of sampling is suitable in construing qualitative data as it enabled us to purposefully select respondents that differ from one another on specific variables – in this case representing a diversity of academic disciplines. Although the sample size is not large (and therefore implies limited external validity),

PART THREE • CHANGING EXPECTATIONS OF POSTGRADUATE STUDENTS AND SUPERVISORS

the study is not designed for simple generalisation purposes, but rather to give a deeper insight into the kinds of ways in which doctoral education may or may not prepare candidates for an academic career.

Semi-structured individual, face-to-face interviews were used to investigate the phenomenon of early career academic development and to gain insight into the perceptions of those directly involved – the early career academics themselves. Interviews allowed us the flexibility to probe potentially interesting aspects and yielded in-depth data not possible through a questionnaire. Reasons for particular responses could be explored – which was important to us given the exploratory nature of the study. The interviewers were based at the different institutions and therefore knowledgeable about the culture of the institutions where the participants were registered and/or employed as doctoral students. Interviews were conducted in the interviewees' preferred languages and negotiated by the interviewee and interviewer. This meant that some transcripts had to be translated into English from Afrikaans and Swedish, but it was important to us to ensure that we captured the rich data possible when interviews are conducted in a participant's home language.

In the interviews participants were asked about their academic backgrounds and what motivated them to pursue an academic career. They were also asked what skills and capabilities they considered necessary to become an academic, and what challenges they experienced entering into an academic career. We inquired how suited they felt to an academic career, and asked them to describe their ideal academic career. We then asked them in which ways their doctoral studies had prepared or hampered them for an academic career. We also asked them to reflect on their doctoral process, and consider what they might have done differently in terms of their doctoral studies to advance their academic career.

Qualitative content analysis was applied (Henning, Van Rensburg & Smit 2004:105). After each researcher had read all 20 transcribed and translated interviews, the five of us met to code the data and to group these codes into thematic categories. The process of categorising and identifying themes was thus done collaboratively and involved consensus discussions during analysis. The analysis followed several iterations of refining categories and organising data quotes.

ABOUT THE NATIONAL CONTEXTS

It is necessary to understand the similarities and differences between the countries and institutions in order to set a backdrop against which the results can be meaningfully reflected. The two countries involved – South Africa and Sweden – have very

CHAPTER 12 • THE ROLE OF DOCTORAL EDUCATION IN EARLY CAREER ACADEMIC DEVELOPMENT

different contexts and national knowledge imperatives and they also have different approaches to doctoral education in terms of funding and programme structures.

The two South African universities (Stellenbosch University and Rhodes University) and the two Swedish universities (Lund University and University of Gothenburg) involved in this study are all research-intensive universities that have long traditions of doctoral education and established research and teaching cultures, and thus form an interesting institutional cohort for investigating the role of doctoral education in early career academic development. Amid this common focus on advancing knowledge production through research among the institutions involved there are also distinct national and institutional differences.

The higher qualification levels of the two countries differ markedly and this is particularly stark at doctoral level where in Sweden there are 427 qualified doctorates per million of the population compared to 30 in South Africa (according to the OECD 2011 data). In Sweden 48% of PhDs are awarded to women (OECD 2011) with 42% of South African graduates being women (ASSAf 2010). In South Africa there is an important transformation agenda to undo the racially segregated nature of access to education under apartheid, yet initiatives in this regard have had very limited success with 54% of all doctorates still being awarded to white persons despite this demographic group making up less than 10% of the population (ASSAf, 2010).³

Since the Swedish doctoral educational reform in 1998, doctoral positions have become difficult to attain in the Swedish context. In addition to the former demand of completing doctoral education in four years of full-time studies – according to the Swedish reform in 1969 – the reform in 1998 stipulated that admittance to doctoral education would also require that full funding of the studies had been secured.⁴ Today, about 60% of the doctoral students in Sweden have a doctoral student employment contract (Universitetskanslersämbetet och Statistiska Centralbyrån 2014, 2015) which is paid either by the faculty or external grants. The other 40% are either funded through scholarships or had been admitted before the 1998 reform. This state of affairs has created a highly competitive environment for acceptance into doctoral education. On the other hand, doctoral students who are employed in Sweden have a number of rights as employees (eg medical benefits) that their South African counterparts do not have. In South Africa, entry into doctoral programmes may be less competitive, but many of these candidates study part-time (especially in the social sciences), are self-funded or only have partial funding. It is thus perhaps not surprising that doctoral completion rates in Sweden are currently much higher than in South Africa. In Sweden, 48% of the students who were admitted to doctoral

PART THREE • CHANGING EXPECTATIONS OF POSTGRADUATE STUDENTS AND SUPERVISORS

education in 2008 had graduated five years later in 2013. (Many of these students worked for 20% of their time, for example as teachers in their department during their doctoral studies, and hence got the opportunity to prolong their doctoral student employment with one year.) However, among those admitted in 1980 (before the reform of 1998), 46% had still not graduated in 2013 (Universitetskanslersämbetet och Statistiska Centralbyrån 2014). In South Africa, 54% of candidates who registered for a doctorate in 2006 had either dropped out or had still not completed their studies seven years later (Cloete, Mouton & Sheppard 2015).

The conditions under which doctorates are completed are important to factor in to our discussion, as these conditions have implications for the clarity of career trajectories of early career academics. In Sweden it is now more likely that aspiring academics first complete a doctorate before formally entering the academic workforce, while in South Africa early career academics may find employment as either full-time or part-time academics even before commencing or completing their doctorates (although this is less common in the natural sciences). In both countries, however, academic positions are limited, which places high performance demands on early career academics.

The support mechanisms for doctoral candidates and early career academics differed markedly, not only between countries but also among the four institutions. Some of the institutions had graduate schools or structured support programmes for doctoral candidates and some departments also provided structured orientation and mentoring programmes for early career academics. It should be noted though that graduate schools in Sweden are generally established for a limited time period through external funding within strategic research areas. The extent and format of these support mechanisms seemed to be more dependent on the institutional and organisational culture, as well as on different funding systems, than the national context. However, one difference does exist with respect to the educational structure at national level: irrespective of doctoral educational format, doctoral students in Sweden need to include course work in their doctoral education (where the extent of course work varies depending on the discipline). This is not the case for South African doctoral students, unless they are enrolled in a graduate school.

WHAT WE FOUND

In both the South African and the Swedish contexts we found the following five key themes of early career academic practice: tension between academic freedom and fulfilling multiple roles; developing a scholarly approach; lacking strategies for surviving as a researcher; insufficient preparation for teaching and supervision; and

CHAPTER 12 • THE ROLE OF DOCTORAL EDUCATION IN EARLY CAREER ACADEMIC DEVELOPMENT

missing support in networking. Of course, there were exceptions within each theme among the participants. Thus some of our respondents did not have difficulties with writing articles, for instance. Yet the presented themes capture the most palpable aspects of the participants' experiences in general – which would also be of interest for the overall further development of doctoral education.

Tension between academic freedom and fulfilling multiple roles

When the participants were asked to tell us about the best thing of being a doctoral student, they usually mentioned the sense of freedom. They felt that academe afforded them the freedom to choose their particular knowledge pursuit during their doctoral studies – they could do almost anything they wanted to do, and also choose to interact with others or work in privacy whenever they wanted to:

I think the best thing was that I was free to do what I wanted to do and how I wanted to do things ... I learned how to plan and implement a project. (Lisa, Engineering, Sweden)

I have complete freedom: to travel to a conference that I want to, to research what I want to, to close my door and get on with things I want to. (Armstrong, Science, South Africa)

Thus it is not surprising that the experience of academic freedom from their research-based doctorate had highly influenced their career choice to stay in academia. Some of them also pointed out that a doctorate was necessary for an academic career:

If you want to go into an academic career, you have to have a doctorate (Karl, Science, South Africa)

However, very soon the participants realised that academic practice is not only focused on research (as their doctorate had prepared them to do in the first place), but demands that academics fulfil multiple roles. They discovered that they needed to teach, supervise, contribute to faculty work, apply for funding, and interact with society. In this regard, our data suggest that a research-based doctorate falls short of preparing early career academics for these multiple responsibilities and demands in both the South African and the Swedish contexts. While Alice sometimes felt "completely lost", Lisa had realised already as a doctoral student that she needed to develop many skills by herself without the support from her supervisor:

So much more that comes with the post than just research and teaching ... now I am doing teaching, I am expected to do research, I have ... students to supervise ... well I don't enjoy sitting on committees ... sometimes I do get completely lost. (Alice, Humanities, South Africa)

PART THREE • CHANGING EXPECTATIONS OF POSTGRADUATE STUDENTS AND SUPERVISORS

I think, because I have always known that I wanted to stay there [in academia], I have thought a lot about what I have chosen to do during my doctoral studies. For instance, that I have been involved in writing research applications during my doctoral studies... I've had a presentation at an educational conference and such stuff ... The advantage is that I have planned my work myself and steered myself because my supervisor has not been engaged, so I have kind of decided for myself what I wanted to do. Although it was a pain when you were not supported in your doctoral studies, it has of course been an advantage for me. And I feel quite calm now when I am going to start on my own, because I know I can do it myself because I've already done it. So in that way, I think it feels good and that I am prepared ... But it was tough during my doctoral studies. (Lisa, Engineering, Sweden)

Besides the indication that most participants were not well prepared for fulfilling the multiple roles of being an academic through educational support, they were also seldom ready to embody each role by itself. Hence, the initial sense of academic freedom sooner or later took on darker nuances of serious concerns in their struggle to survive in academia. We will now take a further look at these strengths and weaknesses of doctoral learning, starting with the shaping of a research identity.

Developing a scholarly approach

The participants had different reasons for conducting doctoral studies, but they all had a genuine interest in learning more about their subject and contributing to scholarly knowledge development. For a couple of participants this implied an early ambition to become a researcher, and some had already as undergraduate students decided to 'become a professor'. For other participants, it was not important to become a researcher *per se*, but their driving force sprang from the scholarly project itself:

I do not know if I wanted to be a researcher but I wanted to immerse myself ... I wanted to run this project to the end, so to speak. (Per, Education, Sweden)

Whatever the reason was to conduct doctoral studies, the doctorate served as a preparation for early career academics to become researchers – although more so in certain areas of research practice than others, as our data will show. The results point to the fact that they had learned (at least initially) to build a knowledge project based on their doctoral work to kick-start the research aspect of their academic careers. Research-related tasks such as editing and reviewing one's own and others' work, and approaching texts from a conceptual perspective, also contributed to

CHAPTER 12 • THE ROLE OF DOCTORAL EDUCATION IN EARLY CAREER ACADEMIC DEVELOPMENT

this identity development which was driven by the participants' critical and creative thinking:

[You learn to] be very, very critical of what you have done ... that kind of critique would not have happened if you did not go through that [doctoral] process ... I feel a bit more confident in reviewing work in my field. (Priscilla, Education, South Africa)

The fact that I can interact conceptually with texts is very creative. (Nadine, Law, South Africa)

Thus, learning to follow a scholarly approach seemed to form an essential part of this preparation for academic practice. Perhaps most of all it implied becoming an independent researcher. According to the participants who mentioned the importance of independence, this was particularly true for those who did not follow in their supervisor's footsteps while they were doctoral students, but rather chose to put their own ideas into practice:

What is expected from you is to become independent quite quickly ... you have to show that you are an independent researcher [if you want to make an academic career] ... you should do something else [than your supervisor]. (Anna, Medicine, Sweden)

Lacking strategies for surviving as a researcher

Even though the participants felt that doctoral education had prepared them for becoming scholarly researchers who engage in critical and creative thinking, as well as independent action, many of them were concerned about the lack of strategies for nurturing their further research development. For instance, some participants realised the importance of mastering article writing for disseminating their results as a future researcher. Still, they did not experience enough support for this type of writing during their education. Instead, these early career academics seemed to be out in the cold when they were expected to publish their work during or after completing their doctorates:

I don't think it prepares you for that [article writing] ... it is very difficult. I still speak to people that are still struggling to write something out of their doctoral thesis. (Priscilla, Education, South Africa)

... I felt like it was standing still, I did not get any articles published and I just thought: why am I doing this? I'm just bad, I just feel stressed out; why cannot life be just nice instead? (Cecilia, Education, Sweden)

Furthermore, the participants emphasised the importance of training in writing funding proposals for future research projects. A few of the participants got such experience from their doctoral education, but most did not. Accordingly, this seemed

PART THREE • CHANGING EXPECTATIONS OF POSTGRADUATE STUDENTS AND SUPERVISORS

to be another key area in which the current doctoral programmes fell short in preparing early career academics in this study, as the quotations below suggest:

The entire process [of writing grants] and how extensive it was ... But perhaps it is not so common to do this during your doctorate, perhaps towards the end then. But then you have of course not time. (Cecilia, Education, Sweden)

The head of department said, "You must, you must, you must" ... I found it quite difficult to negotiate my way in from a doctorate into a project where you got to apply for money. I had no clue how to apply for money. I was completely unprepared for that and you just got to learn along the way. (Alice, Humanities, South Africa)

Against this background, it appears that doctoral education prepares early career academics to think and act like researchers with respect to knowledge production. However, the doctoral graduates are not always equipped to survive as researchers in their further academic careers.

Insufficient preparation for teaching and supervision

In a research-based doctorate allowing time for teaching experience is not a requirement, and it is not always encouraged as timely completion is deemed more important. Furthermore, in some departments in this study most of the organisational activities were focused on research in general. Thus, even though the participants aspired to already teaching classes as doctoral students, the opportunities for attaining such experiences sometimes did not exist within the frame of doctoral education. In other cases, the participants did get the chance to teach during their doctoral education, but as a whole the respondents in this study indicated that they felt ill prepared for their teaching responsibilities as early career academics:

The doctorate prepares you to do research but doesn't really prepare you to go into a classroom and teach. (Armstrong, Science, South Africa)

I'm not a teacher, I cannot come up and just say that this are my thoughts and I know ... (Magnus, Education, Sweden)

With respect to supervising other students, many participants expressed similar concerns. Some respondents attended courses on supervision, which they found useful, but the doctorate itself seemed to add little value in preparing them for this component of academic practice:

But I think the doctorate does not really prepare you for supervision. I do not know what should or what better there is, some sort of criteria. (Priscilla, Education, South Africa)

CHAPTER 12 • THE ROLE OF DOCTORAL EDUCATION IN EARLY CAREER ACADEMIC DEVELOPMENT

And then the [supervision of] ... postgraduate students suddenly, that responsibility was quite something. I enjoyed the [supervision] course that I did ... that put a whole lot of, I mean, that shed a lot of light on what I was supposed to be doing. (Alice, Humanities, South Africa)

Missing support in networking

Overall, the participants mentioned the importance of networking for their further academic career. For instance, writing articles and funding proposals are seldom solitary activities, and most of the time such activities require collaboration with other scholars. However, our data suggest that the doctorate as such does seldom prepare early career academics for networking, and that this aspect is highly dependent upon individual supervisors' approaches:

Supervision is not only about the doctorate so much as introductions and opportunities that help the student to build a future career in academia. That is what prepares the person for academia as this stuff is not obvious. (Danai, Sciences, South Africa)

What I miss the most, it was to be introduced into networks because my supervisor was not engaged and I've never been at a conference with him. So I have never met people in my field, so I have tried to do that on my own. It has been very difficult, since as a doctoral student, you are not worth much – at least not internationally. (Lisa, Engineering, Sweden)

Besides networking within academia, some participants also emphasised community engagement as another important area of connecting to people. Nevertheless, such engagement appeared to be another core academic responsibility for which the respondents in this study felt ill prepared. Paradoxically, even though community engagement is a networking activity in itself, it tended to be one of the loneliest learning processes for young academics. They had to find their own path in this regard:

Other stuff about being an academic you kind of pick up along the way, community engagement and being on committees and all the other aspects. But only if you have someone to help you. If you're all isolated and your colleagues keep it all mysterious, it is harder ... Now I do community engagement outside the box. (Alfred, Science, South Africa)

CONCLUDING DISCUSSION

We interviewed 20 early career academics across four research-intensive universities in South Africa and Sweden to investigate the role of doctoral education in early career researcher development. Our data pointed out distinct contextual institutional and national differences that cannot be ignored in a study of this nature, but the

PART THREE • CHANGING EXPECTATIONS OF POSTGRADUATE STUDENTS AND SUPERVISORS

similarities in our respondents' experiences proved to be more significant in answering our initial question. The doctorate was seen as a prerequisite and a preparation for academic career progression. Overall, we found that the doctorate formed an integral part of learning to be a researcher, as noted by Sinclair *et al* (2014). This finding is in agreement with that of Stubb, Pyhältö and Lonka (2014). In their study, doctoral students reported viewing research as a contractual responsibility. The emphasis on research is not surprising, as the doctorates within both national contexts included in the study are focused on building research capacity and generating new knowledge. Our findings were also similar to those reported by Hopwood (2010) whose students reported improvement in scholarly practices such as editing and reviewing work as a result of doctoral learning.

The doctorate lays the foundations for independent research within or outside academe (Taylor 2012), and aspiring to an academic career influences the way academics interpret their doctoral learning experience (Hopwood 2010). The participants of our study described their doctoral journey in terms of academic freedom, which implied they were free to develop their own knowledge project. Thus our data suggest that the respondents perceived the doctorate as an independent space for research (contrary to much of the literature that emphasises the dependence of doctoral candidates). The doctorate allowed them time to think and develop their thoughts through deep immersion, which formed an essential part of their early academic career development. That positive personal connection is often characteristic of doctoral learning, and has been found in other studies as well (Vekkaila, Pyhältö & Lonka 2014). Similarly, Sinclair *et al* (2014) noted that among their sample of successful researcher respondents, intrinsic interest in their work and the intellectual challenge were key motivators for them in their doctoral studies. Furthermore, Benmore (2014) states that the increasing control of content and direction of students' work is central to their development of academic autonomy.

However, the knowledge society requires knowledge workers who should not only produce new knowledge but also do so in a super-complex higher education environment (Barnett 2000, 2012). This precondition turned out to be a challenge for our participants. Once they formally entered the academic career trajectory in a university with its multiple demands and auditing performance-based culture, their original sense of freedom and independence was threatened. Accordingly, the subsequent multiple responsibilities with their mysterious expectations and pressures to perform well in diverse arenas may inhibit early career academic development – especially when young academics are not well prepared for this 'super-complex' task. Higher education institutions should therefore not assume that the doctorate

CHAPTER 12 • THE ROLE OF DOCTORAL EDUCATION IN EARLY CAREER ACADEMIC DEVELOPMENT

alone prepares early career academics for multiple responsibilities. Multiple support structures are necessary, including supervisors and external mentors, and carefully designed, wide-ranging induction programmes. The New Generation of Academics Project (NGAP) in South Africa may pave the way in this regard. This project seeks to increase the number of young black academics with doctorates. However, doctoral students can easily be overburdened and abused within the university systems and as a result lose their focus, which compromises completion rates. It was clear that without well-structured programmes that attend to the multiple aspects of academic work, a doctorate alone does not sufficiently prepare novice academics for a future career in academia.

Our results revealed that, in addition to weak preparation for handling multiple roles, many participants also felt uncertain in fulfilling the duties of each academic role by itself. This result is in line with the study of Sinclair *et al* (2014) who also found that there were aspects where the doctoral study did not prepare academics for their career. The doctorate was rather viewed as the beginning point of their career, where development was a continuous process during and after completion of the study. Even though one cannot expect doctoral students to become fully fledged academics within the frame of doctoral education (due to the limited time period), the fact that some of the most important strategies for surviving in academia are not introduced during the course of doctoral studies raises some concerns. One such strategy is writing funding proposals, a skill that many of our participants sorely missed in their doctoral education. Another such strategy is research dissemination, which is key to knowledge production. This aspect was also noted in a study by Evans (2014), where academics most frequently mentioned the importance of writing for publication. Nevertheless, our study shows that in many cases much of this dissemination is assumed to happen after completing a doctorate. Participants who did not have former experience of publishing articles explicitly mentioned how this lack of skill caused a great deal of stress. According to Evans (2014), such inabilities could also have a negative effect on self-esteem and promote feelings of inadequacy; hence it is not surprising that Vekkaila *et al* (2014) discovered that students perceive a mismatch between themselves and their academic environment when faced with such a disengaging experience.

Though some disciplines and doctoral programmes may expect publication to take place during the doctorate, it then often takes place with much support and input from the supervisor(s), which Paré (2010) refers to as the invisible second author. In their study of successful researchers, Sinclair *et al* (2014) indicated that respondents reported on the positive value of the experience of co-authoring with

PART THREE • CHANGING EXPECTATIONS OF POSTGRADUATE STUDENTS AND SUPERVISORS

their supervisors. With some exceptions, this did not seem to be the norm in our study. Due to the competitiveness of academia, we suggest it may be too late to start learning this skill after doctoral graduation when the timely support from senior scholars could be difficult to find. Furthermore, many of our participants also believed that their pedagogical competence was another under-developed area. Teaching is an important part of any senior lectureship and postgraduate supervision is a core responsibility in research-intensive universities. Still, most of them felt ill prepared for these responsibilities. For instance, with respect to postgraduate supervision, the South African participants were often left with the limited examples from their own supervisors, in accordance with the study of Bitzer and Albertyn (2011).

Nevertheless, the academic enterprise is not a matter of mastering research, teaching and other academic duties only. Success in academic practice is highly dependent upon building networks in a specific subject area – what Vekkaila *et al* (2014) refer to as a nested entity providing arenas for student participation and support. Hopwood (2010) refers to this learning as a social process, but argues that these interactions cannot just be taken for granted and sometimes need to be intentionally planned. Often these networks are established on an informal basis, where the rules of the (networking) game are unwritten and difficult to decipher for the newcomer (Frick & Hoffman 2012). Since many participants in our investigation lacked this kind of support during their doctoral studies, it appears that some work needs to be done to facilitate doctoral students' networking.

Against this background, the findings from our and others' studies raise questions about the purpose of the doctorate as preparation for an academic career, and how early career academics may use this learning experience as a preparatory phase for their further career trajectories. Despite obvious contextual differences between doctoral systems in South Africa and Sweden, the participants in this study faced similar challenges in adjusting to academic practice as early career academics. If doctoral education is seen as preparation for academic practice as is often claimed, then doctoral programmes may need to consider carefully how this preparatory phase addresses the complexity and multiplicity of practice that awaits graduates after completion.

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CHAPTER 12 • THE ROLE OF DOCTORAL EDUCATION IN EARLY CAREER ACADEMIC DEVELOPMENT

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PART THREE • CHANGING EXPECTATIONS OF POSTGRADUATE STUDENTS AND SUPERVISORS

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CHAPTER 12 • THE ROLE OF DOCTORAL EDUCATION IN EARLY CAREER ACADEMIC DEVELOPMENT

Universitetskanslersämbetet och Statistiska Centralbyrån. 2014. *Sveriges Officiella Statistik. Statistiska meddelanden. Universitet och högskolor. Doktorander och examina på forskarnivå 2013*. [Official Statistics of Sweden. Statistical report. Doctoral students and degrees at third cycle studies 2013], UF 21 SM 1401.

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NOTES

1. We acknowledge that many doctoral candidates do not enter academic practice before, during or after completing their doctoral qualifications, but we are particularly interested in the group that do become academics, and particularly those who undertake their doctorates as early career academics.
2. We use the term 'academics' when referring to those working as scholars in an academic setting (regardless of their age, qualifications or academic position). We use the well-established term 'early career academics' in reference to those at the onset of an academic career (regardless of their age) who are busy with their doctorates, or within five years of completing their doctorates and employed in an academic setting – such as our study participants.
3. The data presented in the ASSAf Report covers the period 2000–2007. In the case of the OCED, 2011 was the most recent dataset available.
4. In the Swedish context doctoral candidates can choose to complete their studies in eight years if they choose to study and work on a 50:50, or five years for a 80:20 division of labour. This arrangement is common among doctoral students within professional areas (eg teaching, medicine, art). Furthermore, many doctoral students work 20% of their time at the department (eg teaching), in which case the doctoral employment is for five years (4 years study, 1 year work). There are financial repercussions for students for not completing doctoral work within these stipulated periods. Furthermore, the competition for academic positions is high as only a third of these graduates get employed at academic institutions after completing their doctoral studies.