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AMEE GUIDE

The supervisor's toolkit: A framework for doctoral supervision in health professions education: AMEE Guide No. 104

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Abstract

Doctoral studies represent a complex undertaking for students and supervisors. Some research describes the experience of students while there are volumes of advice for students considering a doctorate. Yet the terrain for supervisors is less well-trodden and the concept of a pedagogy of supervision is only really starting to emerge. Texts on the doctoral journey from the supervisor's perspective are uncommon and less yet has been written in the context of health professions education. The aim of this Guide, therefore, is to provide guidance for the supervisor's journey, drawing on our collective experience and such literature as there is. We explore the doctoral journey of students and their supervisors, highlighting what the implications are for supervisory practice. Recognising the doctorate as much more than merely conducting a research project, and seeing it as a shared educational endeavour is fundamental to understanding the doctoral journey — a journey that is complex and mutable, constantly shifting as the candidate moves from novice to expert, from dependence to growing autonomy. Our intention is to present this Guide as a toolkit for both the novice and the experienced supervisor as it, on the one hand, seeks to make the practice of supervision more transparent while on the other, challenges the reader to critically reflect on the supervisory space in which they currently reside. Our hope is that the Guide opens up opportunities for generative conversations about the practice of doctoral supervision in health professions education.

Introduction

There is a growing interest in postgraduate studies in health professions or medical education characterised by increasing uptake and a diversity of offerings across the globe (Tekian 2014). As qualifications at Master's level have become established, institutions are looking to offer the doctorate in health professions or medical education as a logical next step. As a result, there is a concomitant need for health professions educators, who themselves have completed doctoral studies, to facilitate the doctoral process guiding the student towards graduation. This process of facilitation is typically referred to as "supervision" and is the focus of this Guide. However, as we seek to place doctoral supervision under the spotlight, we do so with a disclaimer acknowledging that the term "doctorate" encompasses a range of offerings that differ significantly in terms of their format and nomenclature (Tekian & Artino 2013; Tekian 2014). We will explore some of these different formats later in the Guide, but as a point of departure focus predominantly on the supervisor–student "apprenticeship" model, and variations thereof, which is still dominant across many countries (Bitzer & Albertyn 2011; McCallin & Nayar 2012). In this model, a single student works with one or two supervisors, sometimes also called "promoters", across the

Practice points

- A doctorate is about much more than merely conducting a research project; it provides a unique opportunity for shared academic endeavour that ought to be enriching for both student and supervisor.
- Doctoral supervision should be positioned as a form of pedagogy that is informed by relevant theory and acknowledges the potential of doctoral studies to provide a transformative learning experience.
- Doctorateness speaks to a process of "being and becoming" that accompanies the emergence of a doctoral identity with the supervisory process enabling the student's legitimate participation in the disciplinary community of practice.
- Doctoral supervision requires flexibility and adaptability, a guiding hand and a supportive stance to induct students into the disciplinary space within which educational research resides.

period of study. With regard to terminology, we will use the term "doctorate" which we see as including the different qualifications, particularly the PhD which is currently the most

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dominant descriptor used in health professions education (HPE) (Tekian 2014).

Doctoral studies as a journey

The doctoral degree is generally regarded as an academic “Everest” that few attempt and fewer still conquer. The process undertaken towards this achievement may be likened to that of a journey, often characterised as a lengthy and lonely endeavour, with the student taking their lead from a senior academic in the chosen field of enquiry. There is growing literature that seeks to understand both the journey and the supervisor–student relationship, in most cases seeing the journey through the eyes of the student. This work emphasises both “doing” and “achieving” the doctoral work, captured as “doctorateness” (Trafford & Leshem 2009). In this context, the intellectual growth experienced by the student occurs alongside a process of identity construction — the student’s being and becoming “doctorate”.

Texts on the doctoral journey from the supervisor’s perspective are less common, this in spite of the fact that studies exploring the supervisory relationship recognise the key role played by the supervisor in achieving successful outcomes (Grant 2003; De Kleijn et al. 2012). Notable exceptions are studies conducted in Australia and New Zealand (Pearson & Brew 2002; Brew & Paseta 2004; Manathunga & Goozee 2007). Very little has, however, been written from an HPE context. Indeed, the doctoral supervisory relationship could be described as being shrouded in secrecy — a “secret garden” (Halse 2011) — seldom discussed either formally or informally among colleagues; not overtly addressed in faculty development programmes; and an area of relative silence in the literature. While the doctoral journey has often been described as a lonely one for the student (Batchelor & DiNapoli 2006; Van Schalkwyk 2014), Gunnarsson et al. (2013) suggest that the journey is equally lonely for the supervisor. There is also evidence to suggest that there are few structured opportunities that focus on preparing novice supervisors for this academic role and, as is the case with most university teachers, supervisors are seldom “trained” to supervise (Amundsen & McAlpine 2009).

The aim of this Guide, therefore, is to track the doctoral journey with a view to providing guidance for the supervisor’s journey. In doing this, we hope to explore the many facets of supervisory practice, from both a theoretical and an operational perspective. Our intention is to present this Guide as a toolkit for both the novice and the experienced supervisor as it, on the one hand, seeks to make the practice of supervision more transparent while on the other, it challenges the reader to critically reflect on the supervisory space in which they currently reside. We will review the different perspectives with regard to what is seen as “good” supervision. Ultimately, we hope that this Guide will help illuminate the supervisory relationship and in so doing lift the veil that currently tends to shroud this relationship in secrecy (Grant 2003).

A key point of departure in this Guide is that doctoral supervision should be positioned as a form of

teaching (Wisker et al. 2003), a pedagogical endeavour (McCallin & Nayar 2012) — one that can be informed by relevant theory and that contributes to the scholarship and the science of the discipline. Pedagogy is important. It enables us to recognise doctoral studies as learning and then go beyond the “what” that is learnt, to also recognise the “how” this learning occurs (Green & Lee 1995; Wisker et al. 2003) — considerations that we believe are crucial for doctoral supervision. Entwistle and Peterson (2004) point to a conception of learning where the outcome is a change in one’s thinking and doing; one’s identity. Mezirow (2003) describes this as “transformative” learning — a concept that provides a theoretical basis for this Guide.

Our discussion of the doctoral journey will follow along two paths — that of the supervisor and that of the student. Doctoral studies, including those in HPE, reside in a relational and highly personal space with the student and the supervisor as main protagonists (Nulty et al. 2009). The relationship has been described as complex, volatile, unpredictable and unstable (Pearson & Brew 2002; Grant 2003), but tightly interwoven nonetheless. In this relationship, the influence of the supervisor on the student’s experience, their attitude towards research and their ultimate success, is significant (Lee 2008; Nulty et al. 2009; McCallin & Nayar 2012). We cannot therefore consider the experience of the doctoral supervisor without keeping the student in view. Our parallel tracking of the student’s journey is intended to inform the supervisor’s understanding of this journey, while tracking of the supervisor’s journey is to enrich our thinking around what it means to supervise doctoral studies and how the experience of being a supervisor also represents a space for identity construction, for becoming a supervisor (Wisker et al. 2003).

Halse (2011) argues that:

Regardless of supervisors’ discipline, position in the academic hierarchy or supervisory experience... supervisors’ learning experiences shape their subjectivities and identities, and that supervision is an ongoing ontological process of ‘becoming a supervisor’.

As an author team, we draw on our experience of postgraduate supervision across four continents to shed light on this process of becoming. Although we come from varied backgrounds, our shared interest is in HPE and the strengthening of postgraduate supervision in the field. In writing this Guide, we have used this collective experience to navigate a path through widely varied practices in doctoral supervision and give guidance that will apply in as wide a range of settings as possible.

The doctorate – A brief overview

Before embarking on our review of the doctoral journey, it is useful to briefly consider the status of the doctorate and specifically the doctorate in HPE, globally. Doctoral outputs are often seen as a measure defining the quality of research

in a particular country and a marker of economic stature (ASSAf 2010). Thus, in many countries, including many under-resourced countries, increasing pressure is being placed on institutions to focus on producing graduates at this level. This can, however, lead to significant challenges as plans and strategies to increase student numbers are not always accompanied by concomitant plans and strategies to increase (eligible or experienced) supervisors.

Often time to completion exceeds recommended time-frames (McCallin & Nayar 2012) and supervisors are expected to address this delay and to increase throughput (Halse 2011). It is therefore not unexpected that a key concern in the current discourse around doctoral education relates to high attrition or non-completion rates, and lengthy time taken to graduation (Gunnarsson et al. 2013). Against this backdrop, our focus on supervisory practices is timely.

Although the modern doctorate emerged during the nineteenth century (Boud & Lee 2009), doctorates in the health professions, and particularly in HPE, have been relatively late entrants into the field (Cusimano & David 1998). The current upsurge in doctoral studies is occurring in a space not well described in the literature. Apart from all of the generic challenges mentioned previously, doctoral studies and supervision in HPE are characterised by unique contexts particularly when it is the busy clinician who is embarking on doctoral studies or the supervision thereof. A recent review of doctoral programmes in HPE (Tekian 2014) offers further clues as to some of the key challenges. Some of these result from there being significant distances and time zones between supervisor and student given that there are still relatively few programmes to choose from. These include issues of language, culture as well as differences across health systems and educational structures, which can all influence the doctoral journey and the supervision thereof. There is also considerable diversity in the way in which the doctoral candidate is affiliated with the university, typically as a student, but sometimes also as an existing member of staff or as one appointed to the department as a doctoral student (Tekian 2014). Each permutation introduces further complexities into the supervisory relationship.

A framework for the doctoral journey

It is against this background that we have sought to develop this toolkit for supervision, using a framework to facilitate the discussion of the doctoral journey that indicates the different phases that characterise it (Table 1). For each phase, we review the process as it can unfold for both key role players, suggesting possible outcomes for the phase. Mapping the journey in this way may seem to imply a simple and linear progression that contradicts the complexity referred to earlier. This is not the intention; the framework is rather a device to structure the Guide even as the iterative and multilayered nature of the doctoral supervisory relationship is acknowledged.

Phase 1: Before the doctorate

Contemplating the journey

The reasons why people embark on a doctorate are varied. As more people have access to higher education, further studies become important for those wishing to add something unique to their curriculum vitae, while for others it might simply be 'the next logical step' in their careers. For those wishing to follow an academic career, it holds a very specific currency in terms of career opportunities. Increasingly, however, there is a demand for professionals with advanced qualifications to enter the business and public sectors (ASSAf 2010). Of course, there can be many other catalysts for prompting the doctoral endeavour, particularly when there is the opportunity to join an existing project and/or when funding is being made available for research in a particular field. Supervisors should find out what these initial drivers are during the early interactions with the students — understanding what motivates the student right from the start is an important component of the doctoral supervisory process.

Having decided that they wish to take this step, the prospective student starts to make preliminary enquiries regarding doctoral studies, seeking guidance and advice. How to go about exploring the options for these further studies can, however, be quite daunting. Information about what is available and what is required is not always easily accessible or transparent (Tekian 2014). This can be a particular challenge for those outside university structures, such as clinical trainers in hospitals, health care practitioners in governmental structures and so forth.

Deciding which university to register with and finding a supervisor are among the many key decisions that will have to be made. Prospective students may turn to colleagues, peers and former teachers to guide them in this regard. In some contexts, a student can be allocated a supervisor, particularly when the study is to be conducted within a particular project. Some programs encourage including supervisors from the candidate's own context in the supervisory team.

It is in this uncertain context that the supervisory relationship is born. As mentioned at the start of this Guide, supervisors are typically not prepared for the supervisory role, particularly not a pedagogic one such as that being contemplated here. Doctoral supervision has been described as a specialist form of teaching requiring "a sophisticated, high-level" approach (McCallin & Nayar 2012). Entwistle and Petersen (2004) have described how our conceptions of learning can influence the way that we teach, and so too, argues Lee (2008) are supervisors' strongly influenced by the way in which they conceive research supervision (Table 2 later) — a conception that has most often been framed by their own doctoral experiences, or by their experience of co-supervision. Amundsen and McAlpine (2009) suggest that learning to become a supervisor is akin to "trial by fire". Once again, the "secret" nature of the doctoral relationship does not necessarily lead to open discussion of the pedagogical endeavour that ought to be implicit making it difficult for less experienced researchers to enter supervision with any real tools or clear guidance as to what is expected (Halse 2011).

Table 1. The three phase framework of the doctoral journey.

Phase	Roles/Activities			Outcome
	Student	Supervisor		
Phase 1: Before the doctorate Contemplating the journey	<ul style="list-style-type: none"> • Makes preliminary enquiries • Seeks guidance 	<ul style="list-style-type: none"> • Knows what is required for a doctorate – intellectually and administratively • Clarifies student's purpose • Develops an understanding of the student and their context 		Commitment to undertake a doctorate
Understanding the aim of the journey	<ul style="list-style-type: none"> • Considers: What is a doctorate? What is doctorateness? • Explores questions with regard to educational research and its body of knowledge 	<ul style="list-style-type: none"> • Considers: Is this a potential doctorate? • Develops student's conceptions of doctorate(hess) 		A preliminary perspective of the destination
Establishing a supervisory relationship	<ul style="list-style-type: none"> • Link up and/or find the "right" supervisor • Establish relationship with supervisor • Seek out 'critical friends' • Develop a support network 	<ul style="list-style-type: none"> • Challenges misconceptions • Explore supervisory "fit" – be the "right" supervisor • Negotiates the supervisory relationship 		A committed relationship between supervisor and student An (evolving) support network in place
Phase 2: Engaging the doctorate Mapping the route	<ul style="list-style-type: none"> • Read and consult towards conceptualising protocol/proposal • Review submission processes and requirements 	<ul style="list-style-type: none"> • Guide student's progress conceptually, methodologically, intellectually and administratively 		Finalised protocol
Embarking on the journey	<ul style="list-style-type: none"> • Conduct empirical work and craft dissertation • Move towards doctorateness • Identify own professional learning needs 	<ul style="list-style-type: none"> • Facilitate student's legitimate participation in the communication of practice 		Research being conducted Move towards a scholarly/doctoral identity Intellectual growth
Phase 3: Completing the doctorate Reaching the destination	<ul style="list-style-type: none"> • Persisting to the end • Know when to let go and finish • Complete the thesis • Maintain scholarship • Manage one's ongoing professional learning 	<ul style="list-style-type: none"> • Identifying when the student should stop; that the destination has been reached • Serve as examiner • Reflection • Act as mentor to new "colleague" • Introduce as member of scholarly community • Draw into co-supervision 		Thesis submitted Successful defence
New beginnings: a next journey				Productive researcher and/or scholarly practitioner

Table 2. Supervisory approaches adapted from Lee (2008); McPhail & Erwee (2000).

Lee's approaches	Descriptors	Roles/activity	Required knowledge, skills, attributes	Outcome	Disadvantages
Functional	Manages the research as a project	Manager; directing; progression through tasks	Project manager (knowledge of institutional requirements)	Student obedient, organised, Ensures clarity	Can lead to rigidity potentially stifling innovation and new perspectives
Enculturation	Encourages student to be members of the disciplinary community	Apprenticeship; diagnose "deficiencies"	Disciplinary standing	Recognises social dimension of supervision; role modelling	Supervisor can become gatekeeper
Critical thinking	Student encouraged to question and analyse their work	Adopts a Socratic method; questioning, challenging	Argument, analysis	Constantly challenging	A western intellectual tradition — requires sensitivity when dealing with other cultures
Emancipation	Student is encouraged to question and develop themselves	Mentoring, coaching	Facilitation, reflective practitioner	Personal growth, reframing	Can result in student becoming too introspective
Relationship development	Student is enthused, inspired and cared for.	Supporting, nurturing	Emotional intelligence, flexibility, adaptability	Emotional intelligence	Can become too "close"

Learning often takes place "on-the-job" (Box 1) as the novice's understanding of the intellectual and administrative requirements for the doctorate emerges.

Understanding the aim of the journey

Few students have a clear picture of their intended research at this early stage in the process and will need to knock on many doors before they find the answers they are seeking. They will expect prospective supervisors to help them find these answers. In addition, their expectations of the doctoral journey can differ significantly as each individual prospective student brings a set of deeply personal goals to it (Van Schalkwyk 2014). Often these expectations are at odds with the supervisor's understanding thereof and the goals are unrealistic. Facilitating a clearer understanding of the doctorate, what it means to be "doctorate" and how to go about embarking on the doctorate, becomes a critical checkpoint in the journey.

Exploring students' expectations and dispelling unrealistic goals is key to the initial conversations. Any disconnect between student and supervisor expectations can negatively influence the supervisory relationship and, ultimately, student success (Wisker et al. 2003; Lee 2008). For example, students may hope to "*learn how to conduct research...*" (Caldwell et al. 2012), whereas supervisors generally expect a prospective doctoral student to have already mastered research skills during their Master's studies. With the increasing focus on coursework in Master's programmes, however, the extent of the research endeavour is often limited. In addition, when students do enter the doctoral arena after having completed a coursework-based Masters, they do so with limited, if any, experience of being supervised and, therefore, what such supervision might entail. Currently, entry into doctoral studies in HPE generally requires a degree at Master's level, with a growing trend that of compulsory coursework as part of the doctoral programme (Tekian 2014).

Nevertheless, most students will enter doctoral studies with a sense that it is about completing a research project that will culminate in the "thesis" that will document the contribution being made by the study to the body of knowledge. This focus on the summative output of the doctorate tells only half the story. Very few students realise that they will not only need to engage in the process of knowledge acquisition and creation, but to also navigate the developmental and scholarly journey towards doctorateness (Trafford & Leshem 2009; Frick 2011). Understanding what is seen to be "doctorateness", on both the part of the student and the supervisor, is key to understanding the aim of the doctoral journey, but the term is not easily defined (Wellington 2013). It can be useful to understand the concept in terms of the way in which it manifests in the doctoral end product — authentic work, that is scholarly, presented in a clear and orderly fashion and that makes a contribution in the field (Wellington 2013) — but this does not do the term justice. We would rather argue that doctorateness speaks to a process of "being and becoming" that accompanies the emergence of a doctoral identity (Green 2005; Barnett & Di Napoli 2007) and can be likened to a furnace that smelts, reshapes, re-forms and moulds. Many students experience this process of identity formation — its deconstruction

Box 1. How do you “learn” supervision (adapted from Halse 2011).

Training is most often “on-the-job”. As a consequence, many institutions have prerequisites in terms of cosupervision before solo supervision is permitted. Supervisors have reported on their “learning” through the supervisory process:

- Learning the “rules of the game” — institutional regulations, policies and procedures. Knowing how to deal with the bureaucracy and administrative minefield, becoming familiar with funding applications and how to complete them;
- Learning about pedagogy in the supervisory relationship — the need for structure and discipline as described previously, but also learning about their “supervisory persona” (Halse 2011) and how this should best be established.
- Learning (more) about their own discipline through their focussed engagement with the cutting-edge research that characterises most doctoral work.
- Learning to become disciplined in one’s supervision by establishing clear structures for reporting, meetings, and the provision of feedback.

However, not all “learning” as described in Halse’s study was necessarily beneficial for the doctoral process and should be noted with caution:

- Learning “self-protective strategies” which could sometimes mean that the supervisor inserts oneself more directly into the student’s work in order to take the process forward or recommends that a student adopt a safer strategy rather than taking risks in the interests of managing time frames. Other actions include offering too much direct feedback on student writing such that it becomes the supervisor’s work rather than that of the student, and so forth.

Box 2. Some examples of websites describing pre-doctoral programmes in health sciences.

<http://www.fcm.arizona.edu/predoc>
<https://www.iths.org/education/pre-doc/>
<http://www.msm.edu/Education/pediatrics/predocProgram.php>
<http://www.sun.ac.za/english/faculty/healthsciences/interdisciplinary-health-sciences/projects>
<https://she.mumc.maastrichtuniversity.nl/writing-phd-research-proposal>

Box 3. Some common student ‘misconceptions’ on HPE research.

- Research in education is evaluation research
- My own education practice is interesting enough to warrant publication
- The methodological preparation in the health science domain prepares me for research in education
- Academic writing skills are easily learned
- Quantitative research is “good, the gold standard”, qualitative research is “easy and not rigorous”
- I’ll be able to do this in evenings and weekends with no problem while I continue my clinical practice

and reconstruction — as complex and multifaceted, influenced by their individual realities and social contexts (Jazvac-Martek 2009; Van Schalkwyk 2014). The supervisor is challenged to act as catalyst, mentor and safety net as the student grapples with the challenges of being and becoming in this complex space — a process that is ongoing throughout the doctoral journey.

Often those who embark on doctoral studies in HPE come from disciplinary backgrounds other than HPE. Some may have clinical backgrounds — doctors, nurses, physiotherapists, pharmacists, occupational therapists and so forth — and while they may be well established in their home discipline and the science that underpins it, they are novices in terms of educational theory and discourse. The very notion of theory underpinning research may be alien. Aspiring students can be unaware of the scope and depth of research that exists in the field of HPE (Eva 2008; Cleland & Durning 2015) and related fields like educational psychology, educational sociology and higher education. In response to these realities, some medical schools and health sciences faculties offer pre-doctoral programmes that focus on orienting prospective students (Box 2) and sometimes even taking them through a structured process towards preparing the research proposal that is typically required for registration.

Working with school children studying physics, Vosniadou and Skopeliti (2014) described how these learners entered the learning environment with a set of “naïve beliefs” and misconceptions about it. In the context of HPE, similar beliefs and misconceptions exist, both in terms of the knowledge base in the field and the way in which research is conducted in it. Some of the common early misconceptions that we have experienced in our students about undertaking doctoral studies in HPE are listed in Box 3.

The expectations for the doctorate are often described in policy documents generated by Ministries of Education and other national regulating bodies, highlighting different foci and criteria. Key themes include demonstrating an ability to “undertake research at the most advanced academic level . . . be of a quality to satisfy peer review and merit publication . . . pure discipline-based or multidisciplinary research or applied research” (National Department of Higher Education and Training (South Africa 2013). Institutional documentation offers other insights, providing information about processes for registration and submission and guidelines regarding the shape and format of the thesis (e.g. length, structure) as well as roles and responsibilities for the student and the supervisor. This latter issue is discussed in greater detail in the next section.

From this point in the journey onwards, therefore, the supervisor serves as counterpoint in the discussions, gently disabusing the student of their naïve beliefs and guiding them towards developing a conceptual understanding of what the doctorate is and demands. In the case of doctoral studies in HPE, it is at this early stage that the supervisor may be confronted with the need to work with the dual identities of expert clinician/clinician researcher and novice educational researcher that candidates from clinical backgrounds may find conflicting and discomfiting. A firm guiding hand and a supportive stance are needed as the process to induct students into a new and different disciplinary space within which educational research resides starts.

Establishing the supervisory relationship

As alluded to earlier, institutional structures and approaches to doctoral studies can differ between countries, between

institutions and even within institutions. In many contexts, the appointment of a supervisor(s) is documented in some way or another (e.g. in the minutes of faculty board meetings) lending legitimacy and credence to the relationship. Irrespective of the dominant approach, a key milestone in the doctoral journey is when the supervisor-student link is formalised. In this section, we explore some of the current models for doctoral supervision and then look in detail at the roles and responsibilities of the doctoral supervisor in terms of these different models.

Doctoral programmes appeared on the higher education landscape during the nineteenth century (Boud 2009). The early supervisory relationships followed the Oxbridge model according to which each doctoral student has one lead supervisor who may or may not be supported by one or more co-supervisors. For many years, this “hierarchical relationship” has been the most traditional (Caldwell et al. 2012). However, other approaches exist including those that can be categorised as “group” (Samara 2006) and “team” (Nulty et al. 2009) approaches and it is important that supervisors are aware of the implications of these different alternatives. In the group context, several different configurations of students to supervisor(s) can exist, but typically this approach brings together a number of students, who may be at different stages in their research, working with one or more supervisors who at different times will work either with the entire group or with the individual depending on the context and the need. In their discussion of the group approach, Bitzer and Albertyn (2011) emphasise the value of this approach in establishing researcher identity and enabling peer support among the student group. The team approach is based on the principle that different “mentors” can contribute to different aspects of the doctoral research endeavour. A supervisory team typically comprises three to six members with a lead supervisor and then a group of committee members who will have differing levels of engagement with the student depending on the focus of the study and the particular period in the study (e.g. a methodological expert who may be more directly engaged during the planning of the research design). A trend among the growing numbers of international students is to have a least one member of the supervisory team in their home institution. While an obvious question is which model is regarded as most successful, providing an answer is more difficult and there does not appear to be consensus on or evidence about this in the literature. Choices about which model to adopt are still strongly influenced by tradition, entrenched disciplinary differences, and often, simply by what is feasible. In under-resourced contexts or in countries that have a dearth of doctorates across a particular sector, institutions may have less options than in better resourced countries. There is however evidence to support the development of peer networks to encourage doctoral success irrespective of whether these are a component of the actual supervisory process or not (Van Schalkwyk 2014).

Irrespective of the supervisory model that is adopted it is the relationship between student and the supervisor(s) that is our focus and that we wish to make more transparent. Following on the work of Brew, Lee (2008) identified five key approaches to the supervisory relationship namely: functional, enculturation, critical thinking, emancipation and relationship

development, thereby highlighting the extent of the different roles that a supervisor could be called on to fulfil. She suggested that there are tensions inherent in each of these approaches and that supervision was characterised by trying to find a balance between students' dependence and independence, and the professional endeavour that would bring students to completion versus an intrinsic desire to ensure quality.

In their description of the supervisory relationship, however, McPhail and Erwee (2000) found it useful to describe the evolution of a relationship over time as the student moves from needing attention, support and direct feedback to a point where the supervisor stands back to enable the student's “emerging autonomy” to manifest. For them, a key component of the relationship ought to be one of trust that develops as the initial power dominance of the supervisor becomes mediated over time.

Lee's (2008) research covered nine different disciplines and her respondents displayed a range of preferences with regard to the five approaches she described. Her study did not, however, include supervisors from the health sciences. Nonetheless, the preferences resonate with supervisors from HPE. To illustrate what this means for HPE, Table 2 below represents a synthesis of McPhail and Erwee thinking mapped against Lee's five approaches.

The most crucial aspect of this discussion about the different approaches that can be adopted and the different roles that the supervisor can fulfil is that there can be no “one size fits all” approach. The best trait of any supervisor is probably adaptability and being able to draw on all of the strategies listed earlier depending on the student and the stage of the supervisory relationship. In any human relationship, there is always present the ebb and flow of personalities and life experiences that influence the engagement on any given day. While an awareness on the part of the supervisor of their dominant style is key, it is also important to realise the need for the relationship to be both professional and personal (De Kleijn et al. 2012). The relevance of this dualistic nature will become more evident as we continue with this Guide.

What does this discussion about roles mean for supervisory practice? At this early stage, a key focus is for the supervisor to facilitate the student's entry into the scholarly community of HPE, recognising that as they embark on their studies they may struggle to make sense of the dominant thinking and disciplinary discourse that they encounter in their reading of the literature. In his work on communities of practice, Wenger (2000) speaks of “boundary work” where newcomers are challenged to go beyond their comfort zones, pushed to “explore the edge of [their] competence” (Wenger 2000) and question previously held beliefs. Thus, an important role will be that of challenging the student towards developing a scholarly inclination characterised by a critical and questioning disposition. This is a process that will be ongoing throughout the study.

Ultimately, the relationship that exists between student and supervisor is seen to be highly complex, representing high stakes for both parties. It has been argued that for the student, embarking on doctoral studies represents a “complex

Box 4. Getting started — Initial meetings.

This is the period during which the supervisor considers their own suitability for the study and for the student, and will explore options for co-supervision (if this is required). Thus, it is a two-way process about finding the “right” supervisor and actually being the “right” supervisor.

- If the student is not known to a potential supervisor it is useful to ask for a short overview or concept paper in which they can give some indication of their thinking and how they conceptualise their study (keeping in mind that in some contexts students may be “given” a research topic as a result of a research grant and/or joining an existing project).
 - Developing a short concept paper not only requires them to concretise their thoughts, but also enables the supervisor to get a sense of whether or not the planned study will fall in their field of expertise.
 - It also provides some indication of the student’s scientific writing skills
 - Requesting examples of some of the student’s earlier work, for example a Master’s dissertation or previous publications, can also be valuable in determining a student’s prior experience and potential for doctoral studies.
- If the supervisor feels there is the potential for a good “fit,” this is the time for an initial face-to-face (or teleconference) meeting.
 - At this point, the supervisor needs to keep in mind that in the same way that they are wanting to find out about the prospective student and their potential, the student may also use these initial interactions to determine whether they will be able to work with the supervisor.
 - Prospective students can often come across as being uncertain and hesitant at this stage and the skilful supervisor will be the one who can encourage meaningful dialogue.
 - During this first meeting, it is important for the supervisor to state expectations clearly and tell the student that they realise that they are in the process of trying to make the best possible choice for their doctoral journey and that they should feel comfortable about talking to other possible supervisors should they wish.
- Once there is agreement in principle about supervision, a more formal conversation is usually warranted. Ideally, at this session, the supervisor and the student discuss their expectations for the relationship and jointly establish the “rules of the game”. Expectations most often relate to issues around communication such as:
 - how often should meetings take place?
 - who sets up the meeting?
 - what should be prepared prior to a meeting?
 - how are the meetings recorded?

Written documentation of discussions, and a memorandum of agreement can be valuable — either formal (the academic institution may have templates available) or informal (e.g. an email record of the meeting outcomes)

- It is not uncommon for supervisors and/or students to initially be comfortable with the choices made only to find that after a period of working together the relationship is in fact not working.
 - While the proposal is being developed, the study can shift quite substantially from what was initially planned and can move away from the supervisor’s direct area of expertise.
 - People can simply be incompatible.
 - Different academic institutions will have formal and varied requirements; the appointment of the supervisor be ratified by, for example, a postgraduate committee. It can happen that this committee feels that the person approached to fulfil the supervisory role is not the right person because of a lack of expertise in the particular field, insufficient supervisory experience, or because the identified potential supervisor already has too many doctoral candidates.
 - The supervisory relationship ought to be ‘customised’. It should be formed by those in the relationship based on the unique needs and contexts of these role-players at that particular point in time.

investment” (Green 2005; Van Schalkwyk 2014) and this is clearly also true for the supervisor, particularly when they are inexperienced and are themselves being pushed to the ‘edge of their competence’ (Wenger 2000). In addition, the potential for discontent or disagreement over the lengthy period of doctoral studies is obvious. This disagreement often comes about as a result of different perspectives, for example, students feeling that supervisors were not involving them in key decisions and vice versa; supervisors seen to not be up-to-date and offering dubious advice; students having to mediate between supervisors in the case of cosupervision. Interpersonal relationships that are incompatible also contribute to disagreement and even a breakdown in the relationship (Gunnarsson et al. 2013). Many of these potential areas of breakdown in the relationship are not immediately evident, only becoming exposed over time. As we continue our discussion of the doctoral journey, events that can precipitate tension will be highlighted.

From the above, it should be evident that this is not a relationship that should be left to chance and one that ought to have some structure and definition (Halse 2011). In Box 4, there are some practical process recommendations that draw on our own experience and that may be of value.

Phase 2: Engaging the doctorate

Mapping the route

The research proposal is the golden ticket into doctoral studies, but going from ideas, hypotheses and thesis statements to developing a research proposal is often the greatest challenge that the doctoral candidate will experience during the entire journey. It is in this period that students need the most supervisory guidance as they test their thinking, identify a worthwhile research question, develop an (initial) conceptual framework for the study and make decisions about methodology. For many students, however, putting their ideas on paper is daunting as they expose their thinking to scrutiny and critique for possibly the first time. Academic writing is often seen as a challenge, particularly for those who completed a Master’s programme that comprised mostly course work and therefore have limited exposure to producing scholarly texts or who are writing in a second or even third language — a characteristic of the globalisation of the doctorate described earlier. Thus, the development of a coherent research proposal can be regarded as a key moment in the doctoral journey, a “threshold” that needs to be crossed.

The idea of a threshold provides a useful metaphor in a pedagogic context and has been used before. Meyer and

Box 5. Six threshold concepts for postgraduate studies (Kiley & Wisker 2009).

- **Argument:** Being able to develop and maintain an argument by drawing on relevant literature and, later, their own research findings
- **Theorising:** Establishing a theoretical model that emerges from the research
- **Framework:** Being able to explain the theoretical or methodological framework within which the research can be situated
- **Knowledge creation:** Recognising what comprises an (original) contribution to the existing body of knowledge
- **Analysis:** Adopting an approach to one's data that is disciplined and rigorous
- **Paradigm:** Being able to distinguish between different philosophical positions and to recognise which belong together, and which do not.

Land (2005) have argued that in each discipline there are core concepts that are integral to that discipline. Once embraced, these concepts will lead to new understandings and a different way of thinking and being — in essence a learning experience that can be transformative (Mezirow 2003). Subsequent work (Kiley & Wisker 2009) has applied these ideas in the context of postgraduate studies suggesting that fledgling researchers will need to deal with six significant threshold concepts (Box 5).

Kiley and Wisker (2009) argue that the experience of crossing a threshold can be immediate, but for most it takes time as the student wrestles with the doctoral process. Understanding the extent of the intellectual endeavour that the student at to engage with at this time can greatly enhance the supervisory process. For example, a key activity for the student at this point is that of reading the literature as this is fundamental to being able to formulate a sound research question or design a sound study (Bezuidenhout & Van Schalkwyk 2015). They may however initially be confronted by texts that appear inaccessible and alien (Kiley & Wisker 2009; Adendorff 2011). Early conversations with students on what they have read; what they have learnt from their reading; how they interpret what they have read are important. The supervisor's role is to challenge the student to read widely and to move beyond summarising, to critically analysing these readings; to foster a deeper engagement with the theoretical positions that will underpin the study under construction. Guiding the student towards positioning their own thinking within this synthesis of the literature to the point where they are able to feel that they have something worth saying (Van Schalkwyk 2010) and a research question worth answering, will greatly facilitate the student's entry into the disciplinary and academic community of practice.

In HPE research, the student's frame of reference, especially when they are clinicians who have typically been raised in a strongly positivist tradition, is often far removed from what is needed to conduct meaningful educational research (Pugsley et al. 2008). Equally critical, however, is that the supervisor must himself/herself be familiar with the dominant discourses and thinking in the field (Pugsley et al. 2008). Keeping abreast of prevailing trends and emerging scholarship is an ever-growing challenge for the modern-day academic. For the novice supervisor, this can represent a particular barrier to providing sound guidance to the student particularly at this time when decisions around study design and conceptual frameworks are being made.

The nature of the guidance offered to the student at this point represents a fine line between being prescriptive about what should be read and leaving the student to plough aimlessly through the inexhaustible academic works that are available. Another tension relates to the readiness of the

proposal or protocol. There is always more that can be read and considered. It is not easy for the supervisor to know the point at which the work is sufficient for the student to get approval, and embark on their actual project versus holding a student back to further refine the proposal. Of course, these issues are all relative to institutional requirements and processes — consider a system where potential doctoral students register and then have a year to develop their protocol versus at an institution where the approved protocol is a pre-requisite for registration. At some institutions in the United Kingdom, for example, prospective doctoral students register for doctoral studies on arrival after having had their project outline approved. At the end of the first year, they need to present evidence of their progression and defend their work in a viva, before they can progress. These different institutional approaches can present a number of material challenges for the student in terms of access to university resources, costs for provisional registration, opportunities for grant applications, and this can place a particular responsibility on the shoulders of the supervisor working with the student during this period.

The amount of time taken to move from an idea to a completed proposal can vary quite extensively, with six to 12 months being typical. During this period, the student and supervisor may also explore the nature of the envisaged end product of the study. While the traditional thesis or dissertation still appears to be the most common format internationally, there is a growing emphasis on the "PhD by publication" which typically sees the inclusion of four to five published articles that are linked by a common theme and each contribute to an over-arching research question. The articles are bookended by introductory and concluding sections. There is a rationale for adopting this route. Being a scholar means adding to the body of knowledge, most often through publications. Publishing a paper is seen as an authentic professional activity for researchers. Practicing such authentic tasks under the supervision of a more experienced researcher is an educationally meaningful strategy that we use in many training programmes (Young et al. 2014). Thus, the requirement is to write a series of papers around a central theme that can stand up to peer review and academic scrutiny.

The adoption of a particular format, whether by choice or because of particular institutional requirements, has important pedagogic implications for the supervisory process. At the stage of proposal writing, the format will influence the way in which the study will be conceptualised and planned. There are important differences in terms of academic or scientific writing which, in the case of the publication route, need to adhere to journal requirements. This has implications for the doctoral journey foregrounding issues of the student voice that is still being established, and the extent to which the institution, the

Box 6. Checkpoints during the proposal development phase.

- Refinement (research question) and distillation (body of knowledge)
- Development of the research design
- Foundational decisions (e.g. format of doctorate)
- Ethics approval
- Approval of the proposal

supervisor and, indeed, the discipline support the writing process (Lee & Kamler 2008). In addition, the audience is different, as is the way in which the argument is developed. These issues will be revisited in the next section of the Guide.

The period of proposal design represents a key phase in the doctoral journey with key checkpoints along the way (Box 6). While in some instances, it can happen that a student will prepare a proposal for doctoral studies without the assistance of a supervisor, this is not common. More often, it is a period of conceptual development and relationship building. It is also during this period that the supervisor has the first real opportunity to work with the student and determine the extent of their preparedness for advanced studies and identify potential gaps in the student's academic armoury. Today, there are many institutions that require doctoral students to complete a number of courses to prepare them for their studies.

(See, e.g.: https://www.shef.ac.uk/history/current_students/postgraduate/research/skills/ddp/index; <http://www.westminster.ac.uk/research/graduate-school/doctoral-researcher-development-programme>; <https://www.uni-giessen.de/cms/fbz/zentren/ggl/curriculum/part-a>).

Drawing on elements of the “group model” described earlier, there are indications that doctoral studies are moving beyond a model where the supervisor is solely responsible for “raising” the new researcher to one where the responsibility has been taken on board across a wider group of role-players, particularly with regard to more generic pedagogical issues, such as proposal writing, academic writing and project management. Institutional structures, such as postgraduate offices and centres, for doctoral studies are becoming commonplace, even at faculty level.

Notwithstanding these opportunities for development and support, and even with the careful guidance of the supervisor, obtaining approval for the research proposal from the relevant institutional body (e.g. higher degrees committee; departmental or faculty-based evaluation or review panels) and meeting the requirements for ethics submission represent a critical point in the doctoral journey. It is a period of uncertainty for student and supervisor. Feedback received from review committees (where relevant) can often be tough on the student who is often unused to the conventions of peer review, and for the supervisor whose academic reputation is on the line. There is also an ethical dimension here when supervisors have to honestly reflect on whether the prospective student is ready for doctoral studies or whether, now that the study has been designed, it still falls within their area of expertise. Although this ideally should have happened earlier (see Box 4), it can occur that as the process of design has developed, the focus of it has shifted significantly. These are difficult issues for all supervisors to deal with, particularly for

the novice who is still seeking to establish their own credentials in the academic space.

Embarking on the journey

Once the research proposal has been through the required approval processes and the student has been registered, the journey begins in earnest. Wisker et al. (2003) speak of the “*rhythms of research and supervision*” and suggest that these will differ depending on the discipline, the context and the role-players. Nevertheless, there is an overall pattern and process. In this section, we look specifically at the role of the supervisor from this perspective.

At both institutional and national level, the agenda is generally on the output of the doctorate and time to completion (McCulloch et al. 2016). The actual experience of study is often ignored (Mowbray & Halse 2010). Nevertheless, this is the period of empirical activity and of intellectual growth as the student engages with the task of carrying out their planned study. As discussed earlier in this Guide, the doctoral journey is one of identity construction and it is this period in-between designing the study and submitting the thesis that the process of being and becoming occurs such that the doctoral identity is forged.

There are many factors that influence this process (Van Schalkwyk 2014) and while a number of these factors are located within the student and their personal and professional contexts (e.g. demands made by family, financial challenges, career expectations), many can be directly facilitated by the supervisor. As mentioned earlier, it is specifically in terms of enabling the student's legitimate participation in the disciplinary community of practice that comes to the fore at this time (Wenger 2000). Wenger's work on social learning systems is instructive in this instance. He argues that “knowing” in a particular disciplinary community is determined by the extent to which you demonstrate competence within the discipline — thus the extent to which you do as others in the field would do. We demonstrate our belonging to a particular community in three ways: engagement, imagination and alignment (Wenger 2000). As doctoral candidates move towards becoming a recognised member of the disciplinary community they come to engage with others in the field through sharing of ideas and working together on specific projects, using similar symbols; they will increasingly see themselves (imagine) as part of that community; and over time their thinking will become aligned with that of others in the field. Wenger (2000) emphasises that this does not imply uncritical acceptance of the prevailing thinking, but rather points to a “mutual process of coordinating perspectives, interpretations, and actions . . .” (Wenger 2000).

It is here that the supervisor can play a crucial role. The conventions and ways of doing that define a particular discipline are often opaque to the novice (Van Schalkwyk 2010) and supervisors need to consciously make explicit that which is often concealed. This presupposes an interaction between supervisor and student that is characterised by “collaborative problem-solving” and growing collegiality as the student moves from dependency to “interdependency” (Wisker et al. 2003), from engagement on the periphery to recognised participation in the community of practice.

Box 7. Feedback or feed forward?

Less experienced supervisors can be so invested in the thesis that the balance between giving developmental feedback and “doing it for them” can be problematic. Key reminders on feedback to doctoral students include the following:

- Do not forget the positive as well as the negative — everyone needs to know what to keep on doing, not just what is wrong
- Ask the student what they would like feedback on; it may surprise you the aspects they are less sure about and it may indicate particular developmental needs for your student
- Is it possible to give “too much” feedback? Think about how much detail you are giving, and whether you should be giving more direction on future approaches rather than correcting every error
- Patterns of work needing further attention; is this different errors or the same problem just recurring in different pieces of work?
- Think about what type of feedback is needed? For this learner in this situation? Verbal or written? Immediate or delayed after consideration?
- One of the major problems with any feedback is recognition, and perceptions (of its value, relevance to the learner, credibility of the feedback giver... to name a few!)
 - Regard all feedback encounters as a “conversation”
 - Engaging the student with articulating the “feedforward”; what they are now going to do with the feedback is one of the most valuable ways of identifying what the student heard
- Consider if documentation of intended next actions in the light of received feedback would be valuable

In an earlier section, we reflected on the different approaches to doctoral supervision and noted some of the roles of the supervisor, identifying key knowledge and skills that are required to fulfil these roles. Equally critical, however, are the supervisory characteristics and traits that can facilitate the doctoral journey. For example, given the increasing diversity of students and of contexts within which and from which they study, the modern-day doctoral supervisor needs to be adaptable and able to function across a range of different contexts (e.g. local and distance; part-time versus full-time students; sole supervisor versus cosupervision). These may often extend far beyond the focus of the scientific project at hand.

In their work on the dimensions of tertiary teaching, Kane, et al. (2004) emphasise, among others, the importance of interpersonal skills. Successful supervision is often premised on effective communication, particularly when providing feedback to the student on their doctoral work. Feedback is typically the dominant mode of discourse in the supervisory relationship and although such feedback is most often given on written work that is submitted at different phases during the doctoral process, it also has to be offered on the student's reasoning, conceptualisation and interpretation (See also Box 7). This emphasises the need for expertise and subject knowledge on the part of the supervisor — another of Kane, et al.'s “dimensions of tertiary teaching” (2004).

The supervisory relationship will experience ebbs and flows across the years of the doctoral study. Times of intensity will be interspersed with times of plodding, even inaction. Effective supervision is ultimately about being responsive to these shifts, recognising what the student needs at that stage, knowing when to intervene, knowing how to sustain the motivation and interest, and knowing when it is time to stop.

It is during this phase of the doctorate that peer support can be of great value. Creating opportunities for doctoral students to meet and share their work, their experiences and their concerns is very valuable. This can be achieved physically and electronically. Journal groups, regular presentations of scholarly work to others are all good strategies to enhance this peer-community. Since 2011 every AMEE meeting is preceded by the Rogano meeting (*Rogano* was the name of the restaurant where the initiative was born). These meetings are exclusively organised to provide peer exchanges around doctoral

students' work and evidence of their success is reflected in the growing interest attracted by the event.

Phase 3: Completing the doctorate

Reaching the destination

Bringing the journey to an end with the finalisation of the thesis precipitates a final key checkpoint in the doctoral experience. Knowing “how much is enough” is of course an issue for both the supervisor and—as the work is offered for examination—examiners. There are few examples of clear and practical guidelines provided for this high stakes activity (Albertyn et al. 2007). However, taking one's lead from how examiners describe what they are looking for in a thesis provides some guidance. Box 8 provides an overview of examiner perspectives as described by Trafford and Leshem (2009) which generally mirror the threshold concepts described earlier in Box 5.

This brings us back to our focus on doctorateness which Trafford and Leshem (2009) eloquently describe as inherently drawing on “notions of synergy”. This synergy should be evident among the different components of the study, both on the structural level (i.e. research questions; explicit research design; appropriate methodology; identifying the gap in knowledge; inferred research answers) and on the intellectual level (conceptualisation; logic; argumentation). This is all underpinned by a clear understanding of the theory and ultimately contributes to the body of knowledge. When these components are in place, then “enough is enough”. Alongside this, the student as researcher should have developed a depth of insight into the field and their position in it and be able to engage in robust debate outside of the immediate context of the thesis. They should have imbibed the need for rigour in research and argumentation.

As an aside, it needs to be acknowledged that sometimes the point of completion does not get reached. Box 9 provides some insights into the unfinished thesis. This is a no-win situation for all concerned and one that everyone wishes to avoid. Increasingly, institutions require regular (often annual) reporting on progress to be provided by both the student and the supervisor, sometimes in the form of a portfolio of work completed. Use is sometimes made of electronic systems that require reports on formal moments of evaluation and

Box 8. Things examiners look for in the doctoral thesis (Trafford & Leshem 2009).

- Evidence that care has been taken in conducting the research and in documenting it such that every aspect of the study is carefully described, providing detail and depth.
 - A clear and well-supported statement explaining what the gap in knowledge is
 - Research questions that emerge logically from the students' engagement with the literature and the context providing a clear rationale for embarking on the study. And the answers to these research questions
 - The way in which the findings have been conceptualised
 - That the technical tasks of data collection, analysis and interpretation have been carefully addressed; and the appropriate use of statistics where relevant
- In summary: evidence of "an intellectual process rooted in the confident handling of theory" (Trafford & Leshem 2009:308)

Box 9. Time to call it quits – will this thesis ever get finished?.

During the doctoral journey, there may come a point at which supervisor and doctoral student may have to have that "difficult" conversation and make a decision about continuing, suspending (taking a formalised break for a defined time period) or abandoning the thesis.

- Limited progress
 - Not meeting agreed deadlines
 - Discussions during meetings seem to be going over the same ground
- Time passing with little progress in developing a real depth in conceptual thinking.
 - Underpinning theoretical framework not emerging
 - "is this my writing or theirs?" – objectively supervisor is having to undertake substantive rewriting of submitted written work even after several submissions
 - New ideas not emerging from reading, discussions remain on the superficial level and lack critical appraisal of literature
 - Does this student have the skills? Is this right for them?
- Student distracted and prioritising other life areas
 - Part-time working and taking priority (e.g. clinical role)
 - Personal problems, not resolving (e.g. ill health, family commitments)
- Problems with the data
 - Insufficient data collected
 - Too much data and unable to assimilate, or make sense of (despite repeated attempts)
 - Irretrievable gaps/methodology flaws (unforeseen or in – field-working errors)
- Voting "with their feet"
 - Unable to pull together; submitting drafts/rewrites with little evidence of progress
 - Absent/missing meetings

progression is flagged in alerts of concern as a traffic light. This is monitored by a research committee. In the United Kingdom, there is a requirement for formal documentation of a specified number of meetings annually, with documentation of satisfactory progress. In instances where the period of study extends beyond institutional norms, the implementation of support and even remedial actions needs to be documented. This all relates back to the guidelines for regular monitoring and documenting of meetings that was described in Box 4.

New beginnings: A next journey

The successful defence of the doctoral thesis represents the start of a new journey for both the student and the supervisor. Often the relationship that has been established through the years is a lasting one. While internationally doctoral graduates are increasingly following careers outside of academia, this is less true for those who complete advanced studies in HPE. It is therefore not uncommon for new graduates to become colleagues who will look to their former supervisors to facilitate their acceptance in the disciplinary sphere. This often occurs through joint publication and conference attendance. In addition, the supervisor is uniquely positioned to remain alert to possible funding, networking and collaborative opportunities that can be directed towards new graduates to enhance their potential to become recognised researchers in

the field. An important component of this mentoring-type approach relates to the new graduate being exposed to the practice of supervision as a co-supervisor working with their own former supervisor.

At the heart of Kane et al.'s (2004), wheel of tertiary teaching dimensions lies reflective practice. As the doctoral journey comes to a close, there is opportunity for reflection on the part of the supervisor in terms of their own professional development. What have they learnt from the supervisory experience? What might have been done differently? What could have been done better? Finding answers to these reflective questions ought to prompt enhanced practice, and ultimately lead to improved supervisory practices across the sector.

Conclusion

Supervision has been described as "the most rewarding aspect of academic life" (Halse 2011) offering a unique opportunity for academic endeavour that ought to be enriching for both student and supervisor. It is also, however, an uncertain space that defies neat categorisation. Recognising the doctorate as much more than merely conducting a research project and seeing it as a shared educational endeavour is fundamental to understanding the doctoral journey—a journey that is complex

and constantly shifting as the terrain changes over time and the candidate moves from novice to expert. At the end of the journey, it is not only the student who can “fail”. The supervisor can also make mistakes—mistakes which, given the solitary nature of the supervisory relationship will often not be discussed or mediated. Our aim has been to open up opportunities for generative conversations about the practice of doctoral supervision in the hope that these will lead to meaningful learning experiences for both students and supervisors in HPE as the sector continues to grow and diversify.

In this Guide, we have tracked the doctoral experience using the metaphor of a journey, but in doing so have been forcefully reminded of its multifaceted nature and the complexity that characterises the supervisory relationship that is intended to guide it. We are also cognisant of the fact that limited attention has been paid in the Guide to the institutional environment that structures and defines the context within which doctoral supervision must occur. We believe that at institutional level there is a responsibility for creating enabling spaces that will facilitate doctoral success and that this represents a critical site for future enquiry. As mentioned at the start of this Guide, the doctorate is still a relative newcomer to the HPE landscape. There is a need to develop and strengthen supervisory capacity if we are to meet the growing numbers and increasing diversity that characterises the doctorate in HPE, and if we are to take the science of HPE forward.

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References

- Adendorff H. 2011. Strangers in a strange land—on becoming scholars of teaching. *London Rev of Ed* 9(3):305–315.
- Albertyn RM, Kapp CA, Frick BL. 2007. Taking the sting out of evaluation: Rating scales for thesis examination. *SAJHE* 8(21):1207–1221.
- Amundsen C, McAlpine L. 2009. ‘Learning supervision’: Trial by fire. *Innov Ed Teach Int* 46(3):331–342.
- ASSAf. (The Council of the Academy of Science of South Africa) 2010. The PhD study: An evidenced-based study on how to meet the demands for high-level skills in an emerging economy. Available from <http://www.assaf.org.za/wp-content/uploads/2010/10/40696>.
- Barnett R, Di Napoli R. 2007. Changing identities in higher education: Voicing perspectives. Oxford: Routledge.
- Batchelor D, Di Napoli R. 2006. Special Issue: The doctoral journey: Perspectives. *Educate* 6(1):13–24.
- Bezuidenhout J, Van Schalkwyk S. 2015. Developing the research question: setting the course for your research travels. In: Cleland J, Durning S, editors. *Researching Medical Education*. Wiley-Blackwell: Oxford. pp 35–41.
- Bitzer EM, Albertyn RM. 2011. Alternative approaches to postgraduate supervision: A planning tool to facilitate supervisory processes. *SAJHE* 25(5):875–888.
- Boud D, Lee A editors. 2009. *Changing practices of doctoral education*. London: Routledge.
- Brew A, Peseta T. 2004. Changing postgraduate supervision practice: A programme to encourage learning through reflection and feedback. *Innov Ed Teach Int* 41(1):5–22.
- Caldwell PH, Oldmeadow W, Jones CA. 2012. Supervisory needs of research doctoral students in a university teaching hospital setting. *J Paed Child Health* 48(10):907–912.
- Cleland J, Durning S. 2015. *Researching medical education*. London: Wiley Blackwell.
- Cusimano MD, David MA. 1998. A compendium of higher education opportunities in health professions education. *Acad Med* 73(12):1255–1259.
- De Kleijn RA, Mainhard MT, Meijer PC, Pilot A, Brekelmans M. 2012. Master's thesis supervision: Relations between perceptions of the supervisor–student relationship, final grade, perceived supervisor contribution to learning and student satisfaction. *Stud High Ed* 37(8):925–939.
- Entwistle NJ, Peterson ER. 2004. Conceptions of learning and knowledge in higher education: Relationships with study behaviour and influences of learning environments. *Int J Ed Res* 41(6):407–428.
- Eva KW. 2008. The cross-cutting edge: Striving for symbiosis between medical education research and related disciplines. *Med Ed* 42(10):950–951.
- Frick L. 2011. Facilitating creativity in doctoral education: A resource for supervisors. In: Kumar V, Lee A. *Doctoral education in international context*. Serdang: Penerbit Universiti Putra Malaysia. pp 123–137.
- Grant B. 2003. Mapping the pleasures and risks of supervision. *Discourse* 24(2):175–190.
- Green B. 2005. Unfinished business: subjectivity and supervision. *High Ed Res Dev* 24(2):151–163.
- Green B, Lee A. 1995. Theorising postgraduate pedagogy. *Austr Universities Review* 2:1995.
- Gunnarsson R, Jonasson G, Billhult A. 2013. The experience of disagreement between students and supervisors in PhD education: A qualitative study. *BMC Med Ed* 13(1):134.
- Halse C. 2011. ‘Becoming a supervisor’: The impact of doctoral supervision on supervisors' learning. *Stud High Ed* 36(5):557–570.

- Jazvac-Martek M. 2009. Oscillating role identities: the academic experiences of education doctoral students. *Innov EdTeach Int* 46(3):253–264.
- Kane R, Sandretto S, Heath C. 2004. An investigation into excellent tertiary teaching: Emphasising reflective practice. *High Ed* 47(3):283–310.
- Kiley M, Wisker G. 2009. Threshold concepts in research education and evidence of threshold crossing. *High Ed Res Dev* 28(4):431–441.
- Lee A. 2008. How are doctoral students supervised? Concepts of doctoral research supervision. *Stud High Ed* 33(3):267–281.
- Lee A, Kamler B. 2008. Bringing pedagogy to doctoral publishing. *Teach High Ed* 13(5):511–523.
- Manathunga C, Goozée J. 2007. Challenging the dual assumption of the ‘always/already’ autonomous student and effective supervisor. *Teach High Ed* 12(3):309–322.
- McCallin A, Nayar S. 2012. Postgraduate research supervision: A critical review of current practice. *Teach High Ed* 17(1):63–74.
- McCulloch, A Singh, V Van Schalkwyk, S Wisker, G. (2016). Excellence in doctoral supervision: An examination of authoritative sources across four countries in search of performance higher than competence. *Qual High Ed*. [Epub ahead of print]. DOI: 10.1080/13538322.2016.1144904.
- McPhail J, Erwee R. 2000. Developing professional relationships between supervisors and doctoral candidates. *Austr J Management Org Behav* 3(1):76–90.
- Meyer JH, Land R. 2005. Threshold concepts and troublesome knowledge (2): Epistemological considerations and a conceptual framework for teaching and learning. *High Ed* 49(3):373–388.
- Mezirow J. 2003. Transformative learning as discourse. *J Transformative Ed* 1(1):58–63.
- Mowbray S, Halse C. 2010. The purpose of the PhD: Theorising the skills acquired by students. *High Ed Res Dev* 29(6):653–664.
- National Department of Higher Education and Training (NDHET). 2013. The higher education sub-qualifications framework. Notice 1040 of 2012; Government Gazette No. 36003 of 14 December 2012.
- Nulty D, Kiley M, Meyers N. 2009. Promoting and recognising excellence in the supervision of research students: An evidence-based framework. *Assess Eval High Ed* 34(6):693–707.
- Pearson M, Brew A. 2002. Research training and supervision development. *Stud High Ed* 27(2):135–150.
- Pugsley L, Brigley S, Allery L, MacDonald J. 2008. Making a difference: Researching master’s and doctoral research programmes in medical education. *Med Ed* 42(2):157–163.
- Samara A. 2006. Group supervision in graduate education: A process of supervision skill development and text improvement. *High Ed Res Dev* 25(2):115–129.
- Tekian A. 2014. Doctoral programs in health professions education. *Med Teach* 36(1):73–81.
- Tekian A, Artino AR. 2013. AM last page: Master’s degree in health professions education programs. *Acad Med* 88(9):1399.
- Trafford V, Leshem S. 2009. Doctorateness as a threshold concept. *Innov Ed Teach Int* 46(3):305–316.
- Van Schalkwyk S. 2010. When the teacher becomes the student: The acquisition of academic literacy revisited. *Acta Acad: Supplementum* 1:201–222.
- Van Schalkwyk S. 2014. Evolving doctoral identities: Understanding ‘complex investments’. In: Bitzer EM, Albertyn RM, Frick L, Grant B, Kelly F editors. *Pushing boundaries in postgraduate supervision*. Stellenbosch: SUNMedia. pp 215–227.
- Vosniadou S, Skopeliti I. 2014. Conceptual change from the framework theory side of the fence. *Sci & Ed* 23(7):1427–1445.
- Wellington J. 2013. Searching for ‘doctorateness’. *Stud High Ed* 38(10):1490–1503.
- Wenger E. 2000. Communities of practice and social learning systems. *Organization* 7(2):225–246.
- Wisker G, Robinson G, Trafford V, Warnes M, Creighton E. 2003. From supervisory dialogues to successful PhDs: Strategies supporting and enabling the learning conversations of staff and students at postgraduate level. *Teach High Ed* 8(3):383–397.
- Young JQ, Van Merriënboer J, Durning S, Ten Cate O. 2014. Cognitive load theory: Implications for medical education: AMEE guide no. 86. *Med Teach* 36(5):371–384.