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To cite this article: Andrew Loxley & Mark Kearns (2018) Finding a purpose for the doctorate? A view from the supervisors, *Studies in Higher Education*, 43:5, 826-840, DOI: [10.1080/03075079.2018.1438096](https://doi.org/10.1080/03075079.2018.1438096)

To link to this article: <https://doi.org/10.1080/03075079.2018.1438096>



Published online: 12 Apr 2018.



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Finding a purpose for the doctorate? A view from the supervisors

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ABSTRACT

The changing nature of doctoral education over the past three decades has taken on a triadic relationship constructed around expectations-process-purposes and has generated much commentary and critique. The intention of this paper is to focus on the notion of ‘purpose’ from the perspective of doctoral supervisors which we have collated into four themes labelled *knowledge generation*, *recognition*, *positionality* and *instrumentalism*. The themes were generated via the analysis of semi-structured interviews undertaken with 50 doctoral supervisors as part of the SuperProfDoc project investigating their practice.

KEYWORDS

Doctoral purpose; doctoral supervision; interviews

Introduction

Although there is an expansive corpus of literature covering many facets of doctoral education from the perspective of supervisors, we would concur with Akerlind and McAlpine’s (2017) observation that this has largely by-passed the critical and overarching question of what do they see as it’s ‘purpose’? Paradoxically, we know a lot about *how* supervision is undertaken by supervisors in regard to functionality, relationships, processes and, to a slightly lesser extent, pedagogy and curriculum, but there is a lacuna in relation to how they conceptualise purpose. As we will discuss below, the normative reconstruction of doctoral education has been predicated on a number of grounds, but this notwithstanding, the discursive space around ‘purpose’, as opposed to for instance the ‘operational’, seems to have politically and rhetorically been colonised and dominated by policy-makers, statutory and non-statutory regulatory bodies, HEI strategists, organisations such as the OECD, as well as state and non-state research funding agencies and in some instances, professional accreditation bodies. If anything, there is a tendency in the academic literature to be more ‘process’ orientated and anchor or subordinate purpose to exogenous objectives and needs, rather than open it up to major critique and contestation. Whilst there are good reasons for this focus, it does give the impression of premature closure and de-politicisation in regard to the debate around purpose.

Given the magnitude of change that has been occurring within doctoral education, it was useful within the SuperProfDoc project to use the notion of ‘purpose’ as an initial framing device to explore how this effected (or not) supervisors in relation to how they conceptualised and attached meaning to their practice with students.¹ In the context of the project, we operationalised ‘purpose’ as simply meaning that the doctorate is offered and/or undertaken in order to create or produce a singular, or cluster of outcomes. Additionally, we made no presumption as to what these outcomes would be in terms of either utilisation and/or content.²

Setting the context: doctoring the doctorate

As has been discussed by other contributors to this special edition, doctoral education has undergone profound changes over the past three decades (see Blume 1984; Scott et al. 2004; UNESCO 2004; Boud and Tennant 2006; Kehm 2007; Park 2007; EUA 2008; Lee 2008; Boud and Lee 2009; Trafford and Leshem 2009; CGS 2010; Fell, Flint, and Haines 2011; Wellington 2013; Loxley and Seery 2012; Poole 2015; Pratt et al. 2015; Baschung 2016). As it has also been well noted, these changes have been marked by a significant increase in the number of doctoral students and graduates, and shifts in relation to expectations, processes, as well as purpose. This is underpinned by a complex and arboreal narrative, which analytically can be 'distilled' down into four broads, but interconnected (and at times contradictory) discourses, each of which has contributed in varying degrees to reconstructed notions of doctoral education. These we have labelled:

- Human capital and the knowledge economy discourse
- Divergent career pathways discourse
- The institutionalisation discourse
- Purposes and processes discourse

As explanations for the changes in doctoral education, these discourses (which we sketch out below) have been well rehearsed across both the academic and non-academic literature.³ Additionally, we would argue that these discourses largely centre on (a) critiques of the so-called traditional modes of doctoral education and (b) what is perceived to be its questionable utility, as a qualification across a number of dimensions: economic, personal, societal, institutional, epistemological and methodological. Furthermore, and in echoing Cumming's (2010) observation, by far the most significant factor in re-shaping the doctoral landscape is that of national and supra-national policy more so than higher educational institutions (HEIs). If anything, the latter have found themselves and particularly so in the European and Australian contexts, largely following, rather than instigating policy. The USA is quite different in this respect lacking any nationally agreed frameworks or mandates, but nonetheless see themselves as subject to the same problems as the Europeans and proffering similar solutions (see Nerad 2004; CGS 2010; Allum, Kent, and McCarthy 2014). As such the policy context has been a significant factor in broadening out the purpose and role of the doctorate as both a qualification and educational process. With regard to the former, this is exemplified by its evolving relationship with the so-called knowledge economy through crafting an improved as well as more efficacious alignment between graduate attributes and labour market requirements. And for the latter, it is an attempt to create programme content and pedagogical processes which bring coherence, transparency and structure to variegated, opaque and idiosyncratic practices to manage, amongst other things, protracted progression and poor completion rates (see CGS 2010 for a discussion of this in relation to the US context). Though as argued by Denicolo (2016), this is neither recent nor localised phenomena, but one which cuts across geopolitical boundaries in attempts to largely, though not exclusively, create economic positional advantage with doctoral students and graduates being positioned as the 'vanguard' of the knowledge economy (see also Brown 2000).

Human capital and the knowledge economy discourse

The discourse associated with human capital and its relationship with the knowledge economy (though highly contested as to how the two are conjoined, see Giddens 1991; OECD 1998; Beck 2002; Marginson 2009; Fender 2012) is nonetheless one which has been central in terms of macro policy in the re-positioning of the doctorate. Again these connections have been extensively rehearsed within the policy literature emanating from a range of geopolitical settings. For instance, within the European context, the following quote from the European Commission clearly sets out the

role and purpose of the doctorate in realising the European Union's aspirations to become a leading knowledge economy:

The issue of doctoral training has gained considerable importance in recent years. Doctoral training is a primary progenitor of new knowledge, which is crucial to the development of a prosperous and developed society ... Developed economies rely on new knowledge and highly skilled knowledge workers to feed a process of continuous innovation. (EC 2011, 1)

Taking as its starting point the position that labour power is an integral 'factor of production' (Mincer 1958; Becker 1964, 1975; Fender 2012) and significant contributor to value (Marx 1974), the development of human capital as embodied in doctoral graduates is an a priori good. Though we should be mindful that this is not a new phenomenon; as observed by Blume (1984), Simpson (1983) and Neumann and Tan (2011), the PhD (along with HEIs) has occupied a central place in knowledge generation in terms of either attaining and maintaining national prestige and/or commercial or non-commercial advantages. However, as economic globalisation since the mid-1980s has continued to drive the reconstruction of advanced capitalist societies away from a dependency on manufacturing (Harvey 1989, 2011; Lash and Urry 1994), the need for researchers capable of engaging in both knowledge creation and innovation has become a totemic dimension within policy. In this scenario, it is not enough for a graduate to embody knowledge through their possession of institutionalised cultural capital, but be capable of transferring and articulating those skills and knowledge across a range of activities and contexts. It is also a discourse predicated on expansionism. Whilst training and deployment is necessary, increasing the number of researchers is taken as a prerequisite in maintaining or creating a competitive advantage. For example, as measured in terms of researchers per thousand workers, the EU in 2006 at '6' was behind the US (7), Korea (8) and Japan (10); in 2015 this increased to 8, but still lagged behind the US (9), Korea (14) and Japan (10).

A discourse of divergent career pathways

As noted by Denicolo (2016)

what used to be a qualification to serve as entry into the academy has transmogrified into one with a wider remit, one which demonstrates the acquisition of a broad range of researcher skills suitable for transfer to an extensive range of employment. (19)

This is not a particularly new argument (see Blume 1984), but has become more prescient for policy-makers in particular with the increase in graduates and the shifting employment patterns in HE. Surveys undertaken of graduate destinations indicate that approximately 45–50% remain in higher education with the other 50% being employed elsewhere (Nerad et al. 2007; Neumann, Kiley, and Mullins 2008; Vitae 2010b; Neumann and Tan 2011; CGS 2010; Diamond et al. 2014). Though this does vary by discipline, with, for example, lower rates (38%) of graduates in the physical sciences and engineering moving into HE employment (Diamond et al. 2014); in the US, this accounted 13% of engineers (CGS 2010). Whereas 62% and 65% (respectively) of graduates in the arts and humanities and the social sciences were employed in HE (Diamond et al. 2014). However, as noted for instance by Nerad et al. (2007), Raddon and Sung (2008), CGS (2010) and Vitae (2010b), these patterns within HE do change over time and are contingent upon employment and contractual status.

Given the above, it becomes self-evident within this discourse that the doctorate also needs to be conceptualised as a mode of study which can be preparation for a non-academic career or equally importantly, a form of career change or career development. The latter is highly pertinent in relation to the development of professional and work-based doctorates (Scott et al. 2004; Neumann 2005; Metcalfe and Gray 2006; Park 2005, 2007; Fell, Flint, and Haines 2011; Diamond et al. 2014; Fillery-Travis 2014; Mellors-Bourne, Robinson, and Metcalfe 2016). These programmes also presuppose a more mature student profile whose intentions are allied to career enhancement rather than using the doctorate as a career entry route.

However, there is across the policy literature a constant refrain which argues for the need to develop an array of *post*-doctoral career pathways that are not predicated on solely working in

academia (see OECD 1998, 2012, 2016; EUA 2005, 2008; ACOLA 2012, 2016; CGS 2010; Wilson 2012; Edge and Munro 2015). As has been observed by a number of commentators, this line of reasoning has been driven by a combination of the growth in the number of doctoral students and graduates, and the changing structures of HE systems vis-à-vis employment practices and increasingly precarious career progression routes which have altered patterns of 'supply and demand' for graduates (see Boyer 1994; Åkerlind 2005, 2008; Kogan and Teichler 2007; Cantwell 2011; Neumann and Tan 2011; Auriol, Misu, and Freeman 2013; Tiechler, Arimoto, and Cummings 2013; Vitae 2013; McAlpine and Emmioğlu 2015). However, the survey data indicate that this situation is more fluid and nuanced, as well as contingent upon discipline, occupational sector and employment opportunities. It also presumes that HE is the preferred option after graduation; according to Vitae (2010b), 75% of those who worked in a non-HE setting chose to do so as 'it fitted my career plans'.

What makes this debate pertinent from a supervision perspective is that attention has focused not only on where doctoral graduates 'end up' and equivalent concerns about labour market conditions (OECD 2016), but the role the HEI plays in determining (to whatever degree that may be) their trajectory. In turn, this has generated a perceived necessity to embed into doctoral education policy and practices notions of 'employability' and a gamut of skills and attributes which support this (see Roberts 2002). Thus, there is a shifting of responsibility for stimulating and facilitating 'labour market activation' and 'mobility' away from the individual student and onto the institution. This implies that institutions need to be much more cognisant of labour market trends (academic and non-academic) and therefore adjust their own practices accordingly to ensure a smoother fit between these two domains.

The institutionalisation discourse

The third discourse concerns the increase in overt intervention, regulation and institutionalisation of doctoral supervision and research training in particular. This needs to be seen as a discourse which functions at the strategic as well as operational level as it permeates both HEI structures and cultures. As Delamont, Atkinson, and Parry (1997) point out, this foray into doctoral education was merely part of a broader range of macro changes being made to HE more generally. Halse and Mowbray (2011) argue that in the context of the institutionalisation of skills and attributes in doctoral programmes is a parallel preoccupation with the performance, outcomes and returns on public investment in research and hence the need for a variety of auditing and surveillance mechanisms and procedures.

Enders (2004) argues, the role of state policy and associated organisations such as research funding bodies and quality assurance agencies, have and particularly so in the case of the former, gone from facilitating and supporting doctoral education from a distal way via research grants and scholarships, to increasingly interventionist regimes which have involved:

Changed funding regimes and the increased use of accountability mechanisms via KPIs ... [The] developing critical mass in terms of centres of excellence ... The use of competitive funding distributed research money ... One of the consequences of this has been to align doctoral training within so-called centres of excellence. (Enders 2004, 425)

If the use of funding (and its concomitant status) represents one form of disciplinary tool, Clarke and Lunt (2014) argue that regulatory frameworks have become a prominent feature of doctoral education in the definition, construction and maintenance of quality. Axiomatic to these frameworks are attempts to set out descriptors, competencies and outcomes which are combined to construct an ideal type of 'doctorateness'. The development of frameworks such as the Bologna Process to create a homogeneity across programmes and qualifications within the European Higher Education Area, the UK Quality Assurance Agency, the European Qualifications Framework (onto which can be mapped most European countries), the Australian Qualifications Framework, the Irish National Qualifications Framework (QAA 2011) and so on. What this creates is not only a system for regulating qualifications, but more importantly and from not only a European perspective (re. 'Bologna'), a tool to assist graduate mobility. The descriptors and related outcomes become a form of currency in which organisations in different national contexts grant recognition to the graduate by virtue of having

earned a qualification (and irrespective of the conditions under which it was gained) which possess equivalence. For national and supranational organisations such as the EC and the OECD, who have championed the concept of researcher mobility, this is a critical development. In short, the potential impact on doctoral education is one which percolates and permeates its way into practice through creating a tightly structured, predictable, transparent and less ad hoc conditions under which it occurs.

Purposes and processes discourse

This discourse represents one of the most direct and recognisable interventions into HEI policy and practice and can be seen as the crystallisation and instantiation of the other discourses. Following Park (2005, 2007) and Barrie (2004, 2006), we see it as consisting of three interconnected strands: (1) programmatic content, (2) pedagogical process and (3) diversity of programmes type. The argument that the doctorate is too narrow in relation to its learning outcomes is one which has a long genealogy (see Robbins 1963; OECD 1972; Blume 1984; Rudd 1984; Hockey 1991; Clark 1993; Delamont, Atkinson, and Parry 1997; Metcalfe, Thompson, and Green 2002; Costley and Lester 2012). This has led to periodic calls to not only reconstruct the purpose of the doctorate (beyond that of it being a contribution to knowledge), but expand the range and substance of supporting activities such as research training. In relation to programmatic content, there has been a de-centring of the traditional emphasis on the acquisition and development of high level disciplinary and/or interdisciplinary epistemological and methodological expertise. Rather, it places them within a broader cluster of other (and almost) equivalent skills and knowledge domains (e.g. communication, project planning, social networking, co-working, grant proposal writing, critical thinking, entrepreneurialism, etc.). In turn, these are deemed to be essential for any graduate to possess if they (to paraphrase Sartre) survive their post-university abandonment in the world. Hence what is learnt during their doctoral studies are a gamut of skills (and cognate knowledge), which are not only marketable, but also capable of renewal, adaptation and where necessary, replacement. An example of this type of logic is embedded in the UK's Vitae organisation which has created an elaborate 'researcher development framework' comprising four main domains (e.g. 'personal effectiveness'), each subdivided into three specific categories (e.g. 'self-management') and accompanied by detailed descriptors (Vitae 2008, 2010a).

The debate around the expansion in the repertoire of skills also formed part of a wide-ranging critique of the quality and structure of research training more generally. For example, in the UK this was articulated in the Winfield Report (1987), the Harris Report (1996) and the Dearing Report (1997). Following this were the Research Councils *Joint Skills Statement* (2001) and the influential *Roberts' Report* (2002) which clearly set out the range of skills and attributes which should form an integral part of doctoral education. Since Roberts, there has been a concerted attempt by UK-HEIs to develop enhanced skills training with a view to better prepare doctoral graduates for employment in industry and the public sector, as well as in academia. This has been characterised by a requirement for a more structured approach to research training and inculcation of transferable (aka 'employment') skills via entities such as graduate schools or structured PhDs (see Leonard et al. 2006; Hodge 2010; Vitae 2010a; Haynes 2011; Clarke and Lunt 2014; Diamond et al. 2014). However, there remain concerns that approaches to skill development tend to be reductive (Craswell 2007), de-contextualised (Blaj-Ward 2015), overly vague (Attwood 2010) or lacking definition or proper conceptualisation (Gilbert et al. 2007; Mowbray and Halse 2010; McAlpine and Amundsen 2012) as well as having an insufficient evidence base in which to critically evaluate practice.

We also need to be aware of the emergence of the notion of 'graduate attributes' which seem to go beyond the programmatic and become part of an institutional 'mission' to produce a particular type of individual who is the embodiment of these attributes, knowledge and skills. It would be disingenuous to presume that 'skills' and 'attributes' were never part of doctoral education, however, what has occurred over the past two decades is their explicit codification and objectification within a corporate structure. The Vitae framework is a pertinent example of this form of 'social engineering'. As Barrie (2004, 2006) argues, attributes are intended to (1) define what kind of graduate an institution wishes to produce

and (2) inform as well as become embedded in curriculum design, including both formal and non-formal teaching and learning activities. In short, these attributes are intended to be instantiated into all facets of a student's experience and engagement with their institution.

At the supranational level, the European Commission, European Universities Association and European Science Foundation have promoted the necessity for broader skills sets through, for example, the Bologna Process and the 'Salzburg Agreement' (2005). However, there does appear to be significant variations in terms of the priorities given by both governments and individual HEIs in response to the issue (OECD 2012). The Salzburg (2005) declaration recommended that skills training should become an integral part of all doctoral programmes in order to meet 'challenges and needs of the global labour market' and that HEIs needed to assume responsibility for implementing this (EUA 2005, 2014; LERU 2010, 2014; EC 2011). The establishment in 2008 of the Council for Doctorate Education (CDE) by the EUA marked a significant change made across Europe in the delivery of PhD programmes. The general direction of the CDE is towards a structured approach to skills training as evidenced in the EUA 'Salzburg II Recommendations' for improving doctoral education in Europe (EUA 2008).

Finally, the role of the supervisor within the doctoral process (re-envisioned or not) is seen as critical, a view which is reinforced at both supra- and national levels (see for example Boud and Costley 2007; Boud and Lee 2009). Salzburg 1 (2005) 'Principle 5' states that 'supervision is considered a crucial part of doctoral training ... However, conditions of supervision are often not clear and regulated, and they differ from country to country or institution to institution' (5). The question of variability was one which signatory countries needed to address in order to improve quality and consistency.

The project methodology

The data discussed below were generated via 50 semi-structured interviews conducted with doctoral supervisors during 2016. The supervisors represented a range of disciplines (education, nursing, management, law, psychology, natural sciences, business studies, engineering and music) and were drawn from each of the project partners' countries (Ireland, the UK, Italy, the Netherlands and the US). This provided us with a variety of contexts in which to explore their practice. The recruitment of the interviewee was a mixture of random and snowball sampling. The interviews, along with an online survey, formed part of a mixed methods design informed by 'appreciative inquiry' (Cooperrider, Whitney, and Stavros 2008), through which we investigated an array of issues which clustered around 'expectations' and 'processes'. More specifically, this included discussions around influences on their practice, perception of themselves as supervisors, the exogenous (e.g. labour markets, accreditation bodies) and endogenous (effects on their role, the use of pedagogy, conditions for successful supervision as they see it and student attrition and retention). The schedule was developed over a six-month period by four members of the research team, piloted and finally administered in each of the project partners' own countries. The supervisors had a mixture of supervisory experience in terms of programme; some worked exclusively on professional doctorates, others only with PhDs, but the majority ($n = 40$) had supervised students on both types. This provided us with a good array of experiences and practices on which to build the project handbook (Fillery-Travis et al. 2017). All of the interviews, which lasted between 30 and 70 minutes, were recorded and fully transcribed. The resulting narratives were analysed using thematic analysis for opportunities and barriers to learning and how these have been addressed within supervisory practice. These themes have been collated within a practice framework using the meta-model approach of Lane and Corrie (2006) and supplemented by the techniques advocated by Strauss and Corbin (1998) and Miles and Huberman (1994).

What did we find?

The analysis of the data generated in relation to the question 'what do you see as the purpose of the doctorate' led us to construct four themes in which to encapsulate and frame a range of ideas which our participants offered. In summary, these are:

- *Instrumentalism* – relating to the application of new and/or pre-existing knowledge and skills generated by the doctorate which is principally utilised within a field of practice to engender change;
- *Recognition* – the doctorate as (1) a sign of intellectual and/or professional achievement and (2) a marker of credibility in being able to communicate with expertise and authority within and beyond their professional/disciplinary community;
- *Positionality* – the doctorate as a license for either entering into or progressing within a professional field or disciplinary space. Additionally, this will lead to a competitive positional advantage over other non-doctorate holders. Thus, the doctorate takes on both a signalling (possession of desirable or essential attributes) and screening (must have to progress past the initial recruitment stage) function;
- *Knowledge generation* – the doctorate as a process through which new knowledge is created and legitimised within the parameters of the professional field or discipline; this can be either Mode 1 or Mode 2.

Different doctors? Same doctors? – professional doctorates and PhDs

Before discussing the themes in more detail, it is useful to report on what was an unexpected finding in relation to the notion of ‘purpose’. Although we did not explicitly ask participants about any specific type of programme vis-à-vis ‘purpose’, those who were involved in supervising both the professional doctorate (PD) and PhD volunteered comparisons as part of their narratives. What transpired in the analysis were three distinct positions. Firstly, the PD and PhD occupied different ontological, epistemological and methodological spaces. The PD was viewed as a programme which centred on practice and represented a direct and transformative engagement both in and with the world – whether it be nursing, education, engineering and theology. The production of knowledge, whilst not being incidental, was perceived as a vehicle or medium through which practitioners could (or at least attempt) generate change at a number of different levels: structural, systemic, cultural, political and so on. The PhD was conceived purely in terms of its capacity to generate new knowledge, with its value ‘measured’ in relation to the existing corpus of knowledge, whether disciplinary, inter- or transdisciplinary. Its epistemic worth outside of this realm had no real meaning. Therefore, questions of utility or application were seen as irrational and not part of the purpose of the PhD. Secondly, there were a number of participants, who not unsurprisingly, talked in terms of hybridisation; that the PD and the PhD were similar in both process and product. Thirdly, there were a small number of interviewees who argued that the difference lay in the product and not the process. That is, students were expected to develop and demonstrate (at the doctoral level) a range of skills and capabilities (though primarily research focused), but whether the end-product took the form of the traditional tome or an artefact or performance was not relevant.

The following response was typical of those participants who held a hybrid position and saw that it was the focus of the research as being central, rather than the mode of study adopted:

Quite a lot of projects that I see as possibilities are projects that we would be prepared to take on either as a Professional Doctorate or a PhD ... It's also a position where clearly they have identified a problem in the area but they may not know how to deal with it. And therefore it is generally speaking a problem which they have identified as relevant to either their own personal professional practice or their profession as a whole. (Int 23 – Engineering)

Interestingly, one participant who also drew a similar distinction as above made the following observation regarding the challenge of the PD towards the PhD. There was a view that the PD with its primary emphasis on practice and transferability was more aligned with current policy positions than the ‘traditional PhD’ which was being reconstructed to look more like a PD:

And I think we're also working against the metaphysical entrenchment of PhD kind of routes as the gold standard for the production of academic kind of knowledge in some ways. But I think in terms of the kind of structuring

dynamics that come into the practice of what we're doing, a lot of it seems to be unpicking the fairly traditional PhD kinds of ways of doing things. (Int 14 – Business Studies)

However, for those who saw a clear distinction between the PD and PhD, and especially around the knowledge generation-knowledge application bifurcation, the following quote would be typical of this position:

In the PhD doctorate we are providing people who are capable of creating new knowledge ... The doctorate of nursing practice program is really a practice degree so what those students are taught to do is how to gather the knowledge that's been created and then use that to implement evidence based change in systems big and small. (Int 11 – Health Sciences)

A very small number of supervisors ($n = 3$) saw the PhD as purely a scholarly and curiosity-driven activity. One person in particular saw the need for it to be unencumbered by the 'personal' or the 'professional', a position which is contrary to the underpinning philosophy of PDs (Costley 2013) where experience is seen as an essential dimension within the learning process:

I'm really not interested about his/her past. I'm not. When they start embarking that journey with me, the first day onwards, forget about the past. And of course, this [academic] term we'll carry on talking about their industry [prior work experience]; I really don't care ... I care about the literature and the theory ... Where is the literature, in his/her thinking, where is that body of knowledge? Is he/she positioning herself and entire research is based on that body of knowledge? (Int 14 – Social Sciences)

Findings from the themes

Instrumentalism

The notion of 'instrumentalism' was associated with the view that the doctorate was expected to have a pragmatic function akin to Dewey's and Rorty's conceptualisation in contrast to that found in, for example, Weber or Habermas' notion of instrumental rationality or Foucault's calculus. There was an expectation by supervisors that the knowledge which is generated should be transferable by the graduate to other contexts and more specifically, that it should operate as an epistemological intervention both into and through practice which produces positive and beneficial outcomes, however, this might be conceived and evaluated. Although this theme was more prevalent and articulated in more detail when discussed in the context of PDs, participants' responses were mostly couched in terms of 'applied knowledge' in the research which they saw as being functionally linked to professional practice. This was particularly the case for those supervising students involved in providing 'front-line' services such as health professionals and those working in education. In this sense, the graduate becomes the medium through which change is affected in the professional work-space. That knowledge is mainly enacted both through embodiment vis-à-vis their practice and to a lesser extent in the traditional academic codified form such as peer-reviewed journals or monographs:

Clearly for a lot of them as I said, there is a very strong driver in the sense that they want to use their doctoral level work to transform or change for the better their working environments and then I totally support that as well. Because I think at the end of the day the purpose of a doctorate is to make the world a better place. There we are. (Int 16 – Humanities: PD & PhD)

Well, the doctoral qualification that I think – you're better placed for psychotherapy, I don't I know about that. I know more about nursing and social work – is about the development of a research practice that's of value to the practitioner in their everyday environment. Some of them may come into the Academy after they've done it but the vast majority who I know don't. They want it because they believe that their knowledge and understanding that goes with research and notions of development, enhance their understanding of their position as a professional within the organisation which they worked and also enhances practice, and for nursing terms we'd call it client outcome. (Int 35 – Health Sciences: PD)

But this notion of instrumentalism was not just confined to knowledge application, but also extended into developing their research capabilities which can be applied as part of their professional practice:

[It is to make a] contribution to knowledge but also equally, there's another version of that which is a research training so at the end of that research training you produce someone who is capable of doing independent research at that level, later on. (Int 32 – Business Studies: PhD)

In essence, the participant quoted above is referring to the transferability of research skills beyond that of the doctorate to also generate new knowledge within different contexts. What was surprising and given the prominence and dominance in much of the policy discourse of the need to embed transferable skills within programmes, there was little overt discussion across the participants concerning this as being a purpose of the doctorate. Most participants did not articulate any position in regard to the typical skills such as those set out by organisations such as Vitae (2010).⁴ The small number of participants ($n = 5$) who did discuss this area nonetheless offered useful insights into how this connects with their sense of purpose. One participant saw a teleological connection between purpose and professional context and argued that skills should not be overly generic and transferable across a range of contexts, but specific to the profession in question. This of course raises a number of questions concerning the relationship between skill content, professional boundaries and how this is incorporated into doctoral education. However:

There are some skills that are transferred but I think the amount of skill that's transferable to being the school leader, that amount of time put into the research and dissertation could be used to more effect if we worked on leadership skills and other issues. (Int 8 – Education: PD)

Alternatively, the three quotes below suggest that for these supervisors there is a need for a more broader (albeit orthodox) set of generic and transferable skills. They also begin to unpack what constitutes the relationship between programmatic content and purpose vis-à-vis their students' ability to apply a range of skills to their professional practice. The first quote highlights the need to be proficient in cognitive and communication skills, whereas the second quote also refers to these skills, but includes the requirement to develop personal qualities and characteristics:

... (to) also learn how to think, how to work and how to solve research problems. How to analyse problems and how to extract research questions. Those are the transferable skills because you will always have problems to solve. You need to be able to analyse what's the problem? What am I trying to get out of it? What tools do I need to collect data to enable me to come to conclusion. . . And as I said, that's just the first step. Whether you go into R&D in industry, whether you go into academia, those tools will be very valuable and will come with you and is part of your growing up. (Int 33 – Engineering: PhD)

I think it is really important for continuing professional development ... I think you want to do a doctorate because of the kind of skills, transferrable skills it gives you, so project manager and writing, critical thinking, independent research, independent project management, resourcefulness, resilience. (Int 16 – Humanities: PD & PhD)

Lastly, for one participant they placed their emphasis on developing the gamut of skills associated with 'academic literacies':

I'm hugely interested in supporting the development of graduate student writing, academic writing abilities. The process is just so different if students are still struggling writers when they get to this and I guess related to that is sort of people talk about people being struggling thinkers. By that they mean just be able to really figure out how to formulate an argument, how to frame a problem, those kinds of things. (Int 8 – Health Sciences: PD)

Recognition

The theme of recognition is clearly linked to the idea that the doctorate operates at a semiotic level and functions as a sign which denotes and connotes a set of meanings about the qualification in socio-cultural terms. The quotes used below represent a mix of positions and tend largely to be student centred in orientation; that is the meaning of the doctorate is expressed as a part of the graduate's newly acquired identity. The first two quotes are a straightforward articulation of the doctorate as a form of institutional cultural capital and to a large extent, embodied capital as well. The third quote is interesting as the supervisor is setting the parameters around what is or should be recognised:

I think on the professional doctorates you can see that there is a kind of validation at the intellectual level, the professional level but then also the kind of growth and learning at the personal level which I think is then expressed in feelings of confidence and what you are doing is worthwhile. (Int 16 – Humanities: PD & PhD)

I think there must be a level of validation, personal validation. I've got this label, if I've done this thing which is a substantial piece of work, that I get, it's different from I could have just written a book on the topic and self-published it. It is different from that because I have done it in a way that gets me a particular form of credibility and recognition which is university recognised. (Int 15 – Civil Engineering: PhD)

A doctorate in professional practice which is a research doctorate, there's no difficulty. Nobody is saying that they're practising as a clinician at doctorate level. What the qualification is saying is that this person has got understanding and practice of doing research methodology that is related to the real world of practice. (Int 35 – Health Sciences: PD & PhD)

The next two quotes provide a slightly different take on the meaning of recognition. For the first supervisor who works in the area of the arts, the doctorate was seen by her practice community (as opposed to the academic), as having a contradictory affect in terms of recognition being a positive affirmation of a graduate's achievement. The second supervisor was highly circumspect of the notion that the doctorate would immediately denote much in the way of status; this needed to be earned through peer recognition and valorisation of their post-graduation practice.

The PhD inevitably slows them down, it often slows down the process, it certainly slows down their kind of visibility in the profession and could shift in my experience certainly in the arts as practitioners, the PhD is still – there's a nervous or a kind of assumption that you're something else, you can't be an artist if you've got a PhD, somehow, there's still that mentality out there but a lot of artists are kind of shifting that and wanting to come and do PhDs. (Int 40 – Arts: PhD)

[The PhD] It's not a part of the esteem, that comes much later, it's what you do with it, brings you the esteem. Just because you complete a PhD does make you an esteemed researcher. It's what you do with those skills and what other problems you solve with those skills that bring you the esteem. (Int 35 – Engineering: PhD)

Positionality

The use of a doctorate as a vehicle for either entering into or progressing within a professional labour market was identified by a number of participants. This, however, was quite nuanced and not just viewed as a simple situation of the doctorate providing a positional advantage over non-doctorate holders. Firstly, and irrespective of whether it was a PD or PhD, it was recognised that the doctorate had become the entry-level qualification, or indeed license to practice for a post in academia, as either a lecturer or researcher, or specific professions. For example, as outlined by one participant below, a significant, if not the only purpose of the doctorate is that it becomes part of a profession's screening mechanism to evaluate potential practitioners:

I would say that has been something that's been changing with doctoral education because doctoral education is the entry-level degree now in physical therapy. It's the entry-level expectation or requirement even as of this year. I think its 2016 there are no more accredited degree programs that are not at the doctorate physical therapy level. (Int 4 – Health Sciences: PD)

In the case of the doctorate bestowing a positional advantage over other members of the same profession, the following comments were made by two participants. Both refer to changes or more specifically a re-ordering of their own respective professional labour markets and with that, the emergence of differential status value(s) associated within a hierarchy of qualifications. Here, they both highlight the signalling and screening function of the doctorate by virtue of undertaking a particular form of study:

I certainly have seen shifts in the national job market particularly related to nursing ... Now finally we've reached the threshold where we're moving towards having a saturation of the market with BSN nurses which means if you want to move one step up the ladder you better get your MSN which then means if you want to be at the top of the heap you better be thinking about doctoral education (Int 12 – Health Sciences: PD)

Most candidates now see the [doctoral] degree as a credential which is necessary for advancement to executive ranks in public school or private school administration. (Int 11 – Public Management Studies: PD)

However, for one participant, whilst acknowledging the positional use of the doctorate they were nonetheless sceptical of this motive by students:

if that persons just going to get their PhD and go off into the city and become a banker as so many of them do, *then what was the point of it?* So in that sense it's an additional qualification, a requirement that they need for the next stage of their career, and that's their purpose, I suppose. And that does happen quite a lot. (Int 20 – Business: PhD, emphasis added)

Although a comment more to do with socialisation and enculturation of students than positionality per se, the following quote is insightful as the supervisor argues that learning about how academia operates in socio-cultural terms is important as any other cluster of transferable skills that do 'their' signalling work to potential employers. How graduates use this insight into the 'social world of knowledge' to gain employment is of course another question:

They see the human element behind this edifice of the university knowledge system. So as a supervisor they see you at your worst and at your best, they see you as you are. They get to understand the social life of knowledge, that's possibly what you're doing. Implicitly you're teaching them that through your own attitudes to others and what you say about other people's work and what matters, and what's imbued to them in the way you are as a supervisor. But also in the whole range of techniques that we have and they have and increasingly so, it's about learning the game. So they're introduced with a wink to the game. The big game that is higher education, wink, wink. (Int 15 – Civil Engineering: PhD)

Knowledge generation

The final theme that of 'knowledge generation' is qualitatively different from that of instrumentalism as there is no direct connection presumed between what is epistemologically created and what it is used for. The use value of the doctoral product is clearly severed and instead it is the contribution it makes to knowledge vis-à-vis its respective epistemic community which is given prominence:

... the doctorate one is clearly to have a public piece of work that develops and takes forward knowledge and information and understanding of a particular area that wasn't there before. So the purposes of a doctorate is to provide if you like, data and input that feeds into the public space and I think particularly, well with most doctorates actually, there is usually a specific professional or public context in which the doctorate is attempting to make an intervention. (Int 18 – Theology: PD & PhD)

For me it is about having focussed and undivided attention to achieve the highest kind of scholarship in a particular topic. I had one student looking at narrativity in music and so the purpose of that PhD was not to get a job, maybe to become qualified to teach at university but it is more about having three to four years set aside where the only thing that they are meant to be doing is to be working on their art in pursuit of some particular study or philosophical aim with intensity in a way that very few opportunities in life afford (Int 25 – Arts: PhD).

By way of a conclusion

The themes themselves do not necessarily represent anything unexpected, but they do usefully capture the heterogeneity of meanings attached to the purpose of doctoral work by the participants. What was also interesting was the way in which participants choose to answer the question. For some, the doctorate had a single and well-defined purpose, irrespective of whether they were coming from a PD or PhD supervision background. Indeed, the majority of respondents worked on both kinds of programme such as the application of knowledge to a specified field of practice or the generation of new knowledge without any reference to utility. Whereas others saw it as having multiple purposes, which was mediated by the intentions of the student, the professional and educational context in which it was undertaken, and also being applied. This multi-layered

view of the doctorate should not come as any surprise, as purpose, takes on a more negotiated form which is contingent upon a range of structural and dispositional factors. In this sense, supervisors had no difficulty in recognising that the purpose could, for example, be about 'positionality' and 'knowledge generation' and 'transformation'. These were not seen as contiguous purposes, nor contradictory, but 'all of a piece' and formed part of a complex structural and relational dynamic. What was interesting was a lack of discussion around how purpose was not directly shaped by institutional factors and structures. Although this did arise (usually in the context of internal administrative procedures and occasionally 'accreditation'). Mostly we found that the defining and actualisation of 'purpose' in most instances was not anchored in, or referenced back to accreditation or quality assurance bodies or even examination criteria. These normative expectations as to what constitutes doctoral study was largely absent from the interviews, as 'purpose' appeared to be based on the supervisors own disciplinary and professional positionality. Lastly, what was interesting was the lack of reference back to the four discourses in any great measure. It is certainly possible for us to make inferences from their responses in terms of their effect on their sense of purpose, but these were not at the forefront of our samples' views. There was certainly no heroic rush to further the needs of the knowledge economy, though the notion of human capital formation in the sense of educating new researchers capable of either undertaking or applying research was a prominent feature.

Notes

1. The 'SuperProfDoc' project ran from 1 October 2014 to 30 September 2017 and was funded through the Erasmus + programme RA2 and our project number: 2014-1-UK01-KA203-001629.
2. We discuss the findings in relation to the supervision process elsewhere (Loxley and Fillery-Travis, [forthcoming](#)).
3. As part of the systematic literature review for the project, we compiled and categorised 572 separate pieces of literature regarding supervision (Fillery-Travis et al. 2017).
4. Vitae set out the following areas which they suggest should form part of a doctoral education programme: *Knowledge & Intellectual Abilities; Research Governance & Organisation; Engagement, Influence & Impact; Personal Effectiveness*.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

- ACOLA (Australian Council for Graduate Education). 2012. *Career Support for Researchers*. Victoria: ACOLA Secretariat.
- ACOLA (Australian Council for Graduate Education). 2016. *Review of Australia's Research Training System*. Victoria: ACOLA Secretariat.
- Åkerlind, G. 2005. "Postdoctoral Researchers: Roles, Functions and Career Prospects." *Higher Education Research & Development* 24: 21–40.
- Åkerlind, G. 2008. "An Academic Perspective on Research and Being a Researcher: an Integration of the Literature." *Studies in Higher Education* 33: 17–31.
- Akerlind, G., and L. McAlpine. 2017. "Supervising Doctoral Students: Variation in Purpose and Pedagogy." *Studies in Higher Education* 42 (9): 1686–98.
- Allum, J. R., J. D. Kent, and M. T. McCarthy. 2014. *Understanding PhD Career Pathways for Program Improvement: ACGS Report*. Washington, DC: Council of Graduate Schools.
- Attwood, R. 2010. "We Can Work It Out." *Times Higher Education*, no. 1963: 30–35, September 2–8.
- Auriol, L., M. Misu, and R. Freeman. 2013. *Careers of Doctorate Holders: An Analysis of Labour Market and Mobility Indicators*. STI Working Papers 2013/4. Paris: OECD.
- Barrie, S. 2004. "A Research-Based Approach to Generic Graduate Attributes Policy." *Higher Education Research & Development* 23 (3): 261–75.
- Barrie, S. 2006. "Understanding What We Mean by the Generic Attributes of Graduates." *Higher Education* 51: 215–41.
- Baschung, L. 2016. "Identifying, Characterising and Assessing New Practices in Doctoral Education." *European Journal of Education* 51 (4): 522–34.
- Beck, U. 2002. *Individualization: Institutionalized Individualism and its Social and Political Consequences*. London: Sage.

- Becker, G. S. 1964. *Human Capital*. New York: The National Bureau of Economic Research.
- Becker, G. S. 1975. *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. Cambridge, MA: NBER.
- Blaj-Ward, L. 2015. "Skills Versus Pedagogy? Doctoral Research Training in the UK Arts and Humanities." *Higher Education Research & Development* 30: 697–708.
- Blume, S. 1984. "The Development and Current Dilemma of Postgraduate Education." *European Journal of Education* 21: 216–22.
- Boud, D., and C. Costley. 2007. "From Project Supervision to Advising: New Conceptions of the Practice." *Innovations in Education and Teaching International* 44: 119–30.
- Boud, D., and A. Lee. 2009. *Changing Practices of Doctoral Education*. London: Taylor and Francis.
- Boud, D., and M. Tennant. 2006. "Putting Doctoral Education to Work: Challenges to Academic Practice." *Higher Education Research & Development* 25 (3): 293–306.
- Boyer, E. L. 1994. *The Academic Profession: An International Perspective. A Special Report Carnegie Foundation for the Advancement of Teaching*. Washington: Carnegie Foundation.
- Brown, P. 2000. "The Globalisation of Positional Competition." *Sociology* 34 (4): 633–35.
- Cantwell, B. 2011. "Academic In-Sourcing: International Postdoctoral Employment and New Modes of Academic Production." *Journal of Higher Education Policy and Management* 33 (2): 101–14.
- CGS (Council of Graduate Schools). 2010. *The Path Forward: The Future of Graduate Education in the United States*. Washington: Council of Graduate Schools.
- Clark, B. R. 1993. *The Research Foundations of Graduate Education: Germany, Britain, France, United States, Japan*. Berkeley: University of California Press.
- Clarke, G., and I. Lunt. 2014. *International Comparisons in Postgraduate Education: Quality, Access and Employment Outcomes*. London: HEFCE.
- Coperrider, D., D. D. Whitney, and J. M. Stavros. 2008. *The Appreciative Inquiry Handbook: For Leaders of Change*. Williston, VT: Berrett-Koehler.
- Costley, C. 2013. "Evaluation of the Current Status and Knowledge Contributions of Professional Doctorates." *Quality in Higher Education* 19 (1): 7–27.
- Costley, C., and S. Lester. 2012. "Work-Based Doctorates: Professional Extension at the Highest Levels." *Studies in Higher Education* 37 (3): 257–69.
- Craswell, G. 2007. "Deconstructing the Skills Training Debate in Doctoral Education." *Higher Education Research & Development* 26: 377–91.
- Cumming, J. 2010. "Doctoral Enterprise: A Holistic Conception of Evolving Practices and Arrangements." *Studies in Higher Education* 35: 25–39.
- Dearing, R. 1997. *National Committee of Inquiry into Higher Education*. London: HMSO.
- Delamont, S., P. Atkinson, and O. Parry. 1997. "Critical Mass and Doctoral Research: Reflections on the Harris Report." *Studies in Higher Education* 22: 319–31.
- Denicolo. 2016. "International Developments in the Purpose and Process." In *Postgraduate Supervision-Future Foci for the Knowledge Society*, edited by M. Fourie-Malherbe, C. Aitchison, E. Blitzler, and R. Albertyn, 15–33. Stellenbosch: Sun Press.
- Diamond, A., C. Ball, D. Vorley, T. Hughes, R. Moreton, and P. Howe. 2014. *The Impact of Doctoral Careers: Final Report*. Leicester: CFE Research.
- EC (European Commission). 2011. *Report of Mapping Exercise on Doctoral Training in Europe: Towards a Common Approach*. Brussels: European Commission.
- Edge, J., and D. Munro. 2015. *Inside and Outside the Academy: Valuing and Preparing PhDs for Careers*. Ottawa: The Conference Board of Canada.
- Enders, J. 2004. "Higher Education, Internationalisation, and the Nation-State: Recent Developments and Challenges to Governance Theory." *Higher Education*. 47: 361–82.
- EUA (European University Association). 2005. *Report on the Bologna Seminar: Doctoral Programmes for the European Knowledge Society*, Salzburg, 3–5 February 2005. www.eua.be/fileadmin/user_upload/files/EUA1_documents/Salzburg_Report_final.1129817011146.pdf.
- EUA (European University Association). 2008. *Salzburg II Recommendations: European Universities Recommendations since 2005 in Implanting the Salzburg Recommendations*. www.eua.be/Libraries/Publications_homepagelist/Salzburg_II_Recommendations.sflb.ashx.
- EUA (European University Association). 2014. *Doctoral Programmes for the European Knowledge Society*, Brussels. www.eua.be/eua/jsp/en/upload/Doctoral_Programmes_Project_Report.1129278878120.pdf.
- Fell, T., K. Flint, and I. Haines. 2011. *Professional Doctorates in the UK 2011*. Lichfield: UK Council for Graduate Education.
- Fender, V. 2012. *Measuring the UK's Human Capital Stock*. London: Office for National Statistics.
- Fillery-Travis, A. 2014. "The Framework of a Generic DProf Programme – a Reflection on its Design, the Relational Dimension for Candidates and Advisers and the Potential for Knowledge Co-creation." *Studies in Higher Education* 39: 608–20.
- Fillery-Travis, A., N. Pizzolato, L. Robinson, A. Loxley, N. Stel, P. Mans, J. Wijk, et al. 2017. *Insights from Practice*.

- Giddens, A. 1991. *The Consequences of Modernity and Self-identity*. Cambridge: Polity.
- Gilbert, R., J. Balatti, P. Turner, and H. Whitehouse. 2007. "The Generic Skills Debate in Research Higher Degrees." *Higher Education Research and Development* 23: 375–88.
- Halse, C., and S. Mowbray. 2011. "The Impact of the Doctorate." *Studies in Higher Education* 36: 513–25.
- Harris, M. 1996. *Review of Postgraduate Education*. 2 vols. Bristol: Higher Education Funding Council for England.
- Harvey, D. 1989. *The Postmodern Condition*. Profile: London. Blackwell: Oxford.
- Harvey, D. 2011. *The Enigma of Capital and the Crises of Capitalism*. Oxford: Oxford University Press.
- Haynes, K. 2011. *Analysis of University Responses on Career Development and Transferable Skills Training and Changes in 2010/2011*. Report Commissioned by Research Councils UK. Swindon: RCUK.
- Hockey, J. 1991. "The Social Science PhD: A Literature Review." *Studies in Higher Education* 16: 319–32.
- Hodge, A. 2010. *Review of Progress in Implementing the Recommendations of Sir Gareth Roberts, Regarding Employability and Career Development of PhD Students and Research Staff*. London: Research Councils UK.
- Kehm, B. 2007. "The Changing Role of Graduate and Doctoral Education as a Challenge to the Academic Profession: Europe and North America Compared." In *Key Challenges to the Academic Profession*, edited by M. Kogan and U. Teichler, 111–24. Paris: UNESCO Forum on Higher Education.
- Kogan, M., and U. Teichler. 2007. *Key Challenges to the Academic Profession*. Paris: UNESCO Forum on Higher Education Research and Knowledge and the International Centre for Higher Education Research Kassel at the University of Kassel.
- Lane, D., and S. Corrie. 2006. *The Modern Scientist Practitioner*. New York: Routledge.
- Lash, S., and J. Urry. 1994. *Economies of Signs and Space*. London: Sage.
- Lee, A. 2008. "How are Doctoral Students Supervised? Concepts of Doctoral Research Supervision." *Studies in Higher Education*. 33: 267–81.
- Leonard, D., J. Metcalfe, R. Becker, and J. Evans. 2006. *Review of Literature on the Impact of Working Context and Support on the Postgraduate Research Student Learning Experience*. York: Higher Education Academy.
- LERU (League of European Research Universities). 2010. *Training Talented Researchers for Society: Doctoral Studies Beyond*.
- LERU (League of Research Universities). 2014. *Good Practice Elements in Doctoral Training*.
- Loxley, A., and A. Fillery-Travis. Forthcoming. "Engagements, Marriages and Divorces? Supervisors Perspectives on the Working with Doctoral Students."
- Loxley, A., and A. Seery. 2012. "The Role of the Professional Doctorate in Ireland from the Student Perspective." *Studies in Higher Education* 37 (1): 3–17.
- Marginson, S. 2009. "The Knowledge Economy and Higher Education: Rankings and Classifications, Research Metrics and Learning Outcomes Measures as a System for Regulating the Value of Knowledge." *Higher Education Management and Policy* 21 (1): 1–15.
- Marx, K. 1974. *Das Kapital*. London: Lawrence Wishart.
- McAlpine, L., and C. Amundsen. 2012. "Challenging the Taken-for-Granted: how Research Analysis Might Inform Pedagogical Practices and Institutional Policies Related to Doctoral Education." *Studies in Higher Education* 37 (6): 683–94.
- McAlpine, L., and E. Emmioğlu. 2015. "Navigating Careers: Perceptions of Sciences Doctoral Students, Post-Phd Researchers and Pre-Tenure Academics." *Studies in Higher Education* 40 (10): 1770–1785.
- Mellors-Bourne, R., C. Robinson, and J. Metcalfe. 2016. *Provision of Professional Doctorates in English HE Institutions*. Brighton: Careers Research Advisory Centre.
- Metcalfe, A., and A. Gray. 2006. *Employability and Doctoral Research Postgraduates*. York: The Higher Education Academy.
- Metcalfe, J., Q. Thompson, and H. Green. 2002. *Improving Standards Postgraduate Research Degree Programmes: A Report to the Higher Education Funding Councils of England Scotland and Wales*. UK Council for Graduate Education.
- Miles, M., and M. Huberman. 1994. *Qualitative Data Analysis: An Expanded Sourcebook*. London: Sage.
- Mincer, J. 1958. "Investment in Human Capital and Personal Income Distribution." *Journal of Political Economy* 66: 281–302.
- Mowbray, S., and C. Halse. 2010. "The Purpose of the PhD: Theorising the Skills Acquired by Students." *Higher Education Research & Development* 29: 653–64.
- Nerad, M. 2004. "The PhD in the US: Criticisms, Facts, and Remedies." *Higher Education Policy*. 17: 183–99.
- Nerad, M., E. Rudd, E. Morrison, and J. Picciano. 2007. *Social Science PhDs – Five+ Years Out: A National Survey of PhDs in six Fields (Highlights Report)*. Seattle: Centre for Innovation and Research in Graduate Education. University of Washington.
- Neumann, R. 2005. "Doctoral Differences: Professional Doctorates and PhDs Compared." *Journal of Higher Education Policy and Management* 27: 173–88.
- Neumann, R., M. Kiley, and G. Mullins. 2008. "Australian Doctoral Graduates: Where are They Going?." In *Quality in Postgraduate Research in the new Global Environment*, edited by M. Kiley and G. Mullins, 84–89. Conference Proceedings of the 2008 Quality in Postgraduate Research Conference, April 17–18, in Adelaide, South Australia.
- Neumann, R., and K. Tan. 2011. "From PhD to Initial Employment: the Doctorate in a Knowledge Economy." *Studies in Higher Education* 36: 601–14.
- OECD. 1972. *Post-graduate Education: Structure and Policies*. Paris: OECD.
- OECD. 1998. *Human Capital and Investment: An International Comparison*. Paris: OECD.

- OECD. 2012. *Transferable Skills Training for Researchers: Supporting Career Development and Research*. Paris: OECD.
- OECD. 2016. *Education at a Glance*. Paris: OECD.
- Park, C. 2005. "New Variant PhD: The Changing Nature of the Doctorate in the UK." *Journal of Higher Education Policy and Management* 27: 189–207.
- Park, C. 2007. *Redefining the Doctorate*. York: Higher Education Academy.
- Poole, B. 2015. "The Rather Elusive Concept of 'Doctorateness': A Reaction to Wellington." *Studies in Higher Education* 40 (9): 1507–22.
- Pratt, N., M. Tedder, R. Boyask, and P. Kelly. 2015. "Pedagogic Relations and Professional Change: A Sociocultural Analysis of Students' Learning in a Professional Doctorate." *Studies in Higher Education* 40: 43–59.
- QQA (Quality Assurance Agency for Higher Education). 2011. *Doctoral Degree Characteristic*. London: QAA.
- Raddon, A., and J. Sung. 2008. *The Career Choices and Impact of PhD Graduates in the UK: A Synthesis Review: Report Prepared for the Economic and Social Research Council (ESRC)*. Leicester: Centre for Labour Market Studies (CLMS), University of Leicester.
- Robbins, L. C. 1963. *Higher Education Report of the Committee Appointed by the Prime Minister under the Chairmanship of Lord Robbins*. London: HMSO.
- Roberts, G. 2002. *SET for Success: The Supply of People with Science, Engineering and Technology Skills*. Roberts Review. London: Department of Trade and Industry and Department of Education and Skills.
- Rudd, E. 1984. "Research into Postgraduate Education." *Higher Education Research and Development* 3: 109–120.
- Scott, D., A. Brown, I. Lunt, and L. Thorne. 2004. *Professional Doctorates: Integrating Professional and Academic Knowledge*. Maidenhead: Open University Press.
- Simpson, R. 1983. *How the PhD Came to Britain: A Century of Struggle for Postgraduate Education*. Guildford: Society for Research into Higher Education.
- Strauss, A., and J. Corbin. 1998. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. London: Sage.
- Tiechler, U., A. Arimoto, and W. Cummings. 2013. *The Changing Academic Profession Major Findings of a Comparative Survey*. Dordrecht: Springer.
- Trafford, V., and S. Leshem. 2009. "Doctorateness as a Threshold Concept." *Innovations in Education and Teaching International* 46: 305–16.
- UNESCO. 2004. *Doctoral Studies and Qualifications in Europe and the United States: Status and Prospects*. Paris: UNESCO.
- Vitae. 2008. *The Rugby Team Impact Framework*. Derby: CRAC.
- Vitae. 2010a. *Researcher Development Framework*. Derby: CRAC. Accessed 27 October 2011. www.vitae.ac.uk/CMS/files/upload/Vitae_Researcher_Development_Framework.pdf.
- Vitae. 2010b. *What do Researchers Do? Doctoral Graduate Destinations and Impact Three Years on*. London: The Careers Research and Advisory Centre (CRAC).
- Vitae. 2013. *HR Strategies for Researchers: A review of the HR Excellence in Research Award Implementation Activities across Europe*. Derby: The Careers Research and Advisory Centre.
- Wellington, J. 2013. "Searching for 'Doctorateness'." *Studies in Higher Education* 38: 1490–03.
- Wilson, T. 2012. *A Review of Business–University Collaboration*. London: Department for Business Innovation & Skills.
- Winfield, G. 1987. *The Social Science PhD*. 2 vols. London: Economic and Social Research Council.