Doctoral Education: A Review of the Literature Monitoring the Doctoral Student Experience in Selected OECD Countries (Mainly UK)

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Abstract In 2006, the Higher Education Academy (HEA) published a review document which identified a need for research on how postgraduate researchers experience studying for a doctorate. This review sought evidence of such research development in the intervening years. Following a brief exploration of the historical context that led to the writing of HEA document, an overview of its findings is presented as a prelude to an analysis and synopsis of the publications that address the key issues identified. One of the main conclusions is that, in addition to those of other key stakeholders (including government, the Research and Funding Councils, and deans and supervisors in universities), a stronger student voice has been provided by a number of the new studies on postgraduate education. However, the number of studies carried out in the specific area of doctoral research student experience is rather underwhelming, even unsatisfactory in relation to fulfilling the needs of postgraduate education in a context in which governments have begun to see research as a main driver of the economy. This paper will recognise this in the methodology and summary of recommendations as well as noting further research gaps in the current post 2006 literature on doctoral student experience; celebrate those contributions currently being made by doctoral students themselves to this enquiry field; and make some recommendations for further relevant enquiry.

Keywords Doctoral experience · Doctoral student experience · PhD/PGR/postgraduate student experience · Research student experience · Doctoral education

Introduction

Historical Context

Until the 1990s, information about the doctoral student experience was mainly to be found in apocryphal stories told at conferences and in student unions or published as letters to the Higher Education press. By and large, such stories told tales of neglect and trauma, some of which served a purpose of reminding the current students that things could indeed be worse while others urged them to dedication to their research lest they face the chastening experience of an uncomfortable, perhaps even unsuccessful viva voce. At that time few, if any, stories proliferated about the joy of doctoral research though many, including one of this paper's authors, found the process stimulating and uplifting, albeit challenging.

Until then too, research into higher education and consequently publications about that sector followed the interests of funding from government bodies which was predominantly focussed on undergraduate education in both European and in English speaking countries. However, during the 1980s within the UK, the Society for Research in Higher Education (SRHE) Academic Staff Development Group began to develop a passion for improving research supervision and methods training (an example publication is [8]) while in Australia a similar fervour had already taken hold across the sector (an example publication is [24]). In 1992, Salmon [30], a

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supervisor, published a compilation of ten research students' experiences, saying in her introduction:

Becoming a PhD student means entering a peculiarly complex and private situation: it is a world about which few people have spoken [30, p. 1].

In 1994, Denicolo and Pope [5] contributed a UK perspective based on Action Research with their doctoral supervisees about their journey towards achieving a PhD to an Australian book seeking to improve the quality of postgraduate education. By then, no longer a neglected species, postgraduate researchers had come to the attention of governments resulting in a proliferation of reviews, and advisory, consultation, and policy documents and codes of practice. Those which impacted particularly on postgraduate researchers in the UK are exemplified in Box 1 (details about each of which can be found on the internet) to illustrate the plethora of high level interest in postgraduate research from the 1990s. A similar flurry of reports and legislation can be found in other OECD countries.

Box 1 An overview of reports and policy documents impacting on UK postgraduate education 1987–2012

- 1987 Winfield Report Completion rates and studentships
- 1996 Harris Report Review of PG education
- 1999 QAA Code of Practice, Section 1; reviewed in 2004
- 1999^a Bologna Declaration plus annual revisions and additions
- 2001 and 2008 QAA Framework for HE qualifications revised
- 2001 RCUK Joint Statement (JSS)
- 2002 Roberts Report *Set for Success*
- 2003 HEFCE Improving standards in PG Res degree programmes
- 2003 DES Investing in Innovation
- 2004^a Dublin Descriptors
- 2005^a Salzburg Principles
- 2005^a European Charter for Researchers and Code of Practice
- 2006 Leitch Review—raise achievement in all levels of skills
- 2006 Warry Report The UK's Competitive Advantage
- 2008 UUK Quality and standards in UK universities
- 2009 Thrift Research Careers in the UK
- 2009 Wellings Universities' management of IP/economy
- 2009 DBIS Higher Ambitions
- 2010 DBIS Review of PG education
- 2011^a Saltzberg II
- 2011 QAA Doctoral Degree Characteristics
- 2012 QAA Review of Section 1 Code of Practice for Research Degrees
- 2012 Postgraduate Education—an independent enquiry by the Higher Education Commission

^a European

This growth in interest in that particular sector emerged alongside what became known as the 'massification of higher education' when an increase in undergraduate numbers and diversity began to be mirrored at the postgraduate coursework-based and research levels while the value of excellent research to the economy of the UK and other European countries was first recognised and then emphasised as global competition in the research and doctoral degree arena accelerated. In 2005, the Higher Education Academy (HEA) commissioned a review on the impact of working context and support on the postgraduate research student learning experience which was then published in the following year [20]. It is on the general insights provided by that review that this current article is based. These insights are presented following a summary of the research approach adopted for this subsequent foray into the literature on the doctoral student experience and a brief description as background of the international doctoral education scene.

Research Approach

The literature review described below demonstrates our understanding and critical analysis of the theme of doctoral experience in publications in OECD countries, particularly in the UK after 2006. The investigation relates to the previous existing research cited above and attempts to contribute to this field by exploring which of the identified gaps in research have been filled and which remain, building on the current knowledge. A key word/phrase approach was chosen as the main method to collect relevant publications, starting with a broad collection about research students and then narrowing it down to the focus on research student experience. The key phrases that were used for the final sift were: doctoral/doctoral experience and PhD/PGR/Postgraduate student experience, since these various terms have been used to identify this particular student group at different times and by different organisations. They were entered in a number of mainstream databases and e-journals (Reading University Athens online database) and into Google Scholar search engine. In addition, a cascade search continued using reference lists in articles and books already identified as relevant to the topic. The selected publications consist of UK, Australian, USA, New Zealand and European studies. In addition to addressing the content of relevant publications, providing summaries of those most germane to the review below, we also took some cognisance of methodological mode described in those publications. Further, a brief analysis was made of publications available within the year 2012 as provided in the SRHE publication: Research into Higher Education Abstracts. This publication undertakes a regular survey of international periodicals to present abstracts relevant to the theory and practice of higher education along with

a key word subject index. This provides an indication of current emphases in research relevant to this review.

General Insights from Research and Literature Before 2006

Research in the UK

Since the Winfield report in 1987, a number of organisations have emerged concerns with higher education and with postgraduate education in particular: the UK Council for Graduate Education (UKCGE) was founded in 1994; the HEA was founded in May 2004, from a merger of the Institute for Learning and Teaching in Higher Education (ILTHE), the Learning and Teaching Support Network (LTSN), and the TQEF (HEFCE) National Co-ordination Team (INNOVATIONS); Vitae, now promoting the development of doctoral researchers and research staff, arose in 2007 from the UK GRAD Programme, established in 2003 and run by the Career Development Organisation (CRAC) and funded by the Research Councils UK, engaged with all those with an interest in developing postgraduate researchers' skills development.

All of these organisations, alongside the funding councils and SRHE, have generated intellectual debate, spawned a wide range of studies related to doctoral education, and supported national surveys of issues related to postgraduate research (for example: [6, 33, 34, 39, 40]). The main emphasis seemed to be research education, training, methods, generic and transferable skills, supervision and timely submission/ completion of the thesis.

However, attention was beginning to be paid to the diversity of students engaged in postgraduate study and some of them took an opportunity to have their say in reflective accounts about their own experience of part-time study in a publication edited by Greenfield [9] and through their contributions to a symposium (UKCGE 2011) co-hosted by the British Library (BL), UKCGE, Vitae and the National Union of Students (NUS) entitled: Conversations about the doctoral experience (www.ukcge.ac.uk/pdf/PostgraduateResearcherSymposium12.pdf).

Research in Australia

In Australia, a biennial conference on quality in postgraduate research has been organised since 1994 (QPR). At the beginning, many presentations and papers addressed supervisory relationships, then student support and teaching of skills, e.g. library research skills. Next, there was a move towards investigating supervision as pedagogy. Alongside this, growing public policy oversight led to

debate about the selection, retention and timely completion of students and quality assurance and enhancement issues. Later, transferable skills development and students as knowledge workers in a knowledge economy seem to be the most widespread concern discussed, since the doctorate in Australia and New Zealand, as in the UK, became increasingly oriented towards developing future researchers rather than simply producing original contributions to knowledge.

Research in the USA

In the USA the emphasis has been placed differently as most PhD programmes offer a coursework component in addition to standard research. Even though there are no national policies regarding research, the Council of Graduate Schools (CGS) provides opportunities to communicate, enable comparisons and share good practice. Generally, research has been driven by trust funds directed at action-based research, in which funding is used to support and evaluate changes in institutional policies and practices. The Carnegie Foundation (carnegiefoundation.org) funded in 2001 an *Initiative on the Doctorate* with a departmental-disciplinary focus on preparing students to be 'stewards of the discipline'. The *Preparing Future Faculty* project (PFF), launched in 2003 and funded by the Pew Charitable Trusts, the National Science Foundation and the Atlantic Philanthropies, was directed at preparing doctoral students to be better teachers, particularly addressing the value of providing opportunities for them to experience life at institutions other than their own. At the same time, the Centre for Institutional Research on Graduate Education has undertaken studies in the natural sciences, examining post-graduation employment, for example. Similarly, a group of international researchers examining doctoral education has established itself and meets annually at the American Educational Research Association (AERA).

Summary of the HEA Review: Leonard et al. [20]

The Leonard 2006 publication used a systematic review methodology to produce a general map of the empirical literature (that is, research based and focussed directly on postgraduate research students) on the experiences of doctoral research students in the UK, followed by an in-depth analysis of studies focussing particularly on the viva. For the purposes of this article, we will concentrate on the former, a map which included 120 UK studies that had been published since 1985.

The findings from that main review were summarised in the report (pp. 4–5) as follows:

- The majority of studies focused on the PhD, or the PhD together with other doctorates but without exploring the differences between them.
- Research on the doctorate has usually noted the disciplinary area(s), but tended to focus disproportionately on the social sciences and (especially) Education.
- All 120 studies included students studying in universities, but a few also included research students outside HEIs.
- The majority of studies have little information on the mode of study, i.e. whether full or part-time, how students were funded or whether the mode of study was face-to-face or distance learning.
- Details of the gender of students were given in the majority of studies, but not age 'race', ethnicity, social class or disability, and very little analysis was carried out comparing students across these attributes.
- Just over half of the studies focused on the working/studying context in terms of institutional provision but there is no systematic comparison across institutions, or between areas of the UK.
- One-third of the studies focussed on pedagogy, the majority of these concerned supervision.
- Peer support was a focus of one-third of the studies.
- The viva and other forms of assessment was a focus in a quarter of the studies.
- One-third of the studies were concerned with outcomes, such as completion times and rates, and employment patterns, but there was little systematic information on causes of drop out.
- The majority of the studies were not based on any discernible theoretical framework, and the majority presented mainly qualitative data.
- Generally, there has been very little research done on the students' perspective and giving students' views of the doctoral experience.

Leonard et al. also made recommendations, some of which we include here as a basis for comparison with what ensued from 2006 onwards.

Recommendations: Policy and Practice

- This [2006] review should be the start of an on-going database of the literature relating to doctoral education for the use of researchers in this field and policymakers.
- The current report should be reworked into forms appropriate for different audiences, organisations representing postgraduate students, staff supporting doctoral researchers (PVCs, Directors/Deans of Graduate Schools and supervisors) and researchers with an interest in doctoral studies.

Approaches and Methods

The most common method used to explore the PhD student experience since 2006 has been interviews [1, 13, 19, 21, 23, 26, 31, 36, 37]. Other methods included questionnaires [7, 10, 27, 41], focus groups [13, 41], workshops [41], letters [36], supervisory dialogues [41] and logs [12, 17]. In Jazvac-Martek et al. [17] research, data were collected through multiple methods: in situ progress logs (both open-ended and multiple-choice items) collected from PhD students monthly over a two-and-a-half year period, recorded discussions between students and supervisors, electronic surveys, interviews and focus groups. The logs enabled students to capture concurrently their day-to-day activities, interactions, challenges and difficulties-practices that when combined together, influence the expansion of agency and academic identities. The analysis draws from the nearly 300 collected logs to create a sense of the richness and complexity of everyday doctoral experience across the participants rather than concentrating on variations between individuals [16].

Of the abstracts in the SRHE publication in 2012, those declaring themselves to be based on quantitative methods numbered 12 while those using a survey were 39 in number, and 17 included use of questionnaires. There are overlaps in these categories as there is in those noting that they used qualitative methods (28), case study (55) and interviews (54), while these figures may subsume some using mixed methods. Nevertheless, the balance remains firmly in the interpretative paradigm of research methods. This provides rich in-depth data about examples of student experience but does little to address the frequency or spread of particular examples of student experience. The more recently devised HEA survey addressed below does produce mainly quantitative data based on questions followed by a range of choices, although it does provide for some unpublished qualitative feedback in response to open-ended questions for the benefit of host institutions.

The HEA runs, annually since 2007, a survey on a voluntary basis across institutions in the UK which seeks to map the research students' experience: the Postgraduates Research Experience Survey PRES. PRES is a unique service offered by the HEA to all higher education providers. The survey collects feedback from current postgraduate research students in a systematic and user-friendly way. Results are anonymous, allowing comparison against the sector and within benchmarking clubs, while ensuring that they are used for internal enhancement. Each institution receives confidential copy of its own results while a collation of results is publically available as an executive summary. Then, universities can check correlations between answers and disciplines. The latest available as we write refers to the state of affairs in 2011 [28]. PRES 2013 took

place in 122 institutions and closed on 16 May. The next UK-wide survey will take place in spring 2015, but the survey is also available for purchase by higher education providers internationally for use at any time.

An overarching finding is that the increasing positive trend continues with 86 % of respondents declaring that their overall experience of their research programme met or exceeded their expectations compared to 81 % in 2007. Since this survey does not seek specific information on what those expectations were, nor does it publish statistics related to how many of the total student population the respondents represent, there are reasons to be cheerful, but not overwhelmingly so.

Figures are provided under a large range of categories from, *inter alia*, supervision through infrastructure, roles and responsibilities, motivations and anticipated career, with varying degrees of satisfaction expressed within categories. Such statistics, though indicative of general improvement in provision and context for doctoral researchers, mask the variation of experience from dire to sublime that individual students' encounter. It is opportunities to eliminate the former and enhance the middle ground that we should be seeking.

Generic Changes Observed in Post 2006 Literature Reviewed with Direct References to Gaps Identified in Leonard et al. report [20]

Results (most common themes in post 2006 literature)

- the students' accounts have been foregrounded or the perspectives of both have been included and/or compared
- little enquiry into the differences in daily events and practices while doing a PhD
- a large number of "how-to" books, institutional workshops, and advice articles in the journals of scholarly societies are aimed at either the student or supervisor around the theme of improving aspects of this relationship
- is not only social science and education contexts that have been researched but also other disciplinary fields such as science and interdisciplinary areas in general
- the area of internationalisation and the experience of international students has been researched thoroughly
- impact of race, gender, fatigue, stress and connections made between bodies and doctoral writing, thinking, age as well as the spaces in which students live and work, on students' experience

Content

From the post 2006 literature review, one of the visible changes relates to research on the students' perspectives on the doctoral experience. Rather than their supervisors'

points of view of the PhD journey, the students' accounts have been foregrounded or the perspectives of both have been included and/or compared [1, 7, 10, 12, 13, 19, 21, 26, 31, 37, 41].

It would also appear that there exists little enquiry into the differences in daily events and practices while doing a PhD; thus, a major recommendation across the earlier work is a call for more research into the specific experiences of doctoral students. Jazvak-Martek et al. [17] reply to this call and determine that accessing student experiences at a deeper level can offer a better contextualization of inherent processes that support and/or hinder movement towards degree completion and student satisfaction. In documenting everyday experiences, they employed a longitudinal lens to place particular focus on the multiple and diverse activities doctoral students engage in, daily and cumulatively over time. Their work particularly highlights students' negotiated agency, a feature of doctoral experience emerging from a number of different studies in their programme. Here, student agency refers to empowering students through curriculum approaches that engage them, are respectful of and seek their opinions, give them opportunities to feel connected to academic life and promote positive and caring relationships between all members of the academic community. This relates to the previously cited Elton and Pope [8] call for greater collegiality, sadly articulated more than 20 years earlier but as yet clearly not commonly accepted practice. Student agency also promotes wellbeing, relates to real-life experiences and empowers students via safe and supportive programme of studies.

Throughout the chapter, they describe how student agency emerges strongly in negotiating with others in order to achieve intentions, with these negotiations often accompanied by ranges of emotions, from positive to negative (referring also to [15, 22]). Experiences that are connected to negative emotions may be implicated in reasons for early departure, or when positive, may act as stimuli underlying perseverance and sustained efforts and resilience [16]. In their study, Jazvec-Martek et al. [17] discover how negotiated agency is expressed in daily (and often mundane) activities and exchanges. The cumulative experience of students negotiating their intentions in activities and interactions, and in combating problems contributes to the difficult process of emerging an academic identity and establishing oneself as an educator.

The authors note positive interactions with others and highlight student engagement with a number of individuals in miscellaneous ways that moves beyond the classical relationship with the supervisor. These "other" interactions are often not known by the supervisor, likely unacknowledged, and are not designed or necessarily perceived as activities that aid progress. However, as their findings

indicate, these interactions can have an impact on the sense of forward movement and of learning as a possible by-product. According to the research, the students reported engaging with family and friends, peers and supervisors as resources on a regular basis and cited these groups as “most important” for diverse reasons. This finding raises questions about the assumed centrality and singularity of the supervisory relationship. While the supervisory relationship is important, their results suggest that students are actively cultivating many other significant relationships beyond the supervisor. Nevertheless, neglect by the supervisor can have detrimental results.

A large number of “how-to” books, institutional workshops and advice articles in the journals of scholarly societies are aimed at either the student or supervisor around the theme of improving aspects of this relationship. Jazvac-Martek et al. [17] argue that it is also crucial to start focusing on cultivating student-negotiated agency. Their findings show students as showing agency in looking for interactions that positively impact their sense of progress.

Overall, Jazvac-Martek et al. [17] suggest that while the doctoral journey is often characterized as one from dependence to independence (citing [32]), they are not sure this is the most suitable description. In the academic world today, there are increasing calls for knowledge creation to be collaborative [11] and reports demonstrating a growing international pattern of co-publication in nearly all fields. Thus, they believe supporting doctoral students in developing their ability to negotiate intentions and extend and maintain a network of relationships may serve them better in their academic careers than complete independence. This had been noted also in the Vitae Researcher Development Framework www.vitae.ac.uk/rdf (a matrix compendium of attributes derived from interviews with experienced researchers and refined through considerable consultation across the sector) which emphasises inter alia networking, collegiality, and team working.

Another observation is that it is not only social science and education contexts that have been researched but also other disciplinary fields such as science and interdisciplinary areas in general [1, 7, 12, 13, 19, 21, 26, 27, 29, 31, 37, 38]. Jazvac-Martek et al. [17] research of doctoral experience included the collection of data from more than 40 doctoral students situated in two faculties of Education, a diverse field since participants were in programs that are quite distinct and range from those that are highly structured with required course work to others that are focused primarily on independent completion of the PhD dissertation research (Counselling Psychology, Educational Psychology, Library, and Information Sciences, Curriculum Studies, Learning Sciences and subject-specific programs such as Mathematics Education).

The most visible difference has been noticed in the amount of research carried out in the area of internationalisation and the experience of international students [18, 23, 35–37, 41], arguably the area which was seldom researched before 2006 as noted in the thesis by Carenas [3] who studied the impact of a British education on international students’ identities, and in the introduction to her 2007 update of the SRHE Guide *Supervising International Research Students* originally published in 1997 by Okorochoa, based on her own doctoral study [25]. The internationalisation of higher education tends to be theorised in the literature at the organisational, strategic level and/or tends to focus on the growing numbers of ‘international students’; there are very few comprehensive investigations of the postgraduate student experience, especially interactions between international students and academics [2].

Most of research carried out in this area compares the experiences of students from one particular culture with those of another, or offers an assessment of internationalisation strategies developed by institutions. Such research is appreciated but it disregards the complexities of interactions between international students and home students and international students and academics from many different cultures. As the majority of studies are neither supported by stories from the field, nor informed by accounts of the experience of practitioners dealing with students in various multicultural landscapes, there is a strong need for cultural sensitivity in pedagogical approaches. Lecturers and students often assume that intercultural learning happens automatically—mistakenly, it is often something taken for granted as occurring without effort being made by learners and teachers to achieve such a process. To address this issue, HEA offers a long list of interesting online publications concerned with supporting integration of both international and home students. Additionally, the most recent book edited by Ryan [29] illustrates a wide range of examples from around the world which brings together contemporary work and thinking in the areas of cross-cultural teaching and internationalisation of curriculum. There is also a considerable amount of research in the area from Australia [13, 26, 27] and Scandinavian universities: Norway, Finland and Sweden [19, 21, 31].

Existing research on doctoral education seems to emphasise levels of satisfaction, the difficulties students face and variations according to demographic variables. However, pre-2006 research, with the exception of Iantaffi [14] whose research focussed on disabled female students, very often lacked information on students’ gender, age, ‘race’, ethnicity, social class or disability. Hopwood and Paulson [12] address these issues in their article in which they highlight that the physiological dimensions of familiar issues, including race, gender, fatigue, and stress, and

connections made between physical dimensions and doctoral writing, thinking, age as well as the spaces in which students live and work, do influence students' experience. The themes provide new ways of understanding what it means to be and learn as a doctoral student. Taking bodies into account offers a fuller picture of how doctoral work is accomplished and the tolls this exerts on students. In this study, an analysis is carried out comparing students across these attributes and it explores ways in which studying for and living through a doctorate is an inescapably bodily experience. Through discussion of four themes, the authors argue that doctoral students' (changing) bodies constitute their primary basis for being and interacting, influencing their experiences in profound ways. In addition, the spaces and places where students work and live are considered as important in terms of their personal well-being and academic progress. Finally, external factors and social norms are analysed with reference to how they affect students' bodies, and thus doctoral learning and experience, in positive and negative ways.

The analysis of abstracts included in the 2012 edition of the SRHE Research into Higher Education Abstracts publication, one that draws from over 100 peer reviewed academic journals that relate in some way to higher education, reveals that, of nearly 750 abstracts cited, 40 related to a range of aspects of doctoral degrees, 47 to student experience (all levels included) and 26 to student perceptions (again considering undergraduate and postgraduate participants.) Considering the sparseness of studies (120 over the 10 years from 1995 to 2005) identified as genuine research by Leonard et al. [20], there (~40 in 1 year) is some small improvement in the volume of research conducted in the area of doctoral research.

Conclusions: Gaps and Recommendations

Even though there are a substantial number of studies which have filled the gaps that were identified in Leonard's et al. [20] report, there is still more to be done to explore the interventions and activities which positively impact students' sense of progress as well as difficulties and tensions that may hinder that perception. In addition, further study of how negotiated agency can be better promoted is required as is, in an increasingly multi-cultural research work environment in which mobility across disciplinary and national boundaries is encouraged, research on to what extent internationality in research is being facilitated and what forms of such facilitation are more effective.

Further, the small amount of research on differences in daily events and practices while doing a PhD begs greater address. Discussion and debate at Vitae, UKCGE, HEA

and SRHE workshops and conferences has noted the huge variation in policy and procedure across UK HE institutions, a topic and its variable impact on the research student experience which is currently being explored as part of a doctoral project by Chand Da Wang at the University of Oxford, while Maggie Hardman is currently investigating the factors that affect the timely completion of doctorates through her PhD study at the University of Salford, demonstrating further that doctoral students themselves can give voice to and substantiate the lived experience of their peers. Institutional disparities in policy and procedure are, of course, exacerbated when the international nature of the doctorate is examined [4] as well as when students from other nations experience the educational culture in a different country, as the doctoral work of the first author is uncovering for the UK situation. These observations suggest that a key issue for further investigation is the comparative, specific experiences of doctoral students within and between institutions and countries. Further, although each doctoral study is unique there are clearly differences in experience between cognate groups of disciplines, for instance in the degree to which students have choice in determining the focus of their research, with those in STEM subjects often carving their own niche within a research project defined largely by the supervisors/advisors while Arts, Humanities and Social Sciences students frequently identify the problem space for studies themselves with guidance only from supervisors. Thus, disciplinary differences in experience could bear further exploration.

There is a growing body of interpretative research that provides insight into particular aspects of the lived experience of doctoral students in general, identifying points worthy of address by their supervisors, mentors and programme managers as well as by those at institutional and national levels, and a record of general improvement across a range of categories of experience at the UK national level through the various PRES reports. However, there is little to help us connect between the two levels of data. Further, the participants providing qualitative data to the small studies and respondents to the PRES survey are all volunteers, so the representativeness of the data, the prevalence of particular experiences, remains unknown. A serious omission, therefore, is mixed methods research that either starts by collecting in-depth data and then tests out its pervasiveness through a large scale quantitative survey or starts out with a large scale survey then drills down for rich, qualitative data to exemplify and elaborate on initial findings.

Evidently, although some progress has been made, the doctoral experience still holds mysteries to be solved and dark corners to be explored.

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