

Dimensions of Fit for Doctoral Candidates: Supporting an Academic Identity

Journal: *Research Papers in Education: Policy and Practice*
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With an expectation that different doctoral programmes may encourage and support different student learning identities, this paper compares the experiences of doctoral candidates participating in doctoral studies in England and Germany. A comparison of the experiences of doctoral candidates as expressed through interviews is viewed through the lens of the theory of fit. This theory considers the alignment of values between those engaged in PhD study and the programmes created to support them. The paper claims that the identification of dimensions of fit is helpful for considering the data generated on the learning experiences and self-expressed identities of the doctoral candidates. Addressing how dimensions in relation to culture, environment and vocation change and strengthen or loosen the alignment between doctoral candidates' values and those affecting their doctoral work are important for supporting progress. These dimensions should be discussed in order to develop supervisory, programme and university support for doctoral learning.

Keywords: academic identity; dimensions of fit; doctoral education systems; doctoral candidate agency

Introduction

How can the doctoral experience support learning and develop a strong academic identity in the learner? Answering such questions matters because a positive attitude towards oneself as a learner and towards opportunities to learn is more likely to enable successful outcomes when pursuing doctoral study (Douglas 2020). Knowing how best to support and relieve the pressures of doctoral study is important if universities are to meet student expectations and prevent high attrition rates in postgraduate programmes (Burke, Scurry, and Blenkinsopp 2020). What is known about academic identity development is that it is based on self-assessment of intellectual and professional development as well as on the perceptions of others (Baker and Lattuca 2010). Yet much of the research literature is primarily of reflective, conceptual or philosophical articles and reports (Leonard and Becker 2009). Empirical studies are less common and few explore doctoral study from a

student perspective. In order to consider how doctoral candidates perceive their academic learning identities, this study sought the students' perspectives. The study aims to identify how doctoral students see their academic identities and how these are influenced by a sense of alignment between the students' own values and those of the universities in which they study.

Doctoral Students' Academic Identities

Individuals assess their capacity to enact the behaviours associated with a role before taking on the identity associated with that role (Baker and Lattuca 2010). The link between identity development and academic learning in doctoral study occurs through the participation of students in academic communities or networks (see Douglas 2020). Doctoral students' participation in multiple and varied networks influence their learning and sense of identity (Hopwood 2010). Therefore, networks affect not only the wellbeing of individuals 'but also their very identities' (Kilduff and Tsai 2003, 2). There is limited research available on how the variety of relationships and networks shape doctoral students' learning and scholarly identity development. Social identities in work settings are 'co-created' through relationships in the local setting (Ibarra and Deshpande 2004). Consequently, identities emerge through participation in network processes. It is through engagement with the intellectual community that doctoral students develop the skills and knowledge required for working in their field of study, the research methods and ways of appraising knowledge (Baker and Lattuca 2010). Learning and identity development are therefore closely connected. Successful participation supports students in making choices about the roles and values associated with research scholarship and with a career in the academy.

Research on students' experiences has documented the many pressures associated with doctoral study. Within the context of doctoral education in the UK and beyond, a lot of attention has been given to problems of the doctoral process (for example, Plumlee and Reckers 2014) and to aspects of doctoral supervision (for example, Beattie and Smith 2012). There is also growing emphasis on the need for timely completions (Agné and Mörkenstam 2018; Neumann and Rodwell 2009). For many years there has been a research focus on the submission and completion rates of PhD students (Wright 2003). Increasing pressures have recently been identified in

relation to producing a wide variety of outcomes in very short timeframes (Manathunga 2019). The managerial agendas of efficiency and speed impact upon all doctoral candidates as doctoral students are encouraged to identify quickly a particular research issue with new forms of research management designed to increase the speed of knowledge generation (Peters 2015). A focus on fast time to completion creates significant emotional lows for PhD candidates (Lindvig 2018).

Research findings suggest that there is a need for university policy documents and doctoral education managers to acknowledge the variety of pressures in the doctoral learning process (Skakni 2018). There are a number of individuals who may assist a particular doctoral student with such pressures, for example, supervisors, lecturers and other academics, peers, family members and friends. These people may focus on helping students negotiate a particular academic community and a set of academic tasks. Nevertheless, the most central members of the academic community determine the quality of students' learning, and thus the claim to their identity as scholar.

Doctoral Students' Learning Identities

A sociocultural perspective on student identity development focuses researchers' attention on the social contexts and interactions that shape doctoral students' ideas about which identities are valued. A sociocultural perspective recognises that any individual is a member of multiple communities and contexts and hence, students' activities and identities outside an educational context are also understood as important influences on their experiences in those educational contexts (McAlpine 2012). Recognising that factors both inside and outside the educational context are important to doctoral student performance, an extended model focusing on the task of understanding how to improve doctorate completion rates has adopted a theory of fit (Ward and Brennan 2018). Built on previous research work (Baker and Pifer 2015) the framework encompasses student personal characteristics and looks at a number of different dimensions of fit (environment, vocation and culture). The model looks at how aligned the values of the student are with the organisation and considers the student's learning identity as well as their private environment. The model provides a means of measuring fit: the environmental influence of support from persons at work (the doctoral programme and research training) and home (family and friends); the

vocational influence of feelings towards a future career, the value of the degree and the students' interest in their topic; the cultural influence of shared values with their learning doctoral identity (being independent, self-directed and responsible for their learning). The model asks if these influences align with positive doctoral student performance.

A limitation of the theory of fit is that the model can only act as a starting point in that the relationship between fit and the individual is multidimensional. 'Fit is multidimensional and doctoral students are multidimensional' (Ward and Brennan 2018, 10). Differences in student characteristics (gender, age, academic experience etc.) are numerous as are possible modes of study and the different stages to doctoral completion. Consequently, fit is fluid and expected to change during the learning process. Doctoral programmes have continued to grow in number and type with a consequent diversification of student populations (Naidoo 2015). With the increasing number of ways to gain a doctorate (Prøitz and Wittek 2020) comes the opportunity to consider students' doctoral learning experiences from a number of different perspectives (Holley 2015). Adopting the theory of fit is considered in this study as a potentially valuable heuristic device or guide to support a sociocultural understanding of the experiences of doctoral students. Thereby, enabling pressures to be identified and support strategies to be developed in order to relieve tensions and create positive and successful learning opportunities.

Whether doctoral students' values are aligned with their doctoral work activity and experience (Bieber and Worley 2006) may be connected to the networks in which they participate. Working in networks (Bilecen 2013; Douglas 2020) may lead to a growing sense of academic identity (Hasrati 2005) but it may also lead to tensions and challenges (Pilbeam, Lloyd-Jones, and Denyer 2013). One challenge for the student is to determine which individuals and networks are the most central and influential in the academic community and why (Sala-Bubare and Castello 2016). The difficulties of reconciling doctoral studies with a personal life are widely documented (Carter, Blumenstein and Cook 2013; Martinez et al. 2013), as are the challenges associated with the supervisory relationship (Howells et al. 2017; Xu 2017). These challenges influence doctoral learning identity, which is traditionally seen as autonomous and self-reliant (Manathunga and Goozee 2007) as it leans heavily on the expectation that one or two supervisors are effective in supporting the progress of their students. However, as well as supervisory relationships, students' decisions to continue with

their doctoral studies have been found to depend on a mix of individual, interpersonal and contextual factors (McAlpine and Norton 2006; Skakni 2018).

Research foci on doctoral study have moved from factors influencing student progress such as admission qualifications, training requirements and personality characteristics to student experiences and interactions within personal and academic environments (Skakni 2018). Recommendations for addressing this in empirical studies along with other potential issues, such as researcher emotion, are widespread in contemporary papers (Rahimi, Yousofi, and Moradkhani 2019). With an expectation that different doctoral programmes may encourage and support different learning identities, this paper compares the experiences of doctoral candidates participating in doctoral study in England and Germany and tests the validity of the theory of fit framework by comparing the two different models of doctoral education.

The German and English Doctoral Education Systems

In recent years the European Commission has encouraged universities to increase the number of doctoral degrees awarded and to structure research training when studying for a doctorate (Bao, Kehm, and Ma 2018). Developing skills to work in both academic and non-academic fields has also been seen as beneficial particularly with the increasing number of doctoral students and the reduced availability of academic roles (Chen, McAlpine, and Amundsen 2015). In higher education around the world, this has led to a diversification of the types of doctoral degrees and models of training available to students (see Yanhua, Kehm, and Ma 2018). Public criticism of doctoral education has noted the high attrition rate of students, the length of time taken to qualify and the narrow nature of the value of the degree in relation to preparation for non-academic labour markets (Burke, Scurry, and Blenkinsopp 2020). Therefore, integrating doctoral practice into higher education programmes with additional curricular provision has established a clearer structure for doctoral education and training. This promotes theoretical, methodological and employment related competences to research work. Hence, a previous research focus on the final outcome of a written thesis is shifting to a focus on the processes of doctoral education and training (Kehm 2006).

The changing focus above only applies in those European countries such as the UK where doctoral candidates are considered students and where fees are paid to

follow a doctoral programme. This concept however, does not fit with the majority of people undertaking doctorates in Germany where doctoral education predominantly takes place in the framework of employment contracts with candidates working part of their time as research assistants. Hence, doctoral candidates are employees of the university when getting their doctorates and are employed in a research assistant position. If candidates hold a study scholarship or if they are self-funding, even though they have a professorial supervisor, they have no status in relation to the university (Burkhardt 2008). This means that traditionally the status of research training in Germany has been unclear with few statistics available on the number of doctoral candidates in the system, a lengthy qualification period and a growing age of PhD graduates (Enders 2005).

In an effort to overcome these concerns, structured PhD programmes within graduate colleges have been introduced in Germany with PhD candidates embedded into the context of a larger group of aspiring students, supervised by a number of professors who provide further training courses (Bloch 2018). In the last decade, reform initiatives in doctoral education supported by large amounts of funding have led to more doctoral programmes and graduate colleges being set up in Germany. These programmes represent a relatively new but increasingly common way to pursue a doctorate in Germany. Different from the traditional model of doctoral education, graduate colleges include a curriculum, supervision agreements and formal admission procedures, as well as measures to increase gender equality and internationality. Universities thus have to transform the old master-apprentice model into an organisational programme with formal rules (Bloch 2018). PhD candidates have a maximum entrance age of 28 years, above average marks in prior qualifications and an outstanding thesis proposal. They are expected to compete for graduate college places and are recruited nationwide. Structured doctoral programmes and graduate colleges have changed the mode of research training in Germany in many respects. Comparing them to the traditional individual doctoral study, the programmes meet the increasing demands for efficiency and accountability in doctoral education by regulating research training with formal rules and clear statements of responsibility.

Nevertheless, doctoral education in Germany still largely follows the earlier model of a professor taking charge of research and training with high authority and broad autonomy. The professor interviews new research assistants. There are few

standard procedures or examinations for admission of these candidates with many locally recruited (Qin 2017). In 2005 graduate colleges were only 10% phenomena with 90% of candidates working under the conditions of the traditional system (Enders 2005). More recent figures show that graduate schools have produced a considerable number of PhDs. Up to 2013, 2499 PhDs had been completed within the framework of the government-funded Excellence Initiative, 1897 of them in graduate schools (German Research Foundation and German Council of Science and Humanities (2015). However, overall, 27,707 PhDs were granted in Germany in 2013 (Federal Statistical Office 2016) so there is still a large proportion of doctoral candidates in Germany working as research assistants to professors. Unlike the viva system in the UK, the supervisory professor serves as the chair on the examination committee.

The fact that the supervisor is both a research partner/mentor as well as an examiner in the doctoral procedure can be an issue. Universities are called upon to unbundle these roles to a feasible extent and ensure that the basis for the assessment of a dissertation is broad. (Carmesin et al. 2015)

This traditional model of doctoral study therefore follows the original Master-apprenticeship model: a ‘German model (Type 1)’ where ‘the nurturing of the young scholars has been in the hands of an individual *Doktor-Vater*’ (Teichler 2014, 2).

This situation is very different to that of doctoral students in England who rarely work as paid assistants for their supervisors. Instead, the supervisory relationship tends to focus mainly on a student’s research and on the writing up of their thesis (Douglas 2020). The supervisor is forbidden to contribute to the final viva voce examination but may sit in on the examination as an observer only. As noted above, where fees are paid to a university for doctoral programmes as in the UK, universities are also expected to provide a more structured programme for doctoral candidates. Opportunities for skills development are made available either by the higher education provider offering the research student's research programme, or by other providers; for example through regional or other collaboration. Higher education providers draw on their experience of structured training and education to establish personal and professional development opportunities for the benefit of their

research students (QAA 2013). Subsequently, doctoral candidates are no longer trained just for the academy (Golde and Walker 2006). It is seen as advantageous to acquire a broader set of skills and competences often developed in research student development programmes. These take place outside of the doctoral supervisory relationship. In Germany, the exceptionally high output in terms of doctoral degrees awarded annually (Janson, Schomburg, and Teichler 2007) means that relatively few candidates become professors. This has also encouraged a broader focus for the graduate colleges in Germany to provide training applicable to work outside of academia.

For an overview of key differences in the doctoral education systems in England and Germany, see table 1. This research study asks how two groups of PhD candidates interviewed in England and Germany view their identity in terms of their doctoral learning experiences, and consequently how they see their fit with the doctoral learning process.

	England	Germany
Application process	Applicants drawn nationwide and internationally	Significant local recruitment A growing number of candidates recruited nationwide to Graduate Colleges
Doctoral Candidate	Fee-paying Student role Focus on completing a thesis A structured programme of training alongside supervision	No fees Research Assistant role Focus on supervisor's research project (work part time on own thesis) Master/Apprenticeship model Minority number of students attend graduate colleges
Viva / examination	Supervisor acts as an observer only	Supervising professor chairs the viva exam panel

Table 1: An overview of the differences in the doctoral education systems in England and Germany

The Research Study

This study's aim is to gain a better understanding of how doctoral candidates consider their learning identities and how this is influenced by their ways of working within and outside their doctoral programmes. The overarching research questions ask:

1. How do doctoral candidates see their academic learning identities?
2. In what ways are their perceived academic learning identities influenced by their feelings of fit with doctoral and other networks?

The participants interviewed for this study are mainly working in the social sciences. Work tasks in the social sciences and humanities tend to be less structured and individualised compared with that in for example, laboratory-based sciences. Nevertheless, the data generated in this study will help to understand the way of working reported and enable consideration of the extent that a particular discipline may affect everyday experiences. Data was generated from interviews with 20 doctoral students in England and 10 doctoral candidates in Germany. See tables 2 and 3 for an overview of the participants. The students in England are from one post-92 University. In the UK there is a distinction between universities that existed before 1992 and those colleges of higher education and polytechnics that have been re-designated as universities since 1992. Two or three faculty members who qualify as supervisors after completing a doctoral supervisors' programme in the university supervise each student. One of the supervisory team is senior and has supervised previous doctoral candidates from application to completion. Some supervisors are professors but this is not a prerequisite. The doctoral candidates in Germany are working in a university, which runs doctoral programmes and grants doctoral degrees. One professorial member of the faculty supervises each student. All but two of the candidates are employed as research assistants working for their supervisor. There are two students enrolled in a graduate college run by three universities, one of which is the German research university in this study.

The interview schedule was designed to explore the students' learning opportunities in all aspects of their doctoral work (McAlpine, Jazvac Markek, and Hopwood 2009). A semi-structured and flexible interview strategy was adopted to

create a guided conversation in order to elicit rich and detailed information for qualitative analysis. Questions were asked about the student's personal situation (for example, their reasons for studying for a PhD, the stage of their study, their working habits, supervisor support, other commitments), their doctoral activities (for example, their participation in research centres, conferences, training opportunities, publishing experience), their work with others (for example, students, academics, other professionals, friends) and other experiences (for example, events both within and outside academia, development opportunities and affiliations). A digital recorder aided full transcriptions of the interviews. Interviews lasted approximately 30 minutes. Informed consent procedures were intended to minimise negative personal and social consequences and served the purpose of allowing participants to assess the risks of being involved in the study. A reminder to those involved that everything was on record was evident owing to conversations being recorded. Anonymity and confidentiality were promised as far as is possible.

Using coding techniques based on a thematic analysis approach (Braun and Clarke 2006), an inductive process enabled all elements of the data to be analysed. Initial codes were refined by repeated analysing and memos were used to define recurring themes and patterns. For example, codes were identified such as study space, auditing subject seminars, stress and influential people. These developed into memos on areas such as support mechanisms, significant events, networking opportunities, motivation, and isolation. This process resulted in the creation of three main themes, each comprised of three sub-themes. The themes addressed the foci of doctoral academic identity (expert/novice, learning responsibility, learning opportunity), the doctoral community (study support, programme structure, student initiatives) and doctoral candidate agency (professional links, control over study continuity, academic contacts). The findings are initially presented before discussing them when viewed through the lens of the theory of fit (Ward and Brennan 2018). The strength of the evidence supporting the interpretation of the data is recognised in terms of the limitations of doing research with a relatively small number of respondents studying in two universities.

Table 2. Participants in England

Student identity	Full /part time	Year of study	Discipline (MCL = Media, Culture and Language)	Funding
110013F	FT	1	Business	Self-funding
120013F	FT	3	Education	Scholarship
140013F	FT	4	Education / MCL	Self-funding
103019F	FT	3	Education	Self-funding
110019F	FT	3	MCL	Scholarship
113019F	FT	5	Education	Self-funding
120019F	PT - FT	3	MCL	Scholarship
150019F	FT	1	Social Science	Self-funding
160019F	FT	1	Education	Self-funding
100020F	FT	4	MCL	Scholarship
110020F	FT	4	Education	Scholarship
160020F	PT - FT	2	Education	Scholarship
163020F	FT	3	Business	Self-funding
090025F	FT	3	Education	Scholarship
100025F	FT	2	Business	Scholarship
120025F	FT	3	Education	Scholarship
130025F	FT	2	Education	Self-funding
150025F	FT	1	Life Sciences	Scholarship
140025F	FT	3	MCL	Scholarship
170028F	PT	1	Education	Self-funding

Table 3. Participants in Germany

Student identity	% time studying on PhD	Year of study	Discipline	Graduate College Funded
S1	20	4	Social Science	no
S2	30	1	Social Science	no
S3	100	2	Social Science	no
S4	100	1	Social Science	yes
S5	33	2	Social Science	no
S6	5-10	2	Social Science	no
S7	5-20	1	Social Science	no
S8	65	1	Social Science	yes
S9	20	3	Social Science	no
S10	40	3	Social Science	no

Data Presentation

The following data presentation discusses the three main themes central to the data analysis and identifies the key subthemes in each theme.

Doctoral Academic Identity

As discussed earlier, academic identity develops from one's own feelings of academic development alongside the perceptions of others (Baker and Lattuca 2010). Both influence how doctoral candidates may see themselves. Self-perceptions were discussed with the respondents in terms of feeling like a novice or an expert in the academic environment. This subtheme was noted as well as other subthemes on how learners saw their responsibilities in doctoral work and how opportunities for future learning were purposely enhanced when taking on an academic role.

When asked how doctoral candidates saw themselves in Germany only the two enrolled in the graduate college considered themselves as students: 'I feel more like a student because I receive more than I give maybe' (S8) and 'I see myself as a graduate student, a thinker who writes' (S4). The others saw themselves not as students but when confident in their academic work as mid tier academics: a 'research professional' (S1), a 'researcher' (S2), as a 'middle level scientific member of staff – a bit higher than students' (S5). But when showing less confidence, the candidates often felt that they fell between the definition of what they had been prior to working in the academy and now what they were attempting to do within the academy: a 'social worker, an academic or nothing' (S3). This candidate made the point that her supervisor felt that naming her supervisees 'students' would be disrespectful and she preferred and used the term 'colleagues'. Another respondent who had worked in administration for 15 years felt 'like neither a student nor an academic' (S9) but rather an ex-administrator. Another candidate felt that her life was not 'a classical student's life in that you're not so free' (S10):

I don't necessarily tell anyone I'm a PhD student. I just say that I work in the university. I'm trying to do a PhD but what is important for me is that I have a position for work (S10).

Therefore, there was considerable variation in how the doctoral candidates saw themselves and their position within the university. Many identified as experts in their field with prior expertise to bring to their research but as doctoral researchers they felt limited in their academic potential owing to a lack of developmental opportunities:

I'm a lawyer and have no methodological training whatsoever. This has limited the worth of my research but not what I wanted to do, as I was realistic from the start. (S1)

The English PhD students also showed variation in how they perceived their role and status in the university. Accepting that they were all students, they differed in relation to how confident they felt in adopting an academic persona:

I've given a seminar to the colleagues in my department. I felt very cautious about pushing myself forward too soon. I don't want to be standing on a podium talking about things that I don't have a real grasp of yet. (120013F)

When you are at PhD level, you think that you're supposed to know more and you feel belittled when you find out that you don't know that much. (163020F)

Doctoral culture fit occurs when students share values with their doctoral learning identity and curriculum (Baker and Pifer 2015). Difficulties in transitioning to a doctoral learning identity such as those mentioned above (a lack of methodological training or feeling belittled at one's perceived ignorance) indicate divergence in the doctoral culture fit. The responsibility for doctoral learning is seen as being with the doctoral candidate and hence a shift in the doctoral candidate's learning identity may occur owing to challenges of independent learning. In Germany:

I would have preferred a more school-like system with studies and courses but I expected this independent way of working. I couldn't find any events

that fit my interests and I don't speak to my supervisor about this. I have no contact with the other research students of my professor. (S9)

A perceived shortfall in academic study skills or possessing personality flaws in being able to succeed in responding to advice and criticism alongside the requirements for academic rigour may also detrimentally affect culture fit. In England:

Someone said you'll never make it to a British university. You're so knowledgeable but in England you'll never make it. That really hurt me. My silly little project is not going to change anything. (140013F)

The Masters was much easier because I had lessons and I had assignments. Now I'm told, "okay, just read. Just do lots of reading; do lots of reading". And you can do lots of reading but I still feel that I should be doing more. And everyone says "no, no just read. Just enjoy this time; this is the time when you should be enjoying the PhD. After that it changes." I felt very unprepared and I still feel that way if I'm honest, but I just think it's part and parcel of doing a PhD. (150025F)

However, some students did feel they were making the transition:

I was asked to go to Stockholm to help them set up a project, so in that sense I'm valued like another academic even though I'm still a student. (100020F)

In Germany, a successful transition was most evident from the comments of the two graduate college students. They felt that the call for graduate college students matched well with their previous academic work and experience. As graduate scholarship students they didn't know in which university their position would be located, as it could be based in one of the three universities making up the graduate college. But as successful applicants competing for funded placements part of the benefits were the extensive networks and opportunities provided by working across universities:

I have stayed in [place name some distance from the professor's university] and will have weekly video calls. I feel very well supported so far. I feel quite lucky. (S8)

This was in contrast to the experience of the research assistants in Germany who had all secured the opportunity to study for a PhD owing to their local contact with the university:

I knew my professor before and I knew somebody already doing a PhD with her and he sent me the project (the professor had secured). He thought I'd fit really well and said that the professor would like me to apply. When I got the opportunity, I thought, yeh, I'll see if it works. They pay me for the project. (S3)

Positive feelings of academic identity developed and were particularly enabled when students felt strong affiliations with the academic community. Taking responsibility for learning and taking up opportunities for learning often flourished when the community structure was recognised as being designed for doctoral student support and development.

Doctoral Community

Support structures in the doctoral community varied in the two countries. This theme arose from subthemes that focused on specific initiatives developed to support the doctoral learning process and programme structures designed to help signpost progress for doctoral candidates. Initiatives taken up by doctoral candidates from their supervisory relationships were also seen to significantly contribute to a sense of wellbeing in the doctoral community. Linked to fitting into a culture dimension with regards to doctoral identity and ways of doctoral working is the fit with the student doctoral environment, noted here thematically as the doctoral community. Differences were identified in relation to the perceived support from the doctoral programme provided by the universities and the doctoral supervisors. Some of the

doctoral candidates working as research assistants in Germany were very critical about the lack of support they experienced as doctoral researchers:

The process here is not very formalised. I think they could do more (the university) so we know who is actually writing and what they're writing about; something regular, to put a bit more structure in. There should be more support to get people from 'a' to 'b'. Yes we have to do this alone but we shouldn't be entirely alone. (S2)

A problem in Germany is that you don't know how to do things in the first place. If I had a fixed programme or schedule I would know this – the steps I need to do and how I proceed. I don't have that and I also don't have people that I can ask so I get some books for myself and think that at least I can take this as a guide. But I think that this is not enough. It's like you're entering this whole different world without any guide. (S6)

In contrast, the two graduate college students in Germany praised their programme for offering an array of training for them to develop their research ability:

I didn't know my professor before and I moved to [place] to help me get into the working mood. I had a choice of 3 universities I could move to. I compare my work to that in the scientific community and see if my thoughts are right – I have to be able to communicate and there has to be an exchange. There are many opportunities to exchange ideas with other graduate students in the three universities in the college. (S4)

In England the doctoral programme was more structured. This was appreciated by many of the students:

Lectures are very helpful to me and for most PhD students because most of our work is doing research by ourselves, but we need to be taught some research methods. (110013F)

Doing sessions on ethnography, fieldwork, interviews, narrative interviewing has been useful. They're sort of very small stepping-stones and then it's up to you to go and explore them further. It's been a positive experience so far. (120019F)

The research student development programme is a wonderful opportunity to gain as many perspectives as possible in areas you thought might have no connection to your research. But actually they have huge connections, not just in the topic but also in the research methods. When you go with something in mind – what do I want to get out of this, who do I want to meet and talk to? Then maybe you can talk to that person in the future. It's a combination of initiative and structure. (100025F)

This link (initiative and structure) between the characteristics of individuals and their work environment has been identified as a person-environment fit, a subsection of the student-doctoral environment fit (Ward and Brennan 2018). This would also include fit with university faculty members and supervisors.

Supervisors in both institutions were seen as central to PhD progress. However, in Germany the nature of the relationships discussed often reflected an interpersonal compatibility reminiscent of a professional work environment with assistants referring to their supervisors as their boss:

In the project, there is also a postdoc and he's also done the PhD with my supervisor and he's incredibly helpful for me especially when I feel I have a new idea and I'm not really sure if I want to approach my boss with that already, then I can talk to him first. (S10)

My boss came with the offer of the project position so deciding to do the PhD was a mix of the opportunity at the time when I wasn't sure what I was going to do and being interested in this kind of work. I know him well and I know what he wants me to write. It could be better if I didn't know him as a supervisor because I could write what I really want to write and not only what I know he wants me to write. (S7)

The supervisor hierarchy within the doctoral working relationship was emphasised owing to the German doctoral education system including supervisors in the assessment of the PhD thesis:

I do feel supported but not so much from the university but from my supervisor. She considers it her personal goal that we get our PhDs. I knew her before; otherwise I am not sure I would have done a PhD. It depended a lot on her. The dependence on your supervisor is very critical in Germany because as a PhD student you can't say 'no' because the person in the end will give you the grade as your examiner. (S10)

The supervisor / doctoral candidate relationship also included negotiations around time given to PhD work compared to other project work the candidate was employed to undertake:

My professor told me that I should increase the time (5%) I am doing on my PhD but it is very difficult as I'll be writing papers for his project and meetings and so on. I cannot say 'stop' when there's a lot of other work. For this year I told him that for one day a week I shall write my thesis and since January this has worked very well. We both decided that it couldn't go on like last year. (S7)

Viewing a supervisor as an employer or boss (who allots working tasks to doctoral students working on the professor's projects) and as an examiner of the final doctoral thesis was in contrast to the way the doctoral students in England viewed the supervisory role. Frequently, the supervisors were seen as the first place to seek advice or to air concerns about the doctoral learning process:

It's early days but in terms of isolation, I did speak to my supervisor about it. I'm not necessarily looking for a resolution because I know that the PhD will be mostly solitary. I think the 'imposter syndrome' was definitely what psyched me out taking part in using the postgraduate room. But at this stage, it's not preventing me from what needs to be done. (150025F)

I said to my supervisor that I was quite nervous because it'd been so long since I'd actually done any academic work and I felt that was a bit of a disadvantage. And he's like "well actually, being very proactive and personable and talkative is as important". And I took that to mean that he sort of said that I was, which I am, and that's been very helpful to me. So I have no problem in going to other universities and meeting people there, which has been quite helpful. (150019F)

In many ways, the comments by the respondents are unsurprising considering the different nature of the doctoral programmes. The students in England pay fees for doctoral study and the majority of the doctoral candidates in Germany are employed as research assistants. However, of interest is consideration of the dimension of doctoral candidate environment fit and how this influences the interviewees' self-identities with regards to their doctoral work. Their perceptions and experiences affect their identities in their work settings. These are 'co-created' through their relationships with supervisors and others in the local setting.

Doctoral Candidate Agency

Connected to the first two themes of doctoral academic identity and doctoral community is the theme of doctoral candidate agency. Perceptions of a doctoral academic identity and of the doctoral community were influenced by the perceived capacity of doctoral candidates to control and shape the doctoral learning process. Proactive work was noted in terms of professional links created for the benefit of doctoral study as well as proactive networking activities undertaken in order to develop academic contacts. However, for many of the candidates in Germany the pressure to maintain control over their PhD learning process was challenging. A capacity for agency may not necessarily emerge of itself but needs to be cultivated by establishing corresponding shared practices orienting toward engaging doctoral students in relational working (Douglas 2020, 14). Noticeably, those candidates in Germany who saw themselves as experts tended to rely on their earlier professional links and connections and used these to support their doctoral work:

I was very lucky to have these 3 different groups and at least 2 of them I have because I really tried to find them. I really tried to engage with my scholarship foundation; I tried to engage with my old friends from law school. So I would say that that is not generally normal for a German PhD student to have such a support network (S1)

But also noticeable among the research assistants in Germany was their somewhat fatalistic attitude towards their doctoral progress. This was often seen as being out of their control with them relying on favourable external circumstances to gain the PhD qualification. Pressures around not being able to set the timeline (having to maintain other work contracts and securing projects to enable their progression) were at the forefront of many of the respondents' interviews:

I don't know if I'm going to be finished in one and a half years. I hope, but you never know. I try not to plan. My other job (2 days a week organising conferences) is also for 3 years but it has just started. (S3)

I fear I won't finish my PhD thesis during the time I am working here so probably I will have to finish it afterwards (when going back to work in administration). (S9)

I'm not able to finish it (the PhD) because the project ends at the end of the year. I think I will need at least half a year or a year more. So I need another project or I will drop out of the university and do it on my own. We are searching for new projects otherwise I will be unemployed and on social security. (S10)

Consequently, the doctoral learning process was seen in tandem with their academic careers. Support for these when voiced positively recognised the advantage of working closely with other academics in their field in order to affect future progression. Of particular note for those who shared their satisfaction with their doctoral work because of their persistence and productivity was the value placed on all contacts in academia rather than just the supervisor. One doctoral candidate in

Germany felt fortunate in being one of nine doctoral candidates working on one professor's research project:

We call each other often on the cell phone, and on WhatsApp so we stay in contact even when we're not in the office. The network that we have with our chair is quite strong: we talk to people who are long gone at the doctoral seminars and they still provide us with input so it's a very good network. (S5)

For some of those working on a PhD in Germany, the value of sharing a joint research project in their initial research work with their supervisor and the established research group, and co-authoring papers on the supervisors' research projects provided access to networking opportunities for their own research projects, thereby creating potential for developing further joint work during their doctoral studies.

In England, the doctoral students appeared less career oriented in interviews and focused on how they were going to achieve the PhD by completing their thesis. However, in interview when questioned, all respondents in England valued the concept from the Chinese doctoral education system of the 'tongmen', which was felt to be advantageous for developing doctoral agency. The tongmen network plays an important role in supervision and in socialising doctoral researchers into a research community in China (Wang and Byram 2019). Each supervisor informally creates his or her own supervision team consisting of former supervisees and current senior doctoral researchers. The specific term for all the doctoral researchers supervised by the same supervisor is 'tongmen'. One Chinese doctoral respondent studying at the English university had heard of this network concept:

I know what you mean; yes tongmen, build a close relationship with others and one supervisor will lead a team. Yes in China the supervisor will publish articles in this team, by this team. So even if you have graduated from a PhD, you may find work, find and get a job in university in a research group. I think in most situations they will work together their whole lives; that's the situation in China. (110013F)

The tongmen is thus a resource providing immediate access to support (often through social media connections within the group) that may have otherwise been given by the supervisor. The network can also create lifelong friendships and therefore be more than a support network. By sharing research and life, the tongmen community can also foster strong emotional attachment. Those students most enthusiastic about this way of working recognised similarities to their own working opportunities:

We meet once every term, the entire group. That worked well because when we were preparing for the upgrade there were two of us preparing at the same time. So when we shared our experiences, the others who were next in line to prepare for upgrades got an idea of something to look forward to. Probably we wouldn't have had that opportunity if we weren't all meeting. I think it's important because you need to refocus and talk with somebody or read somebody else's work or have somebody read something that you have in the draft stage. So it doesn't matter what stage of the PhD you are at, that network and somebody else's perspective might open up insights to something new. (090025F)

I knew studying would require independence but I find I've got a real community here with students and academics. There are a few of us that began quite similar PhDs at the same time and we go to the same conferences so I've not found myself working alone in the way I feel doing a PhD might be. (100020F)

Such comments were less forthcoming in the German university where it was felt that 'there's no institutional way to get people together' (S1) and:

I feel that I always have to go after people to be involved in academic events. Communication is very low. Sometimes we don't even know what people we see on an everyday basis are doing. I feel like there's no real contact with people. (S6)

The dimension of student-vocation fit refers to the congruence between individuals and their chosen career (Ward and Brennan 2018, 4). The way doctoral candidates feel about their doctoral programme, the learning environment and the curriculum will influence their motivation for following a career in academia. Although not a prerequisite for doctoral success in itself, positive motivation for academic study is likely to spill into motivation for other related work post PhD:

I'd love to stay in academia. But if not, I understand that it will still open up – what I wanted to do in coming to study late is open up other doors, and I've definitely been able to do that. I'm not sure where it will take me. (150025F)

Feeling positive about opportunities available to enhance the doctoral process was valued particularly as it was recognised that considerable pressures were apparent in relation to careers in academia and to the learning environment therein:

I think that sometimes we feel under pressure psychologically. It can be so enabling for people to feel that they're not on their own. I think in an environment where people are vying for future positions, the dynamics can be complex in terms of competitiveness and envy. So when my scholarship foundation sends me things (doctoral days, writing retreats and residential congresses) there's loads of positive opportunities I can choose from. (150025F)

The above comments illustrate the value of support networks, which for some students were only available owing to their scholarship foundations and contacts with specific organisations. Without such contacts, opportunities for engagement in relational working were often more limited.

Discussion and Concluding Comments

When considering the data analysis, specific issues are highlighted from the different sets of data. Table 4 outlines a comparison between the study's main findings in relation to the experiences of the doctoral candidates in England and Germany. The

German candidates were more critical of the role of the university in supporting their studies, how this lacked structure and apparent purpose and how comparative conversations with peers occasionally occurred in relation to the working relationships and demands of their acting as research assistants for their supervisors. The research assistant role gave them a sense of their professional academic identity but this was often separated from their identity as a doctoral candidate, which for many took second place to the work they undertook for the professor. Their academic position was seen as dependent upon their professor supervisory relationship and whether expressed in positive or negative ways, there was an understanding that the relationship was key to both their employment status and to their success in gaining the doctorate. Their employment terms enabled them to pursue the doctoral degree and so their academic work in the University was instrumental to them in securing their on-going studies. When this was in question (when terms of contract were coming to an end or when work was undertaken to extend current contracts) so was the future of the doctoral degree. The two graduate college students commented on the slight pressures of not finishing their thesis before their funding ended but felt that the support was in place for them to succeed in completing their studies with some scope for extending the study period should this be necessary. They also acknowledged available training opportunities and academic support for all aspects of their research studies.

England	Germany
Students reliant on university support structure and training	Criticism of the support structures and lack of a study programme (Graduate College students more positive)
Supervisor as supporter and adviser	Supervisor as 'boss' creating pressures in relation to wider research activities
Student role not considered 'inferior' but often used as a security mechanism by adopting the 'novice' label	Professional role – more likely to see themselves as 'experts' but their doctoral study is dependent on working contracts
Narrow focus on the doctoral thesis with occasional opportunities to develop other academic work	A broad focus with academic value seen in working as part of a research group

Table 4: Key Findings

The doctoral students in England perceived their academic status as students rather than academics even though some taught part time at the university (in a visiting lecturer capacity). The student label was not necessarily perceived as inferior or lower in a hierarchy of university roles (as was expressed in Germany). However, it was sometimes used as a security mechanism to counteract a lack of confidence in relation to academic status. This led some to question their ability to work successfully in academia with many reluctant to label themselves as experts in their field in comparison to those working on doctorates in Germany. Confidence in their continued development was for many reliant on the university support structures (the university research student development programme and the specific research methodology training sessions). These were often seen to be instrumental in keeping them on course to succeed. Supervisors were viewed as being in supportive roles with them seen to contribute to students' developing confidence in their academic activity. Consequently, the focus was on advice for doctoral students working towards completing a thesis rather than for researchers developing an understanding of work in academia.

In Germany, integration into academic work was widely noted by the doctoral candidates. Thus, for the majority of those working on a PhD, the value of sharing a joint research purpose in their initial research work with their supervisor and an established research group provided access to networking opportunities for their own research projects, thereby creating potential for developing added purpose to their doctoral studies. However, the success of this way of working was highly dependent on the activities of individual supervisors rather than on a doctoral learning process established within the university.

Table 4 notes the general tendencies identified in the experiences of the doctoral candidates in the two countries. However, the multidimensional aspect of doctoral students means that examples of each tendency were found in both countries. There were both positive and negative experiences for doctoral candidates associated with academic identity, academic community and doctoral student agency in each country. This suggests that focusing on dimensions of fit could help to gain a fuller understanding of the learning experiences of doctoral candidates. The discussion that follows considers the benefit of using the theory of fit for interpreting these findings. It specifically asks how the model can be utilised to develop the doctoral learning experience for doctoral candidates.

The Dimensions of Fit

Student-doctoral culture fit relates to how doctoral candidates' values are aligned with those of their university, reflected in how they see their academic identities (the first research question). Doctoral academic identities will be influenced by the student-doctoral environment fit, which includes fit between doctoral students, their department, faculty members and peers. This corresponds to the second research question, which asked how perceived academic learning identities are influenced by candidates' feelings of fit with doctoral and other networks. Such feelings are likely to support or hinder candidates in making choices in relation to their work and career aspirations (their doctoral candidate agency). This relates to how students see their role in relation to their chosen career (the student-doctoral vocation fit).

The student-doctoral education fit analytical model recommends an overall measure of fit in order to analyse links between student performance and fit. Although performance has not been the focus of this research study, the identification of dimensions of fit is useful for considering the data generated and the academic learning identities of the doctoral candidates. It may not be helpful to simply pinpoint the positive or negative influences on students' perceptions of fit dimensions. As the authors of the model acknowledge, fit as a concept is 'fluid and is expected to change' (Ward and Brennan 2018, 10). Fit is multidimensional as are doctoral candidates. However, there is value in exposing and considering fit dimensions and being aware of them as they continue to change and strengthen or loosen the alignment between students' values and those affecting their doctoral work. The question arises how this can be addressed in order to support the progress of doctoral candidates.

When working in qualitative in-depth ways and questioning the experiences in the lives of doctoral candidates, it is possible to use the dimensions of fit to explore and analyse the doctoral learning process. This is important for both doctoral candidates and for the academics that supervise them. This should also be of interest to everyone involved in the doctoral education community with regards to developing doctoral programmes and enhancing the experience of doctoral candidates. The findings from this study arose from the kinds of questions and discussions that rarely occur outside research interviews. However, everyone working within the academy influences academic identity development. It is therefore desirable that all who participate in doctoral education are aware of their influence on doctoral learning in

the social contexts of the academic work described in this paper. Appreciation of the dimensions of fit can occur when students are asked about their experiences. This empirical study highlights this because its purpose was to explore doctoral study from the students' perspectives. Using the dimensions of fit to analyse doctoral candidate experience enables an understanding of how and why perspectives are formed.

Alignment between a doctoral candidate and their doctoral study can act as a joint focus for the supervisor and the candidate. In England, contractual arrangements between PhD students and their supervisory teams ensure that doctoral study remains a focal point. However, this work may be seen in isolation from other academic work. Whereas, in Germany the paid work of the research assistants often took priority over the development of their PhD theses. Nevertheless, opportunities for academic identity development occurred when doctoral candidates worked closely on academic activities with professors and with their research teams. The graduate college students in Germany, although very early in their doctoral programme, appeared to benefit from a joint focus on their academic development alongside their doctoral progression.

The fit model can act as a stimulus for addressing doctoral learning experience, not to predict doctoral performance, but to initiate discussions with doctoral candidates about doctoral policy, doctoral education management and support programmes for doctoral learning. These discussions should focus on the dimensions of fit, with their outcomes used to help support doctoral candidates' learning identities, identities, which are influenced by the doctoral community, and the students' perceived doctoral agency. Conceiving doctoral work as an individual pursuit transfers the responsibility of learning to the doctoral candidate. However, doctoral learning support is also an institutional responsibility and as such doctoral programmes should implement mechanisms to optimise the learning opportunities and agency of doctoral candidates, especially in those cases where individuals face specific barriers (Suñé-Soler and Monereo Font 2020). Promoting greater understanding of the dimensions of fit within the academic community will not only benefit the progress of doctoral candidates but also enhance the advancement of the whole community.

References

- Agné, H., and U. Mörkenstam. 2018. "Should First-Year Doctoral Students be Supervised Collectively or Individually? Effects on Thesis Completion and Time to Completion". *Higher Education Research & Development* 37 (4): 669-682.
- Baker, V.L., and L. R. Lattuca. 2010. "Developmental Networks and Learning: Toward an Interdisciplinary Perspective on Identity Development During Doctoral Study". *Studies in Higher Education* 35 (7): 807-827.
- Baker, V. L., and M. J. Pifer. 2015. "Antecedents and Outcomes: Theories of Fit and the Study of Doctoral Education." *Studies in Higher Education* 40 (2): 296–310.
- Bao, Y., B. M. Kehm, and Y. Ma. 2018. "From Product to Process. The Reform of Doctoral Education in Europe and China." *Studies in Higher Education* 43 (3): 524-541.
- Beattie V., and S. J. Smith. 2012. "Today's PhD Students: Is There a Future Generation of Accounting Academics or are they a Dying Breed?" *A UK perspective*. Edinburgh: Institute of Chartered Accountants of Scotland
- Bieber, J. P., and L. K. Worley. 2006. "Conceptualizing the Academic Life: Graduate Students' Perspectives." *The Journal of Higher Education* 77 (6): 1009-1035.
- Bilecen, B. 2013. "Negotiating Differences: Cosmopolitan Experiences of International Doctoral Students." *Compare: A Journal of Comparative and International Education* 43 (5): 667-688.
- Bloch R. 2018. "Stratification Without Producing Elites? The Emergence of a New Field of Doctoral Education in Germany." In *Universities and the Production of Elites*, edited by R. Bloch, A. Mitterle, C. Paradeise, and T. Peter, 299-326. Cham: Palgrave Macmillan.
- Braun, V., and V. Clarke. 2006. "Using Thematic Analysis in Psychology." *Qualitative Research in Psychology* 3 (2): 77-101.
- Burke, C., T. Scurry, and J. Blenkinsopp. 2020. "Navigating the Graduate Labour Market: The Impact of Social Class on Student Understandings of Graduate Careers and the Graduate Labour Market." *Studies in Higher Education* 45 (8): 1711-1722.

- Burkhardt, A. 2008. *Wagnis Wissenschaft. Akademische Förderwege und das Fördersystem in Deutschland*. Leipzig: Akademische Verlagsanstalt.
- Carmesin, B., U. Hoffman, G. Huskobla, S. Huster, J. Kuster, J., J. Neumann, and S. Wegener-Feldbrugger. 2015. *Doctoral Supervision: Recommendations and Good Practice for Universities and Doctoral Supervisors, Issue 4*. Freiburg: UniWiND publications.
- Carter, S., M. Blumenstein, and C. Cook. 2013. "Different for Women? The Challenges of Doctoral Studies." *Teaching in Higher Education* 18 (4): 339–351.
- Chen, S., L. McAlpine, and C. Amundsen. 2015. "Postdoctoral Positions as Preparation for Desired Careers: A Narrative Approach to Understanding Postdoctoral Experience." *Higher Education Research & Development* 34 (6): 1083-1096.
- Douglas, A.S. 2020. "Engaging Doctoral Students in Networking Opportunities: A Relational Approach to Doctoral Study." *Teaching in Higher Education* DOI: 10.1080/13562157.2020.1808611
- Enders J. 2005. "Border Crossings: Research Training, Knowledge Dissemination and the Transformation of Academic Work." *Higher Education* 49: 119-153.
- Federal Statistical Office [Statistisches Bundesamt]. 2016. *Prüfungen an Hochschulen 2015. Fachserie 11, Reihe 4.2*. Wiesbaden: Statistisches Bundesamt.
- German Research Foundation and German Council of Science and Humanities. 2015. *Bericht der Gemeinsamen Kommission zur Exzellenzinitiative an die Gemeinsame Wissenschaftskonferenz*
https://www.bmbf.de/files/1_Bericht_an_die_GWK_2015.pdf
- Golde, C. M., and G. E. Walker. 2006. *Envisioning the Future of Doctoral Education: Preparing Stewards of the Discipline*. Carnegie Essays on the Doctorate San Francisco: Jossey-Bass.
- Hasrati, M. 2005. "Legitimate Peripheral Participation and Supervising PhD Students." *Studies in Higher Education* 30 (5): 557–570.^[1]_{SEP}
- Holley, K. 2015. "Doctoral Education and the Development of an Interdisciplinary Identity." *Innovations in Education and Teaching International* 52 (6): 642–652.

- Hopwood, N. 2010. "Doctoral Experience and Learning From a Sociocultural Perspective." *Studies in Higher Education* 35 (7): 829–843.
- Howells, K., K. Stafford, R. Guijt, and M. Breadmore. 2017. "The Role of Gratitude in Enhancing the Relationship between Doctoral Research Students and their Supervisors." *Teaching in Higher Education* 22 (6): 621–638.
- Ibarra, H., and P. Deshpande. 2004. *Networks and Identities: Reciprocal Influences on Career Processes and Outcomes. Working Paper Series – INSEAD (2004/85/OB)*. [http:// www.library.nyenrode.nl/INSEAD/2004/2004-085.pdf](http://www.library.nyenrode.nl/INSEAD/2004/2004-085.pdf).
- Janson, K., H. Schomburg, and U. Teichler. 2007. *Wege zur Professur: Qualifizierung und Beschäftigung an Hochschulen in Deutschland und den USA*. Münster: Waxmann. [SEP]
- Kehm, B. M. 2006. "Doctoral Education in Europe and North America: A Comparative Analysis." In *The Formative Years of Scholars*, edited by U. Teichler, 67–78. London: Portland Press.
- Kilduff, M., and W. Tsai. 2003. *Social Networks and Organizations*. London: Sage.
- Leonard, D., and R. Becker. 2009. "Enhancing the Doctoral Experience at Local Level." In *Changing Practices of Doctoral Education*, edited by D. Boud, and A. Lee, 71–86. London: Routledge. [SEP]
- Lindvig, K. 2018. "The Implied PhD Student of Interdisciplinary Research Projects Within Mono-Disciplinary Structures." *Higher Education Research & Development* 37 (6): 1171-1185.
- Manathunga, C. 2019. "'Timescapes' in Doctoral Education: The Politics of Temporal Equity in Higher Education." *Higher Education Research & Development* 38 (6): 1227-1239.
- Manathunga, C., and J. Goozée. 2007. "Challenging the Dual Assumption of the 'Always/Already' Autonomous Student and Effective Supervisor." *Teaching in Higher Education* 12 (3): 309–322.
- Martinez, E., C. Ordu, M. R. Della Sala, and A. McFarlane. 2013. "Striving to Obtain a School-Work-Life Balance: The Full-time Doctoral Student." *International Journal of Doctoral Studies* 8: 39–59.
- McAlpine, L. 2012. "Identity-Trajectories: Doctoral Journeys from Past to Present to Future." *Australian Universities Review* 54 (1): 38-47.

- McAlpine, L., and J. Norton. 2006. Reframing our Approach to Doctoral Programs: A Learning Perspective. Paper presented at the Society for Research into Higher Education conference, December 12-14, Brighton, UK.
- McAlpine, L., M. Jazvac-Markek, and N. Hopwood. 2009. "Doctoral Student Experience in Education: Activities and Difficulties Influencing Identity Development." *International Journal for Researcher Development* 1 (1): 97–109.
- Naidoo, D. 2015. "Understanding Non-Traditional PhD Students Habitus – Implications for PhD Programmes." *Teaching in Higher Education* 20 (3): 340–351.
- Neumann, R., and J. Rodwell. 2009. "The Invisible Part-Time Research Student: A Case Study of Satisfaction and Completion." *Studies in Higher Education* 34 (1): 55-68.
- Peters, M. 2015. "The University in the Digital Epoch: Fast Knowledge in the Circuits of Cybernetic Capitalism." In *Universities in the Flux of Time*, edited by P. Gibbs, O. H. Ylijoki, C. Guzmán-Valenzuela, and R. Barnett, 9-31. London: Routledge.
- Pilbeam, C., G. Lloyd-Jones, and D. Denyer. 2013. "Leveraging Value in Doctoral Student Networks Through Social Capital." *Studies in Higher Education* 38 (10): 1472-1489.
- Plumlee, R. D., and P. M. J. Reckers. 2014. "Lessons Not Learned: Why is there Still a Crisis-Level Shortage of Accounting PhDs?" *Accounting Horizons* 28 (2) 313-330.
- Prøitz, T. S., and L. Wittek. 2020. "New Directions in Doctoral Programmes: Bridging Tensions Between Theory and Practice?" *Teaching in Higher Education* 25 (5): 560-578.
- QAA (Quality Assurance Agency). 2013. *UK Quality Code for Higher Education, Part B: Ensuring and Enhancing Academic Quality, Chapter B11: Research Degrees*, www.qaa.ac.uk (downloaded from the QAA website on 01 September 2020).
- Qin, L. 2017 "Structuralization of Doctoral Education in Germany: An Interdisciplinary Comparison." *European Journal of Higher Education* 7 (3): 261-275.

- Rahimi, M., N. Yousofi, and S. Moradkhani. 2019. "How Research is Conceived and Practised in Higher Education? Assumptions of Masters/Doctoral Students and Instructors." *Research Papers in Education*. Advance online publication. doi: 10.1080/02671522.2019.1615119
- Sala-Bubaré, A., and M. Castelló. 2016. "Exploring the Relationship between Doctoral Students' Experiences and Research Community Positioning." *Studies in Continuing Education* 39 (1): 16-34.
- Skakni, I. 2018. "Doctoral Studies as an Initiatory Trial: Expected and Taken-For-Granted Practices that Impede PhD Students' Progress." *Teaching in Higher Education* 23 (8): 927-944.
- Suñé-Soler, N. and Monereo Font, C. (2020) Doctoral Support Networks: Characteristics and Associations with Research Conditions and Identity Development, *Quaderns de Psicologia*, 22 (2): 1-21.
<https://doi.org/10.5565/rev/qpsicologia.1576>
- Teichler, U. 2014. "Doctoral Education and Training: A View Across Countries and Disciplines". In *The Nurturing of New Educational Researchers*, edited by M. de Ibarrola, and L. W. Anderson, 1-26. Rotterdam: Sense Publishers.
- Wang L., and M. Byram. 2019. "International Doctoral Students' Experience of Supervision: A Case Study in a Chinese University." *Cambridge Journal of Education*. Advance online publication. doi: 10.1080/0305764X.2018.1518405
- Ward, A. M., and N. M. Brennan. 2018. "Developing a Student-Doctoral Education Fit Analytical Model to Assess Performance." *Studies in Higher Education* 45 (7): 1448-1460.
- Wright, T. 2003. "Postgraduate Research Students: People in Context?" *British Journal of Guidance and Counselling* 32 (2): 209-227.
- Xu, L. 2017. "Written Feedback in Intercultural Doctoral Supervision: A Case Study." *Teaching in Higher Education* 22 (2): 239-255.
- Yanhua, B., Kehm, B. M., and Y. Ma. 2018. "From Product to Process. The Reform of Doctoral Education in Europe and China." *Studies in Higher Education* 43 (3): 524-541.