

# **Conceptualising subjective well-being through Social Ecology Systems theory: A comparison of PhD and Professional Doctorate students' experiences.**

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## **Abstract:**

The issue of student well-being has risen up the policy agenda in the past decade and continues to influence how policy makers approach this complex and demanding concern. Although there has been important research undertaken in relation to full-time PhD students, relatively little attention has been paid to those who undertake a part-time professional doctorate (PD). Moreover, there is a gap in the literature in terms of a comparative approach that reports on the variety of experiences of PhD and PD students. This paper reports on a qualitative approach in which PhD and PD students were interviewed about their well-being as doctoral students. The findings not only highlight the challenges associated with doctoral study but also the personal fulfilment for students. Social Ecology Systems theory is adopted in order to enhance our conceptualisation of the subjective well-being of doctoral students.

**Keywords:** Subjective well-being; doctoral study; stress; role conflict; social ecology model; interpretative phenomenological analysis.

## **Introduction:**

The issue of the well-being of doctoral students has been identified as a concern for universities and governments. This concern over the well-being of doctoral students is reported across the globe from the USA (Pychyl and Little, 1998), Europe (Pyhalto, Toom, Stubb and Lonka, 2012; Schmidt and Hansson, 2018) to Australasia (Mackie and Bates, 2019). It appears to be a widespread phenomenon that threatens not only to jeopardise the health of students but to undermine the drive to recruit, develop and celebrate future talent. In much of the literature, discussion of withdrawal from doctoral study has highlighted the conduct of supervision as a major concern. Furthermore, most of the research has focussed on the experiences of students reading for a PhD, with few exploring the views of those undertaking a professional doctorate (PD) or comparing differing categories of doctoral programme. This paper aims to address this gap in the literature through a comparative understanding of how students enrolled on a PhD or a PD Doctor of Business Administration (DBA) at a Business School interpret being a doctoral student in terms of their subjective well-being and using social ecology systems theory to frame the discussion. The research adopted an interpretative phenomenological analysis (IPA) approach with an underpinning research question: How do students on different programmes describe the impact of doctoral research on their well-being? The findings point to the doctoral journey as a multi-faceted and complex experience that not only involves significant stress but also enhances personal esteem, as well as highlighting the importance of a supportive social ecology for individuals.

## **Literature review**

### **The problem of doctoral students' well-being: the empirical evidence**

There is an extensive corpus of research across the globe that highlights the issue of doctoral students' well-being as a matter of concern. Research has focussed on the

increasing prevalence of stress and anxiety amongst research students as a causal factor in withdrawal from doctoral study. Yorke and Longden (2004) had reported an annual cost of student attrition as £105 million in the UK, but, not only has the number of students increased since their research, the level of attrition in doctoral study has increased. Greener (2021) reports that completion rates range from an average of 50% in the USA, 40-83% in Canada to 62-72% in Australia, to 70-87% in the UK. This data points to the high levels of attrition and to the variance within countries, which is attributable to differing success rates across disciplines and institutions (Castello, Pardo, Sale-Bubare and Sune-Soler, 2017). This variation in attrition between disciplines is exemplified through reference to two UK universities: Aberdeen and Durham. At Aberdeen, during the period 2013/14 to 2015/16, doctoral completion rates ranged from 53% in Engineering and 59% in Business to 90% in Education and 91% in Psychology (Aberdeen University, 2017). However, at Durham, during the period 2015-16 to 2019/20, completion rates ranged from 55% in Education to 73% in Humanities and 90% in Physics (Payne, 2021). Completion rates for doctoral study during the period 2015/16-2019/20 also vary between universities in the United Kingdom from 93% at Glasgow and 91% at Imperial College London to 68% at Strathclyde and 65% at Liverpool (Payne, 2021). This issue of student attrition is important for a variety of reasons. Not only is withdrawal from a doctorate associated with a re-evaluation of career goals for students and personal disappointment, it raises questions as to the quality of doctoral supervision and institutional support.

Mackie and Bates (2019) report that research studies have indicated that 47% of USA doctoral students were depressed and 32% of European doctoral students were at risk of withdrawal from their studies. Furthermore, research undertaken both by the UK Higher Education (HE) policy community (Neves and Hillman 2017, 2018; Hewitt, 2019; Williams, 2019) together with the wider academic research community (Stubb, Pyhalto and Lonka, 2011; Schmidt and Hansson, 2018) have shown increasing concerns related to students' well-being and its impact on student drop-out from doctoral programmes. Neves and Hillman (2018) have reported the decline of three indicators of student well-being (life being worthwhile, happiness and low

anxiety) from 32-17%, 33-17% and 36-18% respectively since 2016. A fourth indicator (life satisfaction) has remained constant at 14% since 2017. Neves and Hillman (2017, p. 46) also reported differences in well-being across particular categories, with 'males a lot more positive than females'. Furthermore, the relevance of gender was confirmed in Sweden by Schmidt and Umans (2014, p. 2) who found that 'female doctoral students have more difficulties in coping with their studies, triggered for instance by experiences with or lack of different support systems'. However, Keyes, Myers and Kendler (2010), in their study of twins in the USA, found that genetic disposition and personal traits may be as important as environmental factors. Overall, it seems that the literature on subjective well-being not only highlights the difficulties in measuring well-being, but also raises the issues of gender and personal circumstance as important contextual factors in student well-being.

Although much research has been generated in the past decade in relation to the well-being of students, the data is not sufficiently detailed to provide insights into the experience of those studying PDs. In general, statistics published by UK government agencies such as HESA do not differentiate between different types of doctoral student (Mellors-Bourne, Robinson and Metcalfe, 2016; HESA, 2021). This is a matter of concern for those undertaking research into different formats of doctoral study. According to Mellors-Bourne, Robinson and Metcalfe (2016), the period since 1989 has seen the expansion of various forms of PD in the UK. Although all PDs comply with the characteristics ascribed by QAA (2011) to doctoral level study, they tend to be structured differently from the PhD and are concerned with investigating a problem in a professional context rather than from a purely theoretical perspective. For Wellington and Sykes (2006, p. 728), 'it is useful to conceive of a continuum of PDs to accommodate the diversity in nature, form, content and assessment'. As they have evolved in response to the perceived needs of particular sectors such as Engineering, Education and Business, the nomenclature associated with PDs appears to have settled into two categories. The first is the generic PD pioneered by Middlesex University and styled as DProf. This version of the PD is often conceived as being transdisciplinary in nature and not necessarily confined to

one profession (Middlesex University, 2021). The second is the PD that is named in association with a particular faculty or department, as in the case of the Doctor of Education (EdD) or the Doctor of Business Administration (DBA). It is within this context of curricular development that we should understand the diversity that exists within the concept of a PD as well as issues related to its recognition and distinctiveness within Government data.

When coupled with the focus of research on the experiences of those undertaking a PhD, there also appears to be a gap in the way we analyse the wider community of doctoral students, many of whom may be part-time and receive no funding for their studies. For example, whereas the first year of a PhD involves the preliminaries of the research journey, most PDs have a taught component that is assessed at doctoral standard (Mellors-Bourne, Robinson and Metcalfe, 2016). Importantly, this places particular pressures at an early stage 'pinch point' for those who study for a PD. In order to fully understand the experiences of doctoral students, future analyses should be able to access and contextualise data more explicitly.

### Well-being: A contestable concept

Our understanding of well-being as a concept continues to be influenced by competing philosophical approaches with well-being 'still lacking an overall accepted definition' (Schmidt and Hansson, 2018, p. 2). Much of the early work on the topic was influenced by research into mental health (Keyes, Myers and Kindler, 2010; Mackie and Bates, 2019), but the discourse has broadened in recent years so that 'definitions of well-being vary concerning: quality of life, psychological well-being, job satisfaction, engagement at work as well as stress, anxiety and depression' (Hargreaves, De Wilde, Juniper and Walsh, 2017, p. 5). An important development within the literature has been to focus more precisely on perceptions of well-being utilising the concept of subjective well-being (Corey, Myers and Kendler, 2010; Pyhalto, Toom, Stubb and Lonka, 2012). This discourse on subjective well-being is largely influenced by two philosophical traditions. The first is predicated on hedonism and the idea of happiness through short-term emotional gratification. The second is influenced by the eudaimonic tradition that views well-being in terms of

how a person functions both as an individual and a citizen within wider society. These competing philosophies have generated differing methodological approaches, with the hedonic research focussing on the emotional state on individuals, and eudaimonic work tending to contextualise well-being within a broader framework that includes career success and social status. This bifurcation of research has led to calls for an integrated approach that measures well-being in terms of emotional, psychological and social criteria (Gallagher, Lopez and Preacher, 2009; Keyes, Myers and Kindler, 2010).

Although differences in approach influence the discourse on subjective well-being, there is general agreement on those deleterious factors that are seen as negatively impacting doctoral students' well-being. These conditioning factors may be subsumed into three categories: institutional, programme-specific and personal identity and self-esteem. Institutional factors include the provision of resources, communication systems and the general administrative context that students encounter during their doctoral programme. Programme-specific issues such as the quality of supervision have featured prominently in much of the literature (Corner, Lofstrom, and Pyhalto, 2017). A final category- personal identity and self-esteem- pertains to individuals' preoccupation with their motivation and academic self-efficacy as a researcher (Pyhalto, Toom, Stubb and Lonka, 2012; Simpson and Sommer, 2016; Rayner, Lord, Parr and Sharkey, 2015; Pyhalto, Peltonen, Castello, and McAlpine, 2020), future career prospects, or their role as a work colleague or family member (Schmidt and Umans, 2014). Gallagher, Lopez, and Preacher, (2013, p. 2) place well-being within its wider relational social context arguing that 'whereas eudaimonic well-being is conceptualized as a primarily private phenomenon... social well-being represents primarily public phenomena, focussed on the social tasks encountered by adults in their social lives'. For many people, their self-worth and identity are closely aligned to the roles that they perform in every-day identity work (Ashforth, Kreiner, and Fugate, 2000). An understanding of how social context affects subjective well-being is therefore an important issue that is explored in the literature.

In addition to the quality of supervision, role conflict appears prominently in the literature on students' experience of doctoral study. For Shah and Marks (2004, p. 2):

Well-being is more than just happiness. As well as feeling satisfied and happy, well-being means developing as a person, being fulfilled, and making a contribution to the community.

For Gable and Haidt (2005), this relational context to well-being highlights the importance of flourishing functioning both for individuals and their wider social environment. Within positive psychology this idea of the flourishing individual is predicated on the notion of an equilibrium theory of well-being, or set-point theory (Headley and Wearing, 1989). This conceptualisation of well-being is therefore concerned with the identification of departures from an idealised state of equilibrium and that destabilises an individual's self-image. Cummins (2010) develops this notion of equilibrium for subjective well-being through an explication of the impact of life-changing challenges on individuals and their resultant behaviours. As such, in order to understand how the well-being of individuals may deteriorate, research must examine the ways in which a person's equilibrium may become unstable.

It is important to recognise that students enter a doctoral programme having established a number of *selves* through identity construction in the multitude of roles they perform through social interaction (Rayner, Lord, Parr and Sharkey, 2015; Ashforth and Schinoff, 2016). During their doctoral journey, however, many students assume new or more demanding roles that challenge the homeostatic equilibrium of their subjective well-being. It is common practice for PhD students, for example, to take on additional responsibilities such as seminar teaching in order to supplement their income and gain valuable experience in preparation for a future career in academia. In addition, there may be a variety of challenges that confront specific groups such as those with caring responsibilities (Schmidt and Umans, 2014; Gray, Agllias, Schubert and Boddy, 2015) or international students who encounter cultural shock (Ezebilo, 2012; Yan and Berliner, 2013). For those who combine full-time employment outside of the university and who are enrolled onto a PD there are

additional challenges involved in maintaining some form of balance between competing personal, professional and academic demands (Rayner, Lord, Parr and Sharkey, 2015; Simpson and Sommer, 2016; Goodall, Huggins, Webber and Wickett, 2017). For Schmidt and Hansson (2018), much of the literature has focussed on individual issues, such as supervisory practice, which has led to the lack of a multi-dimensional understanding of subjective well-being. In order to better understand the complexities of the subjective well-being of doctoral students, it is necessary to not only place the individual within their social context but also to understand how effectively they are able to cope with those extraneous demands that exist beyond their doctorate.

### Social ecology systems theory

Social ecology systems theory (Bronfenbrenner, 1979; Bronfenbrenner and Morris, 2007) provides a useful conceptual framework within which to understand how individuals interact with their environment (Golden and Earp, 2012). This social ecological model of human behaviour (SEM) has informed public health policy since its inception during the 1970s. SEM offers an insight into how complex social structures and processes may influence behaviour, as well as how interventions may be put in place to remedy health-related problems. SEM has been adopted in a number of contexts to design intervention strategies in a range of contexts including health and safety at work (Lee, Bendixsen, Liebma and Gallagher, 2017), health education (Golden and Earp, 2012), mental health and well-being (Reupert, 2017) and suicide prevention (Cramer and Kapusta, 2017). Table 1 describes Bronfenbrenner's (1979) conceptualisation of the interactions within complex social systems, with levels of abstraction from the individual.

<b>Descriptor</b>	<b>Exemplified by</b>
The individual	Personal history, goals and concerns
The microsystem	Those immediate factors on life, such as health and family support
The mesosystem	Civil society, such as the working environment or university
The exosystem	The nature and quality of social interaction, such as during supervision
The macrosystem	Societal values and beliefs that influence an individual



**Table 1. A summary of key terms in Bronfenbrenner's (1979) ecological systems theory.**

For Pychyl and Little (1998), a student's well-being is tied to the complex trade-off between manageability and meaning, and a reconciliation between their present and potential future contexts. Hence, studying for a doctorate can be viewed as an illustrative example of how individuals interact with the complexity of social and organisational systems, and SEM may usefully inform how we conceptualise doctoral students' interactions within the scholarly community and their extended social networks.

Pyhalto, Toom, Stubb and Lonka (2012) highlight the importance of the scholarly community as part of a student's social-ecological system. Furthermore, Stubb, Pyhalto and Lonka, (2011) have reported on how students' well-being differs in different contexts. This idea of the scholarly community as a social-ecological system of relationships and interactions can therefore usefully inform how we think of the doctoral students in context. Pychyl and Little (1998, p. 424) conceive of the doctoral project in terms of being a personal action construct that 'is personalised in content and is embedded in the context of the individual's life... reflect[ing] both broad cultural features and specific aspects of the individual's social ecology'. This maintenance of self-identity and self-esteem can be viewed as central to doctoral students' well-being, and the ways in which they develop coping strategies as determinants of success (Rayner, Lord, Parr and Sharkey, 2015; Goodall, Huggins, Webber and Wickett, 2017). Furthermore, for Pychyl and Little (1998, p. 459), the development of individual coping strategies through 'agency well-being' is a pre-requisite for successful completion of the doctoral journey. It enables the development both of academic self-efficacy and 'ecological competency' (p. 459) inferring that doctoral students should aim to develop their wider social-ecological awareness and skills, as well as their research capability. It therefore follows that institutions should aim to raise awareness of effective coping strategies amongst the student body and encourage the sharing of good practice between students through recognised communication channels. Moreover, SEM infers that we think beyond the

immediacy of the student community to the wider social context of the individual to include friendship groups and family life.

## Research method

The research centred on a Business School, which afforded a particular advantage to the researcher. In offering the research-oriented PhD and the practice-informed DBA, the Business School provided a convenient site for investigation and some degree of institutional commonality and consistency in organisational culture between these doctoral programmes. This approach could also be applied to other curriculum contexts that offer a PhD and a PD, such as Education or Engineering departments.

In order to elicit the lived experiences of doctoral students, the research adopted an approach predicated on the principles of interpretative phenomenological analysis (IPA). IPA is used widely in well-being research in a range of educational contexts (Shaw, Dallos, Shoebridge, 2009; Smith, and Shaw, 2017; Kettell, 2018; al-Makhamreh and Stockley, 2019), including that of doctoral students' well-being (Dickens, Ebrahim and Herlihy, 2016). IPA methodology originates in ideas drawn from phenomenology, hermeneutics and ideography (Smith, Flowers and Larkin, 2009). In doing so, IPA methodology aims to elicit how research participants make meaning from a given phenomenon (Clarke, 2009). Much of IPA research is centred on the use of semi-structured interviews as Miller and Minton (2016, p. 49) describe:

This approach is generally preferred because it allows researchers to engage in real-time in-depth conversations with participants and remains consistent with the ideographic commitments of IPA and allows the opportunity to build rapport with research participants and provide encouragement for meaningful reflection and sharing.

Importantly, this emphasis on inter-subjective hermeneutics within interviews means that the researcher becomes an integral component within the interpretative process itself (Volpato, Banfi, Valota and Pagnini, 2018). This interpretive role of the

researcher requires that they adopt a critically reflexive stance in which their own assumptions and thoughts are examined, and acknowledged. This issue is addressed in the Findings and Analysis through the approach suggested by Smith, Flowers and Larkin (2009) and Pietkiewicz and Smith (2012) that integrates a reflexive column into the process of data analysis.

The ideographic nature of IPA research leads to the generation of qualitative data from a necessarily small sample. For Smith, Flowers and Larkin (2009, p. 51), the process of data generation should avoid collecting too much data from too large a sample as 'it is more problematic to try to meet IPA's commitments with a sample which is too large, than with one that is too small'. Pietkiewicz and Smith (2012) suggest that IPA research should undertake between five and ten interviews. This guideline is typically adhered to in IPA research into the experiences of doctoral students. Rayner, Lord, Parr and Sharkey (2015) and Dickens, Ebrahim and Herlihy (2016) conducted IPA studies with ten interviewees, and Lech, van Nieuwerburgh, and Jalloul (2018) undertook six interviews with doctoral students. This IPA study reports on a research population of ten, as described in Table 2. This research population was both purposive and convenient in nature as it was intended to elicit the views of both PhD and DBA students who were enrolled at the same Business School.

Gender	Full-time researcher studying for a PhD	Full-time academic staff studying for a part-time DBA	Full-time employed outside of the university studying for a part-time DBA
Male	Ian- in his late thirties, who had worked in the financial sector  Frank- in his forties, who had worked in further education as a lecturer		Jean- in his middle forties with extensive commercial experience  Patrice- in his late fifties employed as a lecturer in an European university
Female	Marilyn- in her late thirties with a background in law  Megan- in her late thirties having worked in management finance	Harriet- in her forties, having worked in the Financial sector  Davina- in her forties, having worked in the building industry	Bianca- in her forties, working in an European university  Victoria- in her late thirties, working in an European university

**Table 2. A summary of those participants interviewed.**

As Beligatamulla, Rieger, Franz, and Strickfaden, (2019, p. 97) describe, given the ideographic purpose of an IPA interview, 'the goal of the semi-structured interview is to gain a first person description of a specified domain of experience, where the participant mainly sets the course of dialogue'. This prioritisation of the individual as the fundamental unit of analysis conditions the nature and conduct of the interview questioning. Hence, this study prioritised 'attentive listening' and follow-up questioning that explored each individual's personal narrative (Smith, Flowers and Larkin, 2009) with the interviews supported by a schedule of 14 questions that were 'more concerned with the how than the what of' (Miller and Minton, 2016, p. 49) undertaking a doctorate. For example, the schedule included: 'Tell me about how you feel about being a doctoral student?' (item 4, descriptive); 'Do you worry about the demands of undertaking doctoral level research?' (item 6, probe); 'Do you feel that your general well-being has suffered as a consequence of being a doctoral student?' (item 10, evaluative); and 'How has the Covid-19 emergency affected your doctoral studies?' (item 11, evaluative).

## Findings and analysis

IPA analytical approaches can be divided into two phases, the first being each of the participant's accounts of the phenomena. This is followed by the researcher's own interpretation of the participants' accounts, placing these into a wider context where appropriate (Miller and Minton, 2016).

Interviews were transcribed using voice-recognition software and double-checked for accuracy. Once the transcripts were judged to be accurate, the data was read through several times to gain a deeper understanding of the messages conveyed by the interviewee, with the initial codes highlighted in a range of colours. This colour-coding of initial data enabled cross-referencing to take place across the transcripts and proved useful when searching both for convergence and divergence in thematic development. The interview extracts presented in Table 3 adopt the approach taken by Stoten (2019), which modified the format suggested by Smith, Flowers and Larkin (2009) and Pietkiewicz and Smith (2012) in which qualitative data is organised into columns in order to facilitate analysis.

Interview extract (Harriet- DBA)	Reflective comments	Emergent themes
Being a part-time student and a mother and at the same time actually working. Taking this on, I was fairly new into teaching and I'd only been in FE and now into HE as I came into this. So, I think there's a lot of things and I think that's quite common for part-time and mature students. I do think it is solitary.	An insight into the complexity of the individual and their vulnerability	Mother, age, solitary

Interview extract (Ian- PhD)	Reflective comments	Emergent themes
It can be very lonely.... You're just thrown into the deep end and then you rise and then tell you to go back again. So, I think it is basically awful.	A sense of isolation and lack of support	Lonely, thrown in at the deep end, awful

<b>Interview extract (Marilyn-PhD)</b>	<b>Reflective comments</b>	<b>Emergent themes</b>
<p>I've put on quite a bit of weight.... I am an emotional eater, and this has not helped me at all. I also suffer from depression and this has not helped at all. I eat when I am stressed, I eat when I am working, I eat when I am happy as well, unfortunately.</p> <p>There needs to be more open discussion about help for doctoral students and I don't think it's just this university as I think it is overall as I speak with other doctoral students from other universities.... I feel really sorry for people who are doing part-time after work and have added pressure of family and work, and the DBA. There's not enough of an open conversation of the mental stress that you go through.</p>	<p>A very graphic and concerning representation of the detrimental impact on health and the imperative for more concerted action across the sector</p>	<p>Emotional eater, depression, stressed, help, added pressures (DBA), open conversation</p>

<b>Interview extract (Megan-PhD)</b>	<b>Reflective comments</b>	<b>Emergent themes</b>
<p>The main challenge for me, as a doctoral student is balancing research and family life.</p> <p>I have suffered a lot.... I have started like a machine with everything, which I feel guilty wasting time, So I think that's not good for my health. So, if I waste half an hour, I feel very guilty.... And, so many sleepless nights.</p>	<p>The reference to being machine-link infers a dehumanising process</p>	<p>Family, suffered, machine, guilty, health, sleepless nights</p>

<b>Interview extract (Frank-PhD)</b>	<b>Reflective comments</b>	<b>Emergent themes</b>
<p>What I perceive to be a full-time teaching workload and teaching takes precedence in my experience here, the research is secondary.... I think there's a split personality and I think that's one of the things I struggle with.</p> <p>At times, it's caused and that includes cremating two parents. That is the hardest thing I have ever done. And that's why you have the highs and lows; the lows have been excruciating to the point where on three separate times, I've thought I cannot physically do it.</p>	<p>An insight into the demands of being a researcher and teacher</p> <p>A stark insight into the stress of doctoral study</p>	<p>Workload, split personality, struggle</p> <p>Cremating two parents, highs and lows, excruciating, isolation, no template, big machine</p>

<p>I think the sense of isolation; if I didn't have the networks, there's no template for this and your supervisors are there but they're very busy people.... I think that we're a really small cog in a big machine.</p>		
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<b>Interview extract (Victoria-DBA)</b>	<b>Reflective comments</b>	<b>Emergent themes</b>
<p>I have encountered many challenges and well, I think the Covid situation. The fact we couldn't go to [English university]... that was that was disappointing and also we have all these courses online recorded so we didn't have interaction with professors.</p> <p>Well, it is very fulfilling and it feels like I'm really achieving something that I wanted for many, many years, and now it's really the time and I have been given this chance.</p>	<p>An insight into the disruption caused by Covid-19 but also the positive aspects of study</p>	<p>Covid-19, interaction, fulfilling</p>

<b>Interview extract (Bianca-DBA)</b>	<b>Reflective comments</b>	<b>Emergent themes</b>
<p>When I work on my DBA I feel excited... but I am actually under pressure now, because the deadlines.</p> <p>I could see instantly that one day per day per week is not doable I believe.... So I was working mostly from 11 to 2 or 3am for two or three weeks. I really felt it physically, at the end of January, I was thinking that is not this is working, it is not right.</p> <p>I feel that it is something that I want to prove... as a being proud.</p>	<p>The demands on time are clear but also is the positive message from study</p>	<p>Excited, pressure, not working, to prove, being proud</p>

<b>Interview extract (Patrice-DBA)</b>	<b>Reflective comments</b>	<b>Emergent themes</b>
<p>I mean this comes on top of a busy life- the challenge is to manage.... You need to relax and you to think, and then you need the inspiration to write. I mean you cannot just start writing and that is the challenge- how can I find the inspiration- and to change and think, I am a writer now.</p> <p>Even though sometimes I'm pretty very, very tired, I must say that- that is no drama by the way- but I mean I'm tired, but I mean that change has made me stronger.</p>	<p>The physical cost of study is evident but also the perceived benefits for career development</p>	<p>Busy life, manage, Inspiration, writer, tired, stronger, key, opportunity</p>

<p>Doing this doctorate has given me a sort of key which will allow me to start a new way of working.... For me, the doctorate is more than prestige it is a huge opportunity to continue longer in my work say in a different way.</p>		
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<b>Interview extract (Jean- DBA)</b>	<b>Reflective comments</b>	<b>Emergent themes</b>
<p>I really want to create opportunities. So, the level of thinking, to be more critical. Taking a next step, I think.</p> <p>It is heavily influenced by the current situation with Covid... so yes, I am indeed on the programme at the university, but I've never been to campus so I've never been able to meet physically with the staff or fellow students. The interaction is mainly virtual now, we made sure we did it ourselves. We created a WhatsApp group with the DBA cohort of this year where we could exchange some ideas.</p> <p>During the day I work for my job. In the evenings and weekends, dedicate myself to it to my study.... the impact is more time management so that's the way I approach it, like from 9 to 5 or whatever by 8 to 6, I work for my day job, and that that in the evenings.</p> <p>To me it gives you a purpose.... It's like every day I want to have a purpose to create a new horizon for myself.</p>	<p>The disruptive impact of Covid-19 is mentioned and the use of social media as a coping strategy, together with time management.</p>	<p>Opportunities, Covid-19, interaction, virtual, WhatsApp, time management, new horizon</p>

**Table 3. Extracts from the interviews organised to show reflexive comments and emergent themes.**

The analysis of qualitative data in IPA methodology is conducted in order to identify and develop super-ordinate themes (Smith, Flowers and Larkin, 2009; Miller and Minton, 2016; Kettell, 2018). This process involved becoming acquainted with the data through re-reading of interview transcripts and note-taking in order to identify emergent themes from the initial codes. This phase of the analytic process generated 295 initial codes, which were coalesced through analytic processes such as abstraction, polarisation and contextualisation to arrive at nine super-ordinate themes (Smith, Flowers and Larkin, 2009, pp. 96-99). At this stage the degree of



polarisation within the data in relation to the identification of differences between categories of participants was investigated and broad convergence (Smith, Flowers and Larkin, 2009) across the data was observed across all participant categories concerning home life and professional commitments. However, some unexpected differences were detected between those participants resident in the UK and those based abroad at another university. International students seemed to have a more positive outlook, which highlights the complexity within subjective well-being and could be attributable to a variety of factors including organisational culture and support. Overall, it infers that future research should explore positive affective aspects of doctoral experience as much as its deleterious impact.

Super-ordinate theme	Jean	Bianca	Victoria	Patrice	Harriet	Ian	Marilyn	Megan	Davina	Frank
<i>Challenges, including Covid-19</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Independent coping strategies</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Workload, work context and career development</i>	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
<i>Negative affective views &amp; health concerns</i>		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Home/family commitments</i>		Yes	Yes	Yes	Yes			Yes	Yes	Yes
<i>Positive affective views of doctoral study</i>	Yes	Yes	Yes	Yes		Yes				Yes
<i>Supervisory / administrative support</i>	Yes	Yes	Yes	Yes			Yes		Yes	
<i>Networking with students</i>	Yes	Yes	Yes	Yes	Yes		Yes			
<i>Regulations and deadlines</i>		Yes	Yes			Yes			Yes	

**Table 4. A tabulation of the recurrence of super-ordinate themes, after Smith, Flowers and Larkin (2009).**

As can be seen in Table 4, the nine super-ordinate themes can be summarised as: work context and workload (33); challenges, including Covid-19 (20); university regulations (46); supervisory and administrative support (24); social networking and mutual support within the student body (17); coping strategies (17); family life (29), positive affective (27), and negative affective and attendant health issues (74). The super-ordinate themes were organised in stage 5 through a table across the sample in order to identify recurrence and possible areas of convergence and divergence. As Pietkiewicz and Smith (2012, p. 13) describe, 'the table of themes opens up into a persuasive account that explains to the reader the important experiential items that have been found during the process of analysis'. This use of analytic tabulation provided a convenient method of cross-referencing data across the sample as well as a concise form of reporting. In addition, the data was organised in a hierarchical form according to the prevalence of themes (Love, Vetere and Davis, 2020). So, for example, the challenges involved in undertaking a doctorate was mentioned across the sample whereas references to administrative regulations and deadlines was less common.

## Discussion

This paper set out to address an underpinning research question: how do students on different programmes describe the impact of doctoral research on their well-being? The structure, delivery and mode of assessment for a PhD and a DBA are very different. As such we could anticipate that, because of different 'pinch points' during the doctoral journey, participants would report significant differences in their experience of undertaking a doctorate. Instead, the data generated highlighted the emotional challenges involved in self-management through a doctorate. Irrespective of whether a student researches for a PhD or DBA, there are periods during the doctoral journey where 'pinch points' impact of well-being and self-confidence. For the DBA student this stress may occur relatively early during the coursework stage of the programme, whereas a PhD student may encounter anxiety during data collection. Overall, however, common institutional procedures, such as annual

progression, mean that there is also some degree of similarity in the doctoral journey. This paper reports on three groups of doctoral students: PhD students; internal members of staff undertaking a DBA; and international students undertaking a DBA. Although all mentioned the pressures from home life, those international students who were obliged to study remotely reported the highest levels of personal fulfilment. This could be because of their potential for career advancement as a result of undertaking a DBA, or differences in teaching workloads or institutional support.

SEM theory not only provides a conceptualisation of the individual within their wider societal context, but it also offers us a framework within which to develop policy on a multitude of levels including government, the HE sector, and individual institutions. SEM theory has been applied extensively in health policy research, especially in relation to well-being and mental health. Its value is to provide a conceptual framework within which to consider the impact of the wider social environment on individuals and their well-being. By focussing on the social context, SEM recognises the importance of family and support networks outside of the formal structures put in place by universities. In this study, SEM revealed differences between UK-based and international students which may be due to differences in national and organisational cultures.

This paper reports on the resilience of doctoral students and their capacity to navigate through the various pressures engendered by work, study and home responsibilities. Resilience can be tied to the idea of equilibrium theory (Headley and Wearing, 1989; Cummins, 2010) and the ability to balance competing pressures (Stubb, Pyhalto and Lonka, 2011). McApline, Skakni and Pyhalto *in press* highlight the benefits of family support in maintaining a sense of balance. Furthermore, Pyhalto, Peltonen, Castello and McAlpine (2020) report on the importance of intrinsic interest in motivating and supporting resilience, but high levels of commitment require effective support mechanisms within universities and from personal networks. One of the impacts of the current Covid-19 pandemic has been to

highlight the importance of administrative guidance and other support mechanisms for research-focussed students.

Although there are often commonalities that exist between those who study PhD and DBA degrees, there are also importance differences. For many universities, the need to address the needs of full-time PhD students has influenced the evolution of support systems. In recent years, given the diversification in the doctoral community through PDs and expansion of part-time provision, universities should tailor their support more closely to the needs of those who combine full-time employment, home responsibilities and doctoral study. Future support may well involve more extensive guidance pre-entry and during the early stages of doctoral study where confidence levels may be low and research skills not fully developed. This agenda extends beyond the role of the supervisor, which has dominated much of the literature on doctoral success.

### Limitations of the study

SEM has been subject to much scrutiny and questions have been raised as to the application of much of Bronfenbrenner's work in practice (Stokols, 1996; Tudge, Mokrova, Hatfield, and Karnik, 2009). Much of the criticism levied against SEM is that it is unbalanced in its focus on the individual and not sufficiently concerned with the effectiveness of interactions within the wider community and administrative systems. However, for Erickson, Ghazinour and Hammarstrom (2018, p. 431), SEM can be useful because:

Dual focus both on the surrounding environment and on personal attributes for explaining and promoting mental health can be achieved by utilizing early concepts of Bronfenbrenner's ecological theory, as long as interactions between and within ecological systems and individual factors are thoroughly investigated and considered.

Therefore, this research can only contribute to the discourse on student well-being if it invokes the development of policy not just at institutional level but more broadly across the HE sector and with the wider health care community both nationally and

internationally. As such, this paper is limited by the nature of its impact on the wider policy process.

## Conclusion

The research exercise aimed to address an underpinning question: How do students on different programmes describe the impact of doctoral research on their well-being? This paper reports on the impact of doctoral study on students and how they manage their subjective well-being through a combination of resilience, commitment and support from both within and beyond the university. Although doctoral study engenders a range of challenges from the cognitive to emotional, and from data collection to time-management, it is fundamentally related to the issue of how students are able to cope and balance their subjective well-being.

Future research could usefully explore the importance of support networks beyond the formal structures put in place by universities. Given that the historic demographic of the PhD student no longer typifies the doctoral community, research should focus more on the nature of students' subjective well-being and the idea of equilibrium as well as the impact of particular programme designs. In particular, important research could be undertaken in relation to possible correlation between 'pinch points' during the doctoral journey such as induction, annual progression, and during writing-up. PDs are structured differently from the traditional PhD and it is important that we recognise the need for diversity in response to differing stress factors if we are to promote students' well-being. This research can inform policy development across the sector and help refine existing support mechanisms for the diverse needs of our doctoral students. Finally, SEM theory provides a conceptual framework within which to promote this conversation between Government, the health care system and universities.

## Disclosure statement

The author confirms that this paper is their own work and is not published elsewhere. The citation of all sources is intended to conform with the Harvard referencing system. There is no conflict of interest to report.

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