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Exploring doctoral students' expectations of work-based skills training

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Exploring doctoral students' expectations of work-based skills training

Abstract

Purpose - Doctoral students are expected to undertake work-based skills training within their doctoral studies in areas such as problem solving, leadership and team working. This study explores student expectations of doctoral training within a UK Higher Education context.

Design - The data for the study was gathered via two focus groups conducted among doctoral students from different faculties in a post-92 UK University. Participants were selected using a snowball sampling approach.

Findings - The findings suggest that the expectations of doctoral students are contingent upon their year of study, study mode, perceived fit between training goals and available training, peer recommendations, Word-of-Mouth (WoM) and the scholarly support they received from their supervisors.

Practical Implications - The study suggests a better understanding of students' segmentation can help Higher Education Institutions deliver training that meets the expectations of doctoral students in a way that result in zero or a positive disconfirmation.

Originality/Value – This paper develops and deepens the understanding of the doctoral students' expectations of work-based skills training and highlights the need for universities to adapt their doctoral training according to the expectations of different student segments.

Keywords: Doctoral Students; Expectancy-Disconfirmation Theory; Work-Based Skills; Expectations; UK Higher Education.

Paper type Research Paper

Introduction

Researcher development is an integral part of the doctoral degree (Pilbeam, Lloyed-Jones, and Denyer 2013). Increasingly researcher development is needed to provide doctoral students with the work-based skills they require to succeed in their careers (Roberts 2002).

Most research conducted on doctoral students' perceptions of work-based skills training suggests that they see researcher development in a positive light, understanding the value of additional training and preparation for future employment (Gilbert et al. 2007; Manathunga, Lant, and Mellick 2007; Pearson and Brew 2002). These work-based skills refer to "competencies that education should provide regardless of the specific field and that can be used in a variety of tasks" (Jaaskela, Nykaneen and Tynjalal 2016). Such work-based skills typically include skills such as project management; problem solving; leadership and communication skills; entrepreneurship; collaboration and teamwork (Manathunga, et al., 2007). However, we have limited understanding of the expectations of doctoral students regarding the work-based skills training offered to them in higher education. Understanding the doctoral students' expectations of work-based skills training is important for several reasons. First, the skills, capacity and competences demanded by employers have changed (Baschung 2010) and employers often perceive that there are clear gaps in employment skills and what is being offered to doctoral students' throughout their doctoral studies (Bridgstock 2009).

Second, as highly qualified workers doctoral graduates often have a more complex career orientation than others (Canal-Dominguez and Wall 2014).

Traditionally, doctoral students pursued the academic career paths upon completion of their doctoral degrees (Baker and Pifer 2015; McAlpine and Emmioğlu 2015; Wildy, Peden and Chan 2015). However, academic positions tend to be provisional and insecure (McAlpine and Emmioğlu 2015). Moreover, the limited career opportunities available for doctoral students in academia signal that it is extremely important for doctoral students to develop a range of skills and experiences to ensure they are prepared for careers beyond academia (Jones and Warnock 2015).

However, the expectations of such work-based skills training would differ according to the career and life sage of the doctoral students. For example, the needs and the expectations of doctoral students with a large amount of professional experience and employability skills may differ from young people, graduating with a higher degree The latter are facing a very different job market that require them to have several work relevant skills that are often possessed by highly experienced professionals. In addition, some students may only be aware of or focus on short-term skills required to complete their studies and may not be concerned or aware of the importance of developing work-based skills while studying for a doctorate. Hence, with many doctoral students not having professional experience, universities need to take responsibility for identifying students' development needs.

Hence, doctoral training programmes should provide sufficient opportunities for doctoral students to develop those skills required for future employment. Lack of opportunities to develop such skills may raise concerns among doctoral students about their ability to succeed beyond their research degree (Baker and Pifer 2015).

Furthermore, doctoral students may also leave their studies due to poor fit between their expectations and work-based skills training provided through the doctoral studies (Boehe 2016). Thus, understanding the doctoral students' expectations of training is important to develop programmes that meet or exceed both doctoral students' expectations and the needs of employers.

Therefore, the present study will explore the expectations, sources and challenges associated with the training programmes offered by universities integrating the expectancy-disconfirmation theory (EDT) by Oliver (1980). More particularly, this study will explore doctoral students' expectations associated with work-based skills training and to what extent they are satisfied with the current training provided, sources of such expectations and the challenges associated with undertaking work-based skills training while studying for their doctorate. This study however, does not intend to demonstrate or measure the doctoral students' level of awareness about the need for or the significance of work-based skills training for future employment. Such research would however, provide an interesting avenue for future research.

This study makes three key contributions. First, the insights gained from the study will allow university policy makers to obtain an understanding of expectations of doctoral students with regards to skills training and design programmes that are congruent with their expectations in a way that minimises negative disconfirmation. Second, this study identifies that expectations vary according to students' geographic, demographic, behavioural and psychographic characteristics and outlines a segmentation approach to assist universities to better understand their students' needs

and develop relevant training. Third, the rich insights gained from this exploratory qualitative research will also provide an opportunity for future researchers to design and implement further studies in other contexts, on expectations, sources and concerns associated with transferable skills training programmes.

This paper is organised as follows. We begin with a review of the existing literature to explore the perceptions of doctoral students about doctoral training. Thereafter, the expectancy-disconfirmation theory will be introduced and literature related to the expectations and sources of doctoral students' expectations of doctoral training will be presented. We then outline the research methodology of the study. The findings and discussion will also be presented and conclusions will be drawn with relevant implications. Finally, limitations of the study will be presented with an indication of areas for further research.

Literature review

What is doctoral training?

Formerly a PhD was considered as an apprenticeship, where the student worked with the supervisor to gain skills that are required to pursue a career in academia (Jones and Warnock 2015). Therefore, doctoral students traditionally moved to an academic career after graduation with the intention to obtain a tenure track faculty appointment (Baker and Pifer 2015). Today however, many doctoral graduates are employed in roles outside of academia. For example, a survey conducted on career destinations of doctoral

students found that only 44% of doctoral graduates were employed in academia (Hunt et al. 2010). Similarly, in science, technology, engineering and maths (STEM), only 30% of doctoral graduates became early career researchers (Royal Society 2010).

Given the range of destinations for doctoral students outside of academia, it has been suggested that doctoral programmes can be too narrow, lacking broad based professional development opportunities, which subsequently produce overly specialised graduates who struggle to adapt in the workplace (Manathunga et al. 2007). As a result of this, universities and research bodies/councils such as Vitae and Research Council UK are enhancing and developing the service they provide through work-based skills training and development programmes for doctoral students to undertake whilst completing their research.

Doctoral graduates who move to employment outside academia have been found to value skills such as problem solving or analytical skills more than soft skills (Kyvik and Olsen 2014). They also endorse the integration of work-based skills training into the doctoral training experience and interpret work-based skills as those which will lead to employment (Borthwick and Wissler 2003). Hence, it is extremely important to identify doctoral students' expectations regarding doctoral training, sources of those training expectations and challenges associated with such training.

What do they expect? - Expectancy-Disconfirmation Theory

Expectancy-disconfirmation theory (EDT) developed by Oliver (1980) suggests that satisfaction with a service is determined by comparing perceived performance against expectations (Tam 2005). Any disparity between expectations and the perceived performance may result in disconfirmation which in turn may influence the level of satisfaction (Oliver 1980). Disconfirmation refers to the extent to which the performance of a product or service meets, exceeds or fails to satisfy the expectations of the user. If the performance is above the expected standard, a positive disconfirmation occurs. However, if the expected product /service performance is in line with the actual product/service performance, a zero disconfirmation occurs. Performance below the expected standard results in a negative disconfirmation (Oliver and Swan 1989; Oliver 1993).

The source of expectation is an important consideration. Human behaviour is often influenced by expectations of other people or in impersonal ways such as through written rules, informal norms or values (Kyvik 2013). Hence, the recommendations of peers and supervisors can have a significant influence on doctoral student's expectations (Sultan and Wong 2010). Moreover, as researchers, doctoral students are also expected to provide support for peers in an instrumental manner, through providing feedback, and sometimes through providing pastoral support (Pilbeam et al. 2009).

The main purpose of supervision is to provide the support and guidance to doctoral students throughout their studies (Sambrook, Stewart, and Roberts 2008).

Supervisors also play a significant role in ensuring the success of doctoral students, which ultimately determine their employment outcomes (Platow 2012). Jairam and Kahl (2012) emphasise that students expect both emotional and professional support from their doctoral supervisors. It has been found that the academic direction and the personal support gained from the supervisors play a significant role in achieving success in doctoral studies (Hakkarainen et al. 2016, Zhao, Golde, and McCormic 2007). Furthermore, it is widely acknowledged that doctoral students have both scholarly needs associated with research productivity, and psychosocial needs, such as those associated with personal and professional development (Linden, Ohilin, and Bodilin 2013). Therefore, supervisors are expected to provide both scholarly and psychosocial support for doctoral students. Moreover, supervisors play a significant role in assisting doctoral students to understand the skills and capabilities needed to be successful in their career (Hill and Walsh 2010).

There are also different expectations about the need for work-based skills training and the value of career guidance and more particularly, it has been found that doctoral students are less concerned with factors such as industry links and career guidance (Woodall, Hiller and Resnick 2014). Many students and supervisors often perceive complementary skills as irrelevant, partially due to the basic nature of such skills (Wall and Welsch 2013). It is therefore suggested that work-based skills training should be re-positioned and marketed in relation to the challenges of the labour market, thus attempting to raise awareness of why these broad based skills are important and to minimise the chances of students and supervisors undermining the training (Wall and Welsch 2013).

The rise of non-traditional and part-time students, plus professional doctorates, has resulted in a debate on the goals of doctoral programme (Baker and Pifer 2015). Part-time students account for over a quarter of all postgraduate research student in the UK, with 25% of the total 113,175 student number undertaking their study on a part-time basis (Universities UK, 2017). Furthermore, lack of congruence between work-based skills possessed by doctoral students and skills expected by employers may prevent doctoral graduates obtaining the knowledge or confidence required to develop career goals and to obtain employment and post-doctoral training (Baker and Pifer 2015). Therefore, further support and guidance should be given to doctoral students on transferable skills expected from them by employers. Additionally, indicating their concerns on how work-based skills should be transmitted, Kyvik and Olsen (2014) argue that the training offered should reflect the dynamic nature of the academic environment and must be congruent with the academic and non-academic environment.

Segmentation strategies are often used to ensure a better 'fit' between the product/service offerings and expectations of groups using the product/service. Segmentation theory suggests that a better understanding of the needs of groups according to their characteristics such as geographic, demographic, behavioural and psychographic can encourage a closer match between expectations and satisfaction (Wind 1978). In a higher education context, several studies have explored segmentation amongst undergraduate and postgraduate students (Mutz and Daniel 2013; Person et al. 2014), however there has been limited examination of segmentation among doctoral students to meet their expectations.

What are the challenges for doctoral students?

The training that the doctoral students undertake during their studies has an effect on the reputation of the university, the level of functionality of the student as a researcher and the overall development of the field (Mello, Fleisher, and Woehr 2015). However, previous research has identified several issues associated with doctoral training. For example, part-time students may find it difficult to reconcile their goals and may experience difficulties in gaining support, validation and placements from universities (Baker and Pifer 2015).

PhD students often have varied circumstances and they are diverse according to their mode of studies (Collinson and Hockey 1997, Watts 2008). The circumstances of part-time students may differ from those of full-time students as part-time students often hold responsibilities that require shifting their identities as a student/professional or parent (Watts, 2008). Part-time students may also remain strangers to the university environment as they are often detached from the university (Teeuwsen, Ratković, and Tilley 2014). In addition, compared to full-time students, part-time students with professional experience may have expectations that differ from those studying full-time and aiming for an academic career. Furthermore, McAlpine and Emmioglu (2014) identified that a student's personal history comprised of prior intentions, relations and experiences has a significant effect on the way doctoral students engage in their studies and develop intellectual independence. It has also been found that the expectations, needs, and behaviours of foreign students vary compared to locals and the cultural background has a significant effect on their doctoral education experience (Janta, Lugosi, and Brown 2014). On the other hand, concerning female students, it has been

found that being a mother had a significant effect on doctoral study due to domestic demands and balancing home and academic life (Brown and Watson 2010). The challenges of balancing childcare responsibilities with academic life are noted (Howe-Walsh and Turnbull, 2016) and the effect of motherhood in developing careers in academia has been seen as a challenge for most women (Howe-Walsh et al. 2016).

The present study explores the expectations, sources and challenges associated with the training programmes provided to doctoral students integrating the expectancy-disconfirmation theory (EDT) by Oliver (1980). Using an exploratory methodology we explore how doctoral students experience skills training.

Methodology

The data for the study was gathered via focus groups conducted among doctoral students in a post-92 UK University. Two focus groups were held with five and six participants respectively. The numbers and group size was determined based on the prior research by Barnes (2007); Greenbaum (2000); and Malhotra and Birks (2006). Participants were selected using a snowball sampling approach where the interviewees were asked to recommend others to take part (Brewerton and Milward, 2001). They were assured of anonymity and confidentiality and all participants were identified by a unique code instead of their real names to assure anonymity. The study uses a small sample size, which prevent the generalisability of the findings. This means that further research to qualify the expectations to a wider population is needed to prevent implementing change that is only relevant to a small sample size. Additionally,

selecting respondents using a snowball sample may have resulted in a homogeneous sample with similar views and experiences. This suggests that the results of any practical reform may not be generalisable as the snowball sample may have led to a reconfirmation of expectations and issues identified by respondents.

The focus groups took place in a meeting room and were held at different times during the day to increase the opportunity for participants to attend. Each group lasted up to one hour and data was recorded using an audio device to ensure accuracy and transcribed verbatim to enhance the rigour of the study (Bryman and Bell 2007). A discussion guide was developed to direct the flow of conversation during the group and help the moderator ensure the discussion remained on topic (Greenbaum 2000). The discussion guide comprised of open ended questions focusing on three themes: (1) expectations of doctoral training, (2) sources of expectations of doctoral training and (3) perceptions on overall training experience and challenges associated with the training. The discussion guide was useful to ensure that the same areas are explored in each focus group (Creswell 2014).

In terms of expectations, the respondents were asked to describe their key training needs, whether they expect to develop work-based skills during their doctoral studies and / or more research based skills that satisfy their immediate research needs. They were also asked to explain whether their training needs changed over time as they progress. Concerning the sources of training expectations, the respondents were asked to indicate what factors influence their training expectations and how these influence their training choice and perceptions. Finally, the respondents were asked to provide

insights into their overall training experience and any challenges associated with the training programme.

All focus groups were audio-recorded for later transcription (Krippendorff 2013). Following transcription, the data was analysed separately by two independent coders using a tiered coding system (Anderson 2009; Rudolph, Penz, and Ghauri 2005). First, axial coding was undertaken which involved searching for themes which are interrelated, looking for patterns and relationships (Goulding 2005). The analysis involved a high level of reflection upon both the transcripts and literature thus adding a quality aspect to the data analysis process (Hibbert et al. 2014). Finally, the data was analysed using selective coding which is where all categories are unified around central core category to help answer the research questions (Corbin and Strauss 1990). An agreement between the coders was achieved on 95% of data, before analysing the transcripts through QSR's NVivo 11 Pro software, which further shed light on additional nodes to include in overall coding patterns.

Respondents' profile

Eleven doctoral students, two part-time and nine full-time, participated in the research. Students ranged from first year to third year students, representing a range of stages within the degree process. In addition, there was a mix of subject disciplines represented with participants from Business, Creative and Cultural Industries, Humanities, Science and Technology faculties. All students came from the same institution, which represent a homogenous sample group. However, this prevents the generalisability of the study to

other institutions. The female to male ratio was 6:5. A profile of the focus group participants is given in Table 1.

[Table 1 near here]

Findings and Discussion

The thematic analysis of the focused groups indicated that the research student expectations differ according to the mode of study (full-time vs part-time), the stage of their studies and their level of professional experience. The following themes emerged during the focus groups:

- Doctoral student's expectations on training

- Sources of doctoral student's expectations

- Challenges associated with doctoral training

Overall, the findings suggest that the expectations of the doctoral students are contingent upon their year of study, the study mode, perceived fit between training goals and available training, peer recommendations, word of mouth (WoM) and the scholarly support they received from their supervisors. For example, the findings highlight that doctoral students who are in the early stages of their research are more concerned with developing skills associated with immediate research needs than those required for future employability. While some students were aware of the importance of developing employability skills, most were focussed on their immediate research needs rather than skills-related training.

The following sections will present the findings in detail.

Doctoral students expectations on training

It was found that the training expectations of doctoral students differed according to their year of study. For example, students in year 1 were concerned with obtaining an overall understanding of research methods to assist with their immediate research problems. Hence, they were more focused on developing their level of awareness of available training on research methods and data analysis techniques (e.g. particular software or technical aspects) and research methods. This also demonstrated students' eagerness to learn new things and their determination to develop skills that are directly relevant to successful implementation of their research.

> *"I think I need as many introductions to various different software packages and research methods. I'm at the very early stages. The first thing I'm going to need is knowledge about software for my research and to learn about technical things so I can get started".*
>
> *[Participant H: Year 1 student]*

> *"I think right now short term goals for immediate needs. Having recently started I am keen to find out what can help me in my research. I'm researching now rather than writing or thinking about my future career".*
>
> *[Participant I: Year 1 student]*

Furthermore, some participants revealed that they expect to develop broader skills in future, but the priority was on developing skills related to specific research projects.

> *"Definitely in my last year I would be considering broader skills but for me, I need training to solve some specific research problems. For things like project*

management, I'm too busy at the moment. Maybe at the end of my second year that would be good"

[Participant I: Year 1 student]

"I think actually a lot of the time it is more immediate research problems rather than thinking about my transferable skills for employment. My training needs at the moment revolve around data collection as I'm in that phase and I need skills to analyse qualitative data. I went on the first NVivo course which was fabulous but I need to [go to the] second one which is already booked. As I am in my first year I haven't decided necessarily what my methodology is so I want to experience all of the workshops I can at this early stage"

. [Participant C: Year 1 student]

In contrast when moving up to year 3, it was evident that students were expecting to achieve more in-depth knowledge, specific to their own research problems. Thus, the key goal at the latter stages of doctoral studies tends to be on achieving more specific in-depth knowledge and most doctoral students perceive the training courses that are currently offered to them to be more generic.

Moreover, most doctoral students were seeking to develop skills that would satisfy their short term immediate research needs.

"Looking back I was very much looking for help with my immediate research, very practical skills to help me advance in that respect, so with research and design, the whole process will teach me how to survive long term. I wasn't expecting the training programme to teach me long term skills necessarily. Some of the programmes as mentioned earlier can be a bit too general. I went on the 'How to manage your research project training' and it was so generic that I couldn't do much with it and in fact I think the whole process of doing a PhD actually teaches you those skills".

[Participant G: Year 3 student]

"I need my training to be in-depth to help with my research problems".

<div align="right">

[Participant K: Year 3 student]

</div>

Furthermore, some students were not concerned with developing their employability skills due to their professional backgrounds and prior expertise. For example, doctoral students with previous professional experience were less concerned with developing work-based skills such as project management, interview or presentation skills than those without. This is in line with McAlpine and Emimoglu (2015) who argue that the background of doctoral students has a significant influence on how they shape their academic experience.

Thus, the doctoral training offered was seen not to take into consideration any prior professional experience of the doctoral students and their needs.

"Having had a long career I know areas where I need additional skills or upskilling or refreshing skills and I think I'd look at things I need for my career at the end of my PhD. I mean, I don't know what I want to do yet after my PhD so I'm not really thinking about skills for then. I think some of the programme is clearly aimed at people who have only ever studied and been in education, so you know; I did those before I went into industry twenty years ago, so I don't need those".

<div align="right">

[Participant C: Year 1 student]

</div>

"I have presented at many things over my career and I don't feel I need general skills training, although I guess it is something that I could refresh before I leave".

<div align="right">

[Participant D: Year 1 student]

</div>

These findings are in line with Woodall et al (2014) who found that the doctoral students were less concerned with factors such as industry links and career guidance. Similar to McAlpine and Emmioglu (2014) these findings also demonstrate that the personal history of doctoral students comprised of prior intentions, relations and experiences, has a significant effect on the way they engage in their studies and develop intellectual independence.

Sources of doctoral student's expectations

In line with Jairam and Kahl (2012); Sultan and Wong (2012); Linden et al. (2013); Hill and Walsh (2010) the participants revealed that in the initial stages of their studies, the advice given by their supervisors was instrumental for them to determine which training course to attend. For example, Participant C pointed out that

> *"At the beginning my supervisor said to look for anything that says 'introduction to' and you know try and get on those to start with to give yourself a general grounding".*

<div align="right">

[Participant C: Year 1 student]

</div>

Moreover, confirming the views of Kyvik (2013), doctoral students also mentioned that the opinion of their peers had a significant influence on their expectations of training. Peer opinion was seen to be a prime factor in determining which training session to attend and usefulness of training offered. Participants also emphasised that engagement with their peers was important as it allowed them to get an

idea of the nature of the workshop prior to attending it and select the most appropriate training.

> *"I have for example taken opinions from colleagues on whether to attend, as I think we mentioned earlier there is a writing group and I think that's something we all probably feel we could develop as we've never written a PhD before. Someone I know attended and said, "oh no, don't do this as it is far too geared towards international students who struggle more with English rather than actual tips to help improve your writing style", so I didn't even bother. I was definitely influenced by my colleagues there. Again that comes back to the idea of grading… actually if we knew at what level it was aimed at, that would help".*
>
> *[Participant C: Year 1 student]*

> *"In my school we definitely share with each other which ones we've been to. For example someone will come back and say "no don't bother it was too general", so this sometimes saves you wasting time. Also sometimes facilitator's change, which affects how you perceive the programme"*
>
> *. [Participant G: Year 3 student]*

> *"I share with my colleague which ones have been worthwhile and useful".*
>
> *[Participant F: Year 2 student]*

Challenges associated with doctoral training

In line with Borthwick and Wissler (2003) the findings of this study revealed that doctoral students found it challenging to achieve a balance in their time between their research and training. Busy workloads, particularly among part-time students prevented them from attending the training during working hours.

> *"They are very time dominated for me. I'm supposed to be writing my lit review now. I'm so pushed for time between the full time job and my part time PhD and I*

can't find any training at the moment to help me with that outside of [training]
because classes are full at this time. It's hard to access training on the timescale I
have to fill my needs at the moment".

<div align="right">*[Participant A: Year 2 student]*</div>

Moreover, lack of flexibility in the training schedule was raised by most doctoral students. Some respondents also suggested that the programme should consider alternative approaches to make the training more flexible to students with different studying modes and working styles.

"I'm a full time student and my training needs revolve around my needs to learn.
I'm trying to go to as much as I can because I want to grab it while I can, it's sort
of like a passing bus if you miss one there might not be another for another 6
months or a year".

<div align="right">*[Participant D: Year 1 student]*</div>

On the other hand, confirming the views of Watts (2008) participants in this study revealed that students are often concerned with finding time to attend training along with their personal caring and professional commitments.

"I'm a parent, so sometimes there's a problem fitting it around childcare… every
way you look at it time becomes a problem because full time and part time students
differ so much. There are students who have to travel far. Maybe there needs to be
more than two iterations per year, maybe more like three or four".

<div align="right">*[Participant G: Year 2 student]*</div>

"I'm part time. There's not many training on towards the end of the day or early evening which would fit around my working day"

[Participant F: Year 2 student]

Moreover, the participants also highlighted the need to offer more flexibility in training to suit doctoral students with different working styles and those with teaching commitments.

"It is a challenge I think for the [training] to offer enough flexibility for people who are going to work differently, maybe more advertising of the online stuff would help with people who can't make certain times. Maybe more advertising of things like pre-courses or taster sessions for software and different workshops would allow people to try things for say half an hour to see if it's appropriate before booking on to a 3-4 hour session".

[Participant C: Year 1 student]

"I think actually repeating some more sessions over the summer would really help for those who start in February as sessions are too fully booked sometimes".

[Participant H: Year 1 student]

This suggests that repeating classes at different times or using technology could be an efficient and financially viable solution. Some respondents also indicated the importance of recognising their teaching commitments and scheduling training in a way that allow them to attend training outside their working hours. For example, Participant A and J highlighted that;

"It's especially tough with teaching commitments, I often find I'm double booked, I have to teach and can't let my students down but it means I'm missing out on workshops. It would be useful if there was a bigger range of times that didn't conflict with teaching timetable. For example, more training after the working day and more recognition of that in the programme. Maybe a range of those introductory courses more in the evenings, particularly for first years who are trying to work out what they need and when they need it".

[Participant A; Year 2 student]

"Many of us teach and actually I don't think enough of the programme takes into account teaching timetables as I need more things over the summer when I don't teach, but there aren't any"

.[Participant J: Year 1 student]

Conclusions

The findings of this study reveal that developing work-based skills is not seen as a priority for doctoral students since they are more focused on their individual research. This suggests more needs to be done in the Higher Education sector to change attitudes of doctoral students towards transferable skills and further engage them in wider work-based skills training.

According to expectancy –disconfirmation theory, if the performance of the product/service is above the expected standard, a positive disconfirmation occurs. However, if the expected product /service performance is in line with the actual product/service performance, a zero disconfirmation occurs. Performance below the expected standard results in a negative disconfirmation (Oliver and Swan 1989; Oliver 1993). In line with this, this study found that in some cases a lack of fit between the

training programme and the study mode (e.g. full time vs. part time) and personal circumstances (e.g. of students with caring responsibilities) have led to negative disconfirmations regarding the training offered to the doctoral students. Hence, institutions need to consider what expectations their students have of doctoral training and work-based skills training in particular. The findings suggest that doctoral student's expectations vary and hence it is unlikely that a 'one-size-fits-all' approach to training provision will lead to a zero or a positive disconfirmation. Universities could consider more tailored programmes for doctoral students and customising their training to meet the varying needs of different segments of doctoral students. Prior studies with undergraduate students have identified the importance of segmenting students (Mutz and Daniel 2013; Person et al 2014) and this study suggests that segmenting doctoral students may also be beneficial.

To gain a better understanding of these varied expectations and to design programmes that leads to a zero or a positive disconfirmation, universities could consider segmenting doctoral students using Geographic, Demographic, Behavioural and Psychographic segmentation:

- Geographic Segmentation – Part-time and overseas students are likely to spend more time away from the university campus and hence on-site training may be difficult to access. The study has identified some of the unique characteristics of part-time students and in particular the need for universities to provide more flexible training programmes.

- Demographic Segmentation – The study highlights the differing needs of those doctoral students who have already had professional experience or who are currently employed. In particular, professional doctorate and part-time students' needs are likely to differ from full time students who have limited work experience.

  Additionally there is a need to segment according to intended career paths. Doctoral candidates intending to enter a career in academia for example are likely to have different expectations of their training needs to those who are undertaking professional doctorates. Hence, understanding the career aspirations of doctoral students is an important consideration in providing work-based skills training.

- Behavioural Segmentation – The stage of study has been identified as an important influence on doctoral students' training expectations. Students have expectation about the level of study and the appropriate degree of complexity for their stage within the doctorate. The willingness to engage in work-based skills training also appears to temporal. Universities need to consider at what stage within their study programme doctoral students' expect to receive work-based skills training.

- Psychographic Segmentation – Students' lifestyle factors are an important consideration. Students studying part-time who are also working have different

expectations of training needs to those studying full time. Universities need to consider both the nature of the content offered and times that training courses are made available. Flexibility in the delivery of training appears to be a key consideration for part-time students. Moreover, when designing training courses, the universities also need to consider the effect of factors such as work life balance, living location (living closer to the university versus out of town) which could equally affect both male and female students. Given that women struggle with childcare in academia (Howe- Walsh and Turnbull 2016) universities should be encouraged to consider in particular, the needs of women with childcare responsibilities.

Segmenting doctoral students by geographic, demographic, behavioural and psychographic factors would provide universities with a better understanding of the common training needs of each group. This would allow institutions to design and develop skills-related training that meets the expectations of each group. Additionally, more targeted training would enable universities to develop communications about skills-based courses that would appeal to specific doctoral student groups.

Managerial implications, limitations and direction for further research

The present study highlights the need for universities to adapt their doctoral training according to the expectations of different student segments to ensure a zero or a positive disconfirmation occurs. Universities need to consider their skills-based training according to the segmentation of students:

- Geographic: The time and locations of training needs to be re-considered. Students studying overseas or part-time need to have access to work-based skills training off-campus. Universities could consider online delivery through webinars. This would provide flexibility for those students in this segment.

- Demographic: Work-based skills training that recognise different intended career paths could be provided. Relevant career routes for training could be identified in university communication to help students identify relevant workshops that are appropriate. Other work-based skills training communication could identify the level of expertise to assist students to determine the level of complexity.

- Behavioural: As students appear to be focussed on research skills during their doctoral studies universities could consider providing 'block training' for students towards the end of their study, after their thesis is submitted and prior to graduation. Further research would be beneficial however to explore for each group of student at what stage would they feel work-based skills training to be most relevant.

- Psychographic: Universities need to consider the flexibility of their delivery to meet different student expectations. Evening training sessions, webinars or online training could be considered. Universities could also consider outsourcing training to meet specific needs of student groups. Given the differing needs of individual students universities could also consider introducing a skills gap analysis for students when they begin their doctoral study and provide an annual professional development review.

The current research highlights the need to better understand the expectations of doctoral students. Future studies could look specifically at segmenting doctoral students using demographics. To provide generalisability this would need to be conducted with a larger sample.

While the findings have provided insight into how student expectations vary according to factors such as the stage of the study, it has a few limitations which need to be addressed in future studies. First, the current study was cross-sectional study in design, it would be helpful to explore how individual student expectations change over time and hence a longitudinal study would be fruitful. Since the sample was limited to doctoral students, undertaking a study with those who have completed their study would be of valuable. As the number of participants of this study is small, and the balance between part-time and full-time are skewed (2-9 respondents), studies which consider a larger sample, to allow for greater generalisation of findings, would be beneficial.

Future research could also consider exploring the attitudes of students at the end of their doctorates. Moreover, it would be valuable to understand more about how expectations vary between segments. Furthermore, knowledge of how expectations differ according to career path chosen would be of interest. For example further research is also required to understand the different expectations of the students studying for a PhD with a very clear research plan with an intention to pursue academia, and those who wishes to stay in their current profession (outside academia) Finally, this study was conducted focusing on one institution in the UK. However, the nature of the doctoral programmes could differ across the institutions, countries and various research disciplines (science vs humanities, traditional, professional vs continental style). Hence, the findings of this study may not be generalisable. Therefore, further research is required to explore expectations of doctoral students across different institutions, countries and to explore to what extent these expectations differ among those who studying/ng for a traditional, professional and continental style doctorate.

Finally, the aim of this study was to investigate the expectations associated with work-based skills training from the doctoral students' perspective. Thus, the findings does not indicate how work-based skills training is perceived by universities and doctoral supervisors. Therefore, further research is required to investigate the perceptions towards work-based skills training from an institution or doctoral supervisor's perspective. It would also be interesting to explore to what extent the expectations associated with work-based skills training differ according to the career stage of the participants (at their entry to the course), as perception towards work-based skills training may differ between a confident, experienced person from that of a less experienced student. In addition, a PhD has its structural origins in apprenticeship and it is considered as an ''academic passport with international reciprocity'' (Noble,

1994), which provides a licence to teach at degree level, and an apprenticeship in ''proper'' academic research (Armstrong, 1994). Therefore, further research is required to consider how student expectations have changed concerning the purpose of a PhD and work-based skills training over the years.

Future research could also explore stakeholder perspectives regarding who is best placed to deliver work-based skills training. Examining for example doctoral supervisors' perceptions of their role and responsibility for ensuring doctoral students gain work-based training would be a fruitful area for further exploration. Additionally, it would be of interest to examine employers' perspectives to better understand stakeholders' expectations of work-based skill provision. Exploring perceptions of doctoral apprenticeships for example could be an interesting topic to examine further.

Despite limitations, the current study contributes to our understanding of doctoral student expectations of work-based skills training and challenges that are associated with such training, which could lead to a negative disconfirmation between expectations and training offered to doctoral students. We identify that expectations vary according to students' geographic, demographic, behavioural and psychographic characteristics and outline a segmentation approach to assist universities better understand their students' needs and develop relevant training in a way that result in a zero or a positive disconfirmation.

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Table 1. Profile of the focus group participants

Participant	Gender	Mode of study (FT= Full Time; PT=Part Time)	Year of study	Faculty
A	F	PT	2	HUMS
B	M	FT	2	TECH
C	F	FT	1	PBS
D	F	FT	1	PBS
E	F	FT	1	HUMS
F	F	PT	2	CCI
G	F	FT	3	SCI
H	M	FT	1	TECH
I	M	FT	1	TECH
J	M	FT	3	TECH
K	F	FT	3	SCI