

Using Twitter to Tackle Peripherality? Facilitating networked scholarship for part-time doctoral students within and beyond the university.

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Author: Katy Vigurs

Abstract

Feeling part of a community has previously been found to be a motivating factor for part-time doctoral students as well as speeding up doctoral progress. Separately, it has also been suggested that social media usage (specifically Twitter) can encourage the development of interactive academic networks to establish social relations with relevant people beyond the doctoral supervisory team. Drawing on Lave and Wenger's theory of legitimate peripheral participation, and building particularly on the work of Teeuwsen et al. (2014), this paper suggests that the use of social media in doctoral education can be one way for part-time doctoral students to migrate from a position of academic peripherality to one of legitimate peripheral participation in a wider research community. This paper investigates the use of social media for academic purposes by three different groups of part-time doctoral students. It explores the ways in which Twitter might be used to help part-time doctoral students feel part of the research community both *within* a University *and* the wider research community beyond. It also identifies some of the barriers and limitations to achieving this. Finally, the paper raises questions about the roles and responsibilities of supervisors and other faculty members in relation to using social media to support the learning of part-time doctoral students.

Keywords

Postgraduate Researchers; Doctoral Education; Part-time Study; Social Media; Legitimate Peripheral Participation; Twitter

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Introduction: Setting the professional and academic scene

This paper seeks to explore issues of scholarship, practice and digital technologies in relation to the experience of part-time (PT) doctoral students. It is unclear in the current literature as to whether increased use of digital technologies within doctoral education is a 'crisis' or an opportunity to develop doctoral pedagogies to enhance the learning of PT doctoral students. PT doctoral students often experience isolation from a wider academic community, due to spending little time at their own institution, usually only visiting the

campus for meetings with academic supervisors (Deem and Brehony, 2000). Deem and Brehony's (2000) study found that, as well as PT doctoral students struggling to routinely organise phases of continuous academic study, they also rarely mix socially with other doctoral students (explained further below). This is potentially a problem as participation in social practices is considered a necessary condition for learning. When reflected upon in relation to Lave and Wenger's (1991) concept of 'legitimate peripheral participation' (LPP), PT doctoral students are at risk of always remaining on the periphery of an academic community of practice, finding it difficult to access opportunities to allow them to move to becoming more 'legitimately peripheral'. Teeuwsen et al. (2014: 690) point out that LPP is supposed to be a positive experience of participation and social learning (i.e. a doctoral student – or peripheral 'newcomer' – feels part of the community of practice irrespective of experience), however, they note that it can also be experienced negatively (i.e. the PT doctoral student remains at a distance 'in a sort of orbit around the more experienced members'). Building particularly on the work of Teeuwsen et al. (2014), this paper suggests that the use of social media in doctoral education can be one way for PT doctoral students to migrate from a position of academic peripherality to one of legitimate peripheral participation in a wider research community.

In this paper I analyse the views and experiences of 62 PT doctoral students to explore the ways in which the social media platform Twitter has been harnessed in relation to processes of doctoral learning. This research provides a rich understanding of PT doctoral students and their lived experience of using Twitter as part of an approach to studying postgraduate research degrees, including the struggles and challenges faced. In the remainder of this section, I will outline my own professional role in relation to PT doctoral students within one UK higher education institution (HEI) to help explain my interest in this field. I will also explore the phenomenon of PT doctoral study. This will include a note on the global diversification of the doctoral student body generally, as well as an attempt to define and characterise the PT doctoral student. This will be followed by a discussion of the main issues faced by PT doctoral students, as highlighted in the literature. The paper will then move to discuss the potential affordances and challenges of using social media, specifically Twitter, to impact upon the doctoral learning experience.

The landscape of doctoral education has changed a great deal over the last 25 years. For example, the number of students studying globally for a doctoral qualification has expanded hugely, together with 'rapidly changing global candidate demographics' (Boud and Lee, 2009: 3). Additionally, a new 'family of doctorates' (Park, 2007: 28) has also emerged, including professional doctorates and practice-based doctorates. Thus, as stated by Boud and Lee, 'the research doctorate has become a professional qualification across a wide range of high-order intellectual, professional and work domains' (p3) and is no longer the domain of an elite few.

Set within this changing doctoral education context, my own professional role involves the leadership and management of an education doctorate programme (EdD). The EdD is a PT professional doctorate, which is usually studied over 5-6 years and involves some 'taught' modules. It attracts senior education professionals to design and conduct educational research at doctoral level that will contribute to the development of an aspect of their own education practice and policy (Burgess et al. 2006). In addition to being the course director

of the EdD programme, I am also a supervisor to several EdD and part-time PhD students. These roles mean that I have experienced at first-hand many issues and challenges experienced by students embarking on their doctoral journey, particularly those who are simultaneously working in professional practice and studying PT.

The literature on doctoral education argues that the process of undertaking doctoral study necessarily involves a change of identity for students – ‘becoming a researcher’ – and this process of identity-formation should be an explicit part of the doctoral learning process (Drake, 2011; Crossouard and Pryor, 2008). Many studies identify the existence of an institutional research culture as important in doctoral students’ transformation into researchers. For example, Leonard and Becker (2009) found that a research culture which is academically and socially inclusive, and which enables students to make contacts and develop networks, can have a positive impact on student motivation, experience and outcomes. Indeed, it can provide an important foundation for those seeking to become researchers within or outside academia. Doctoral programme tutors and supervisors often take on the responsibility for setting up systems and initiatives to support doctoral students and to increase a sense of collegiality and community. Traditionally, these interventions involve co-opting students into ongoing study groups and special interest groups within the university. Most university departments run research seminars, but although many students know about these events, they often do not attend them on a regular basis, and some never attend them at all (Leonard et al., 2006). Students say the seminars feel inappropriate for their needs, the subject matter is not relevant and/or the setting is too formal (Leonard and Becker, 2009). Furthermore, students who do not attend seminars nevertheless often indicate that they want greater opportunity for dialogue and more help, but in specific areas. Some students suggest that contact with others outside the university would be valuable because expertise in a specialised area is lacking (Green, 2009). Even when there is an ethos of collegiality, PT students find research cultures more difficult than others to access and sustain (Leonard and Becker, 2009). As noted at the beginning of this paper, such issues are potentially a problem when considering doctoral education from a situated learning perspective, where participation is regarded as a way of knowing (Lave and Wenger, 1991). If a key part of the doctoral learning process can be understood as increasing participation within specific social settings (such as academic and research communities of practice), then a lack of access or opportunities to participate in such settings is likely to disadvantage some students.

There is a growing body of literature on the experiences and outcomes of the PT doctoral researcher. Such students are sometimes referred to as ‘non-traditional’ doctoral students, with the ‘typical’ student being historically defined as middle class, white, young, male and studying full-time (Bendix Petersen, 2014). PT doctoral students are normally also working in professional employment on a full-time basis and are often older in age (Boote and Beile, 2005; Murakami-Ramalho et al. 2013). Indeed, they are also more likely to be parents and carers (Teeuwesen et al. 2014). Thus, PT doctoral students usually have multiple responsibilities and shifting identities, which can sometimes lead to a ‘fractured student identity’ (Watts, 2008). This is attributed to the ‘strain of having to make the psychological adjustment of constantly switching from one mindset to another’ (Watts, 2008: 369). Moreover, Bendix Petersen (2014) suggests that institutional structures and support provided for ‘non-traditional’ doctoral students are still largely based on the assumption of

the 'typical' (possibly mythical) doctoral student. On this basis she argues that doctoral education for PT students has become an increasingly interesting pedagogical site that potentially poses a set of pedagogical challenges to faculty staff. This suggests that supervisors and faculty staff might need to think more carefully about how to best support such students during periods when they are experiencing 'peripherality' or isolation from academic communities of practice (Teeuwsen et al., 2014).

Murakami-Ramalho et al. (2013) state that PT doctoral students are often disadvantaged within the wider doctoral learning community. They say that these students feel they are 'sitting on the periphery' and in isolation from others (p260) and that they feel penalised for having commitments outside the university (p268). Similarly, Teeuwsen et al. (2014) suggest that PT students feel distanced from the university and can remain 'strangers' to the context, often struggling with being in a 'third space', an 'unhomely space', between being a professional, a student, a carer, and a researcher. To this end, Pilbeam et al. (2013) draw attention to the fact that much of the UK's higher education policy relating to doctoral education is based upon the notion that 'student networks' are structures that encourage informal learning and social interaction. Furthermore, informal learning and support through peer and faculty networks is increasingly recognised as a vital element for successful doctoral education (Hasrati, 2005). This is because participation in academic networks is one of the main ways that doctoral students learn the values, norms, attitudes and beliefs of the academic research community (Murakami-Ramalho et al. 2013). Increasingly, doctoral students see learning through their relationships as crucial to their progress, and want people in similar situations to share perspectives and give feedback (Leonard et al. 2006). Pilbeam et al. (2013) point out that the UK Postgraduate Research Experience Survey (PRES) provides useful data on the general value of these doctoral student networks, but 'there is currently a dearth of qualitative evidence on the benefits and constraints of networking as perceived by individual students on doctoral programs' (p1474). This is something that this paper seeks to redress.

As alluded to above, an important aspect of doctoral study is identification with an academic community, which is frequently complicated by PT student status (Teeuwsen et al. 2014). Murakami-Ramalho et al. (2013) remind us that faculty members of staff have a key role to play in the socialisation of doctoral students. However, their research found that regular interactions with faculty members were especially difficult for PT doctoral students due to being physically remote from the university and the restricted availability of faculty outside of regular office hours. This often means that opportunities for legitimate peripheral participation, where 'sense-making' can take place with experienced academics, together with contact with informal research communities, are less available to PT students (p267). Teeuwsen et al. (2014) also highlight the difficulties that can be experienced by PT doctoral students who are also faculty members within the university they are studying at. For these particular PT doctoral students, physical proximity to the university is not the issue, but unhelpful issues of power and status can emerge that limit occasions to constructively interact with research communities within the university. The fact that a range of PT doctoral students may find it difficult to integrate into support networks that develop their scholarly participation is potentially an issue of inequity in doctoral education.

In relation to the issues raised by the doctoral education literature regarding the peripherality of PT doctoral students and its potential impact on their doctoral learning, and as a professional who primarily works with PT doctoral students, I started to ask myself what I could do to try to ensure that the PT students, for whom I am responsible, are able to more fully participate in and identify with academic communities on a regular basis. I was actively looking for approaches that might help PT doctoral students to balance and sustain their professional, personal and study lives. In order to better support the increased scholarly participation for PT doctoral students, I designed a 12-month research-informed teaching project that sought to enhance some of the doctoral micro-practices of PT students' and faculty staff members' everyday lives (Green, 2009) by using the social media platform, Twitter. Twitter can be used for the creation of networks, the encouragement of openness, the sharing of information, and the communication of support and research (Stewart, 2015). Lupton's (2014) study of 711 academics using social media found that 90% were using Twitter for academic purposes. Thus, Twitter is fairly prominent where participatory scholarly networks are concerned and Stewart (2015) goes so far as to define Twitter as a participatory academic sphere.

Elsewhere it has been suggested that Twitter can be used to help students proactively organise and tailor virtual peer support groups (Mollet et al., 2010). Moreover, Minocha and Petre (2012) suggest that social media (especially Twitter) can be used to encourage the development of interactive academic networks and help to establish social relations with relevant people beyond the supervisors. It can be used to share knowledge and expertise with others and to find colleagues and organisations with similar interests. Stewart (2015) found that many academics using Twitter appeared to be engaged in 'curating and contributing resources to a broader "conversation" in their field... rather than merely promoting themselves and their work' (p297). This supports Mewburn and Thomson's (2013) claim that social media are not necessarily 'echo chambers' but rather opportunities for massive global conversations. Stewart (2015) suggests that Twitter, as an open network, has affordances for learning, particularly in its potential to open up access and cost. McPherson et al. (2015) also present the use of social media platforms to develop academic practices through the building of informal learning processes and social networks. They highlight that Twitter can be beneficial for building networks of academics, locally and globally, 'enhancing information flows, inspiring thinking, and motivating academic practice' (p126). They also suggest that Twitter can become a collegial space where 'we are allowed to show the way we work and see how others work' (p133), arguing that this visibility 'becomes a way of seeing patterns of practice and patterns of dialogue, conversations and references' (p133). Indeed, McPherson et al.'s work suggests that Twitter allows some academic conversations to take place publicly and virtually, removing them from the closed confines of university offices and hallways. This has the potential to not only open up access, but to make 'some of the invisible work of academia, visible' (p133).

Other studies suggest that the use of Twitter to support PT doctoral students to feel part of both the research community within the University and the wider research community beyond may be more limited. For example, Henderson et al.'s (2015) research argues that students' actual use of digital technology in higher education is often constrained and compromised in practice, which they attribute to varying levels of digital confidence and skills. They also found that only 14.5% of their respondents reported finding Twitter to be

useful or very useful for their HE studies. Similarly, Pilbeam et al. (2013) found that the doctoral students in their research perceived face-to-face networks and communications to be the most valuable. They go on to point out that engagement in networks cannot be mandated, only facilitated, which might mean that any formation and development of networks may be arbitrary or even exclusive. Their concern here is also one of equity in doctoral education, as they see that some students will likely fall outside the networks and conversations that evolve.

The research-informed teaching project that I conducted in 2013-14 sought to harness some of the affordances that Twitter usage might have for the education of PT doctoral learners and, where possible, address some of the suggested limitations. To this end I produced an initial learning and teaching strategy for the pedagogical use of Twitter for doctoral education. I then embedded a 'Twitter for Doctoral Purposes' workshop into the induction of the new group of EdD students (Cohort 6) in December 2013. For the continuing EdD students (Cohorts 3-5), I produced a guidance document on using Twitter for Doctoral Purposes, which was disseminated to all. I then evaluated how the 26 EdD students at my own institution (Cohorts 3-6) felt about using Twitter for doctoral purposes. To develop my knowledge and understanding further, I distributed the questionnaire on the use of Twitter for doctoral purposes more widely to incorporate the views of PT EdD and PT PhD students studying at other HEIs from my own.

Research Methodology

This study seeks to contribute to the theory and practice of doctoral learning. It attempts to do this by researching how the social media platform Twitter might be used to support part-time doctoral students' participation in networked scholarship, as a way to address the experience of physical and academic peripherality. The research takes a largely interpretivist epistemological position. This means that I acknowledge that objective and value-free research is not possible and that knowledge of the social world is mediated through people's understandings and meanings (Ritchie and Lewis, 2003). I see knowledge as produced through both the researcher's and the participants' understandings. This sort of study requires the generation of data that will produce 'thick' qualitative descriptions of social life. In this type of research, I do not believe that knowledge is there to be 'mined', but rather that meanings of participants' accounts are developed as the researcher interprets them.

To conduct the research, I used Qualtrics software to design a qualitative version of an online questionnaire to generate doctoral students' views and experiences of social media in relation to their postgraduate research studies. The questionnaire included 32 questions, the majority of which were open-ended. The online questionnaire was opened on 1 July 2014 and closed after 6 weeks. I publicised it a number of times during this period. This included emailing the whole population of EdD students at my own institution to invite them to complete the questionnaire, as well as publicising the questionnaire more widely via a range of social media including Twitter, LinkedIn and Facebook pages. My sharing of the questionnaire web link via Twitter received over 50 retweets, which undoubtedly extended the reach of the questionnaire. In this paper I only report on the responses of part-time doctoral students.

All EdD students at my own institution ($n=26$) completed the questionnaire, but the rest of the part-time doctoral students' responses ($n=36$) were non-representative as they were completed by students who had come across the survey through social media networks. These wider respondents effectively volunteered and, given that recruitment occurred via social media, it is likely that they were doctoral students who were already actively using social media as part of their studies. This means that my findings cannot claim to be generalizable to the total population of part-time doctoral students. The findings do, however, provide rich insights into what part-time doctoral students might find useful and challenging about using Twitter as part of their approach to postgraduate research.

A total of 62 part-time doctoral students completed the online questionnaire. As mentioned above, 26 of these were the total population of EdD students at my own institution; not all of these were using Twitter and some had only been using it for a short number of months. In terms of the other 36 respondents, 15 were completing part-time EdD programmes at other HEIs in the UK, and 21 were completing part-time PhDs (16 in the UK and 5 in Australian HEIs). The demographics of the three groups of respondents are shown in Table 1.

The online questionnaire generated just over 30,000 words of qualitative data from the 62 part-time doctoral students. The data produced are rich and detailed across all three groups of participants. Examples of the open-ended questions included:

- Why did you start using Twitter for academic purposes?
- How did you learn to use Twitter for academic purposes?
- How do you use Twitter for academic purposes?
- What are the benefits and challenges?
- How has Twitter impacted on how you feel about studying your doctorate?
- How important is it that your supervisors are visible and reachable on Twitter?

Table 1: Demographics of the three groups of PT doctoral student respondents

	GROUP A PT EdD students - own HEI (n26)	GROUP B PT EdD students – other HEIs (n15)	GROUP C PT PhD students (n21)
Age of doctoral student			
20s	0	0	1
30s	5	4	5
40s	11	8	9
50s	9	2	5
60s	1	1	1
Type of HE institution			
Pre-1992 HEIs (UK)	0	9	9
Post-1992 HEIs (UK)	26	6	9
Australian HEIs	0	0	5
Year of study			
1	7	7	8
2	8	2	5
3	8	2	2
4	3	4	5
5+	0	0	1
Using Twitter for academic purposes?			
Yes	21	15	21
No	5	0	0
When started using Twitter for academic purposes?			
0-1 years ago	20	3	4
1-2 years ago	1	4	4
2-3 years ago	0	4	5
3+ years ago	0	4	8
Has Twitter usage changed?			
Yes	13	12	8
No	8	3	13
Average number of people followed on Twitter			
	141	720	907
Do you use hashtags?			
Yes	6	11	15
No	15	4	6
Should supervisors use Twitter?			
Yes	18	8	5
No	8	7	10

Data analysis of the open-ended responses involved two phases. The first was ‘familiarisation’, which involved repeated reading of the data to build an overall sense of the content. From this it was possible to identify themes that were both common and divergent across the three groups of part-time doctoral students. These themes were integrated into an emergent coding framework. The second phase involved using the emergent coding framework to systematically code the qualitative data.

Findings from the three groups of part-time doctoral students

It is worth reflecting briefly upon the data in Table 1 and highlighting a key difference between the groups. Group A is different to the other two in that 20 out of the 21 students using Twitter were new users and had been using Twitter for academic purposes for less than a year. This is potentially significant as it means that the students in Group A were not just 'newcomers' to the practice of research but were also 'newcomers' to using Twitter, which may have made achieving legitimate peripheral participation more difficult for some. Many of this group could be described as 'basic users' of social media at the time of the survey. This is evident from the low average number of people being 'followed' and the low level of hashtag use. Many of Group A also shared that they only checked Twitter once or twice a week at the time of the survey. In Groups B and C, 21 out of 36 students had been using Twitter for 2 years or more. The majority of Groups B and C were using hashtags and they were following a much higher average number of people on Twitter (Group B = 720 and Group C = 907). They also gave examples of how Twitter usage was integrated into their daily lives and practices, for example, "I use Twitter everyday mostly, I use it most in the evenings and have developed a habit of reaching for it when I first wake up in the mornings" (Group B) and "Accessed several times a day. I read my Twitter feed before I get up in the morning, and at intervals during the day and finally before sleep" (Group C). Again, this suggests that Groups B and C may have been using Twitter to achieve legitimate peripheral participation in research communities of practice more successfully than Group A at the time of the survey.

It is also important to note that of the 21 Group A students who were using Twitter, only seven said that their use was self-directed. The remaining 14 students stated that their use of Twitter was solely prompted by an explicit recommendation by their tutor, for example, one said "I started using Twitter when I enrolled on the EdD programme. I would not have opened a Twitter account if I had not been encouraged to do as part of the programme as I had a belief that Twitter was a way for young people to keep in touch with each other." This suggests the importance of induction and 'scaffolding' when introducing a learning technology that is new to a group. In Groups B and C the majority of students said that their usage was self-directed, in fact, several had been using Twitter for personal/professional purposes before they started their doctorate.

I will now present this study's findings under three sub-sections in order to understand what the participants found beneficial about using Twitter for doctoral study, what they saw as its limitations, and what they thought about their tutors/supervisors being visible and reachable on Twitter. To help communicate these findings, I have included a series of tables that comprise example quotations from participants across the three groups. This will allow the reader to see the richness of the qualitative data generated.

What do the part-time doctoral participants find beneficial about Twitter?

Three key themes on the benefits of Twitter for doctoral purposes are presented below. The first, 'Enhanced belonging to a cohort *within* a university' was only raised by Groups A and B, probably due to the modular/cohort aspect to most professional doctorate programmes (Table 2). Participants in both these groups commented that Twitter helped them to engage with tutors and peers outside the classroom sessions. It appeared to help

engender a sense of community between members of a cohort of learners, which seemed important for part-time EdD students who might only attend an on-campus class once a month. Both groups commented that an EdD cohort presence on Twitter was quick to establish and was helped by some tutors and peers already knowing how to use the social media platform. The role of humour and informality as a means to strengthen relationships with peers and tutors was also raised. The majority of participants in Groups A and B found that Twitter was a useful mechanism for increasing the frequency and quality of contact between members of a cohort. This was described as having motivating effects for part-time students.

GROUP A	GROUP B
<ul style="list-style-type: none"> • I wanted to engage with my tutor and peers outside of the classroom. My tutor was already using Twitter and I soon felt that there was an EdD presence in Twitter. I hoped to be able to maintain presence and connection between sessions, to share resources and both offer and receive support when necessary. • I wanted to keep in touch with fellow students, hear about their journey and read articles suggested through tweets from colleagues and tutors. • I started using it as I felt that this might be an interesting way of joining a community of practice for educational research in the University. Also, I did not want to be left behind - technologically speaking. • I wanted to feel a part of the department at the University. • At one time, when an assignment was due to be submitted, I saw that fellow students had posted some tweets about how they were getting on. I joined in at this point and felt that I was not alone with trying to complete my assignment before the deadline. • I feel part of an academic cohort that is working and thinking together. • The sense of social presence with my peers has been maintained, and I think this will be of greater value as I move to the next phase of my studies. • Tweets with classmates involve some 'banter', which I have found really humorous. I find this helpful as when I am in class we mainly talk about study material and although this can create good relationships academically, there is no time to get to know people outside of their study interests. I need to have that connection alongside the academic relationship. 	<ul style="list-style-type: none"> • Most of my tutors use twitter regularly so it made sense (to me at least!!) to join in the community. • My colleagues and fellow doctoral students I was meeting at work were using twitter professionally. • ...because all of my EdD class were using it I could explore its potential with a safe network of friends/fellow students. • I started using twitter early in my studies because a lot of the tutors on the programme use it. Once I set up an account I realised how much help, support and information was available. I tend to look at tweets from different EdD tutors from around the country too. • I only properly started using twitter after attending the doctorate induction in September. We received a talk about its benefits and I was hooked. For somebody starting out in the EdD programme in my first year it was a small easy step I could take. • It helped me maintain and build a contact network when I moved geographically further from my peers on the same course at the same uni. • It can be quite an isolated experience so I thought it might offer more of a sense of community outside of the monthly weekend classes. • By engaging in the more informal 'jokey' conversations with my supervisors etc breaks down some barriers and helps create better relationships all around. • To be honest the main thing I have used it for is its social benefits. Other EdD students and teachers completing their MEds have become my friends and we have supported one another through the initial stages of fear and trepidation - the 'I can't do this phase'. We have learned from one another and formed academic friendships that down the line might see us collaborate with one another.

All three groups talked about Twitter's potential to allow individuals to build their own personalised doctoral learning networks beyond their cohort or university (Table 3). Group A raised this less times than Groups B and C. Some members of Group A demonstrated that they could see the potential for using Twitter to develop wider academic networks beyond their university, but only a couple stated that they were doing this already. In contrast, Groups B and C were able to provide examples of such benefits. One commented that using Twitter helped to bring the wider research community 'alive', which can be forgotten if you are only engaging with books and journals. Others commented on the use of Twitter to build connections with people met (physically or virtually) at academic conferences or through live 'tweet chats'. There were also comments about the use of

Twitter to compensate for poor supervisory relationships. Twitter allowed some to connect with a wide range of supportive academics and doctoral students that helped them to feel informed, involved, valued and supported.

GROUP A	GROUP B	GROUP C
<ul style="list-style-type: none"> • I wanted to build my networks, follow people similar to my research area, and maintain connections. • I think it can help me to make links with other professionals. • I can see the 'bigger community' in PG study not just the class I study with. • I heard that I might find potential external examiners for my thesis on there. • It does make me feel much more connected to other people and like people are looking out for me. 	<ul style="list-style-type: none"> • I get a lot out of following conference hashtags - both those I am at and those I cannot. • I have been involved in things such as #BELMASchat which have put me in contact with various academics. • It offered me the chance to join a global learning community • I have found a solid and supportive group of educators and academics. • A sense that I am part of a broader community of researchers. • It's really about being part of a wider community beyond the walls of an individual institution • It has made me much more aware of the wider research community, and of the fact that it is a dynamic and living community. It would be easy to forget that if you didn't attend many meetings and conferences and just relied on reading published books and journals, where the empirical research was usually conducted months or years before. • Everyone is on a level playing field on twitter from the most renowned professor to a classroom assistant. 	<ul style="list-style-type: none"> • After attending a conference, I realised a lot of academics I like tweet! • I thought it would allow me to make links with leading scholars. • Staying in contact with people met at conferences • I've connected with a wide range of people and it's made my postgraduate study less lonely. • Twitter has been like an associate supervisor. My first supervisor was not helpful and I learned from the academics and other students instead. • It has helped keep me sane. • Helped me feel less alone • I like the idea I have a voice, and being part of a larger, ever evolving conversation. • I do feel well informed and glad to have such a wide network of colleagues • I feel connected and valued. The celebration of PhD milestones is lovely and rewarding.

Table 4 shows that students across all three groups found Twitter to be useful in gaining moral support beyond the supervisory team and found that it kept them motivated. For some, seeing others' experiences of part-time doctoral study, and their successes and achievements, on Twitter was inspiring and motivating. Others appreciated doctoral students on Twitter sharing their 'pitfalls and panics', partially to generate a feeling of 'being in it together' and partially to learn from others' experiences. For others being on Twitter and connected to other doctoral researchers and academics acted as a welcomed reminder that they are studying a doctorate as well as having other professional roles and responsibilities.

Table 4: Gaining moral support - Keeping motivated		
GROUP A	GROUP B	GROUP C
<ul style="list-style-type: none"> • Twitter motivates me, especially reading tweets from other PhDers. • Noting others' study lives has made me believe I can do doctoral study. I am still in awe of others who have completed their doctoral journey but know that will be me one day! • I guess it has been useful in giving me timely reminders that I am doing an EdD, I do have colleagues out there probably as frustrated as I am that a part time course can be swamped by other commitments but the overall impact has been to keep me engaged with study in a very busy life. 	<ul style="list-style-type: none"> • Because of its format you can engage in conversation, debate and discussion, and with the limited character count, the conversation becomes very quick, succinct and engaging. • I don't have much time what with studying EdD in the evenings, working full time and looking after my four small children who are under the ages of 8 so using Twitter is easy, tweets are brief and it's simple to use. 	<ul style="list-style-type: none"> • I use twitter to connect with other students and have a sense of community and connectedness. • A PhD is an isolating experience and twitter has helped to reduce the isolation. • As a part timer who is never on campus, I needed to find ways to find a PhD community and peers. • I felt I wasn't part of the academic community at Uni so looked to Twitter for advice and support. • I need a community of fellow PhD students with similar experience of the doctoral 'process' including pitfalls, panic, feeling overwhelmed. • Daily use of twitter also helps motivate me to keep going, given, the task of juggling my PhD study with full time work and family.

What do the part-time doctoral participants see as the limitations of Twitter?

Despite the positive findings, all groups also raised limitations to using Twitter for doctoral purposes. For example, some participants in Group A communicated that using Twitter did not easily align to their personal/professional identity (Table 5).

Table 5: 'I'm not a social media type' - Not part of current identity
GROUP A
<ul style="list-style-type: none"> • I don't do social networking. Prefer real life to virtual. • It's confusing to access different accounts for different things as I rarely use electronic discussions I prefer face to face. • I haven't engaged as fully as I wanted to. I think this may be due to studying part-time and working full-time where the main methods of communication are email and face-to-face. • At busy times in terms of work / personal commitments, use of Twitter dwindles. • I'm very insular in my thinking and study. It's not for me.

Others across all three groups remained unconvinced of Twitter's value (Table 6). Some referred to the investment of time that would be required but may not pay off in the long run. Some referred to other people's use of Twitter and how this could be at odds with their own intended use. And two people commented that their connections on Twitter were almost 'too' supportive and that there was a lack of conversation that was critical or challenging, which they saw as crucial to doctoral development.

Table 6: Unconvinced of Twitter's value		
GROUP A	GROUP B	GROUP C
<ul style="list-style-type: none"> • Not yet convinced of the cost / benefit analysis - the 'clutter' factor. • Some communication has occurred amongst my cohort although often this is through 'favouriting' rather than contribution to a discussion, which can be frustrating when attempting to get a conversation going. • It was easy to use, technically, but I was unsure how to use it academically. • Don't have enough time in the day as it is, let alone faffing about bleating tweets all day long. 	<ul style="list-style-type: none"> • This will sound odd, but at times, Twitter has almost been TOO supportive - part of research is to acknowledge alternative views, and I was hoping to be challenged (for research purposes) on the aims of my research - the 'just-get-on-with-it' voices that I meet in day-to-day life who would question the validity of spending 4 years looking at Teacher Wellbeing – these have been more or less absent. 	<ul style="list-style-type: none"> • Not many in my uni seem to use it • Not all people with twitter accounts use it regularly.

The comments in Table 7 also highlight that participants across all three groups at times lacked the confidence to compose their own tweets or respond to others' tweets. Their 'silent' or 'voyeuristic' use of Twitter was partially due to a lack of confidence in their own research and also a concern over how other Twitter users may respond (possibly negatively) to their work. Participants stated that they did not want to appear 'stupid' or 'foolish' and that they feared public ridicule. Responses also showed that participants had witnessed others being rude, cruel, cliquy and cult-like on Twitter and were discouraged by such practices.

Table 7: Lack of confidence / Fear of derision / Exclusive practices		
GROUP A	GROUP B	GROUP C
<ul style="list-style-type: none"> • I do feel I want to make a contribution to Twitter but feel there needs to be some encouragement for newer researchers to test the waters. • Often I feel voyeuristic in that I read what is going on without making a comment as I am unsure how the comment will be responded to. • I have remained silent, so just tend to read and follow what is being written but not contributing myself. • I frequently question my views in light of how the community may respond. It can be nerve-wracking. Or it stops me tweeting. • I lack the confidence to write my own tweets for fear of ridicule. 	<ul style="list-style-type: none"> • Comments and debates can sometimes become cruel as insults fly back and forth. • Trolling! People deliberating starting petty arguments. Rudeness. • Intellectual snobbery is always annoying and excluding people is annoying. Twitter can be very cliquy. I've seen less exclusion with the post grad people than I have with teachers on Twitter. • Some seem to have collected 'followers who hang on to their every tweet and it seems they have created a 'cult' like status. • I very rarely engage in Twitter conversation and debate over educational issues with academics as I do not feel that I have enough knowledge or the right to express my opinion and tell them that I believe that they are wrong!! • In truth I do not want to appear stupid. • I would still not argue against an academic's opinion on Twitter. I don't yet have the knowledge (and therefore the right) to share my view for fear of looking foolish. 	<ul style="list-style-type: none"> • Everyone on Twitter has an opinion and some can be quite aggressive in their views. • I am not as yet confident enough to tweet about my research

The responses in Table 8 suggest that investing time into learning how to use Twitter efficiently and effectively was also a key challenge for the part-time students. Many felt frustrated and overwhelmed by their current usage. They could see their use was limited or problematic but they often did not know how to rectify this.

GROUP A	GROUP B	GROUP C
<ul style="list-style-type: none"> I can feel overwhelmed by the amount of tweets that are posted and this has a negative impact in making me shy away from it. I don't like it when my Twitter feed becomes cluttered with things I don't want... I need to somehow streamline what I see. Some people Tweet too frequently. I feel 'spammed' by their tweets. It feels unmanageable at times. 	<ul style="list-style-type: none"> It takes time to link into networks and build up a breadth of useful followers and people that you follow. In the early days I hadn't really built up a community of learning buddies. I really started in Sept and I would say it was Christmas before I was really hooked on the benefits of it. 	<ul style="list-style-type: none"> I find it frustrating that I don't use it to full extent but I am unsure how to improve this. Use happens so quickly I've a continual sense of having missed good stuff. I need to develop basic skills such as how to place an website address in my tweets.

Do the part-time doctoral participants want their tutors to be using Twitter?

The questionnaire also asked participants to comment upon how they felt about their tutors and supervisors using Twitter. Interestingly, in Group A, 18 out of 26 students felt strongly that it was important for tutors and supervisors to be visible on Twitter (Table 1). In comparison, Table 1 shows that Groups B and C were less convinced that this was important for how they felt about their doctoral studies.

GROUP A	GROUP B	GROUP C
<ul style="list-style-type: none"> Not really. It's good to make contact with other people. Not really. But I like seeing what they're doing professionally. No. Email is better. I do not think that Twitter should become an extra tyranny that tutors have to be visible and reachable on. Does the tutor want to be so easily accessible outside of work hours (is it difficult to maintain a work life balance with such visibility or accessibility)? 	<ul style="list-style-type: none"> Neither of my supervisors are and I'm ok with that. I think it helps to have a little space/distance with them. I think my supervisor's advice is always excellent but rarely 140 characters. I think he would argue that such brevity can distort or oversimplify nuanced points. This does not happen and I am more comfortable e-mailing them because Twitter is only 140 characters. Neither of my supervisors are on Twitter, which is fine, as I see this as a more informal mode of communication - and very occasionally allude to my frustrations with academia! No. I would definitely not want to engage with them in this way. It's way too brief a format and email works just fine. 	<ul style="list-style-type: none"> No, email is sufficient. No. For me twitter is about having a global PLN. Not necessarily. My supervisor is on Twitter but rarely uses it. There are many other ways to contact him. They are not. As supervision is a personal medium I don't think twitter is relevant. No. I have contact regularly with my tutors via phone, text or email. Would feel constrained if they were. Prefer contact via email, text, phone. Role on Twitter unclear, boundaries uncertain. I haven't even searched for them.

Table 9 shows that, across all three groups, participants were not interested in their tutors using Twitter for a number of reasons. Some stated that Twitter is used to build a global rather than a local network, so the value is seen in connecting with others beyond the

supervisory team. Some even commented that if their tutors/supervisors started to use Twitter that this would constrain their own use of the platform. Many others stated that the format of Twitter (i.e. messages limited to 140 characters in length) and its more informal and also public nature was less appropriate for the supervisory relationship. Others showed concern for tutors/supervisors' work/life balance and were worried that tutors' use of Twitter would possibly make tutors and students feel 'on call' 24 hours a day.

However, not all participants held this view. There were many respondents who stated that their tutors'/supervisors' visibility and/or reachability on Twitter were important and desirable to them (Table 10).

Table 10: It is important for tutors to be visible or reachable on Twitter		
GROUP A	GROUP B	GROUP C
<ul style="list-style-type: none"> • The sense of presence is important, so regular postings develop this. • Visibility of tutor keeps me motivated. • It maintains a sense of contact. • As a distance learner who will not have more than passing contact directly with my tutors then having regular tweets and pointers to potentially good information is vital in making me feel a part of the cohort, involved with my study. • The tutor's quick response to direct tweets allows for a 'fluid' conversation and can lead to others contributing almost like a class situation. • I was (am) frustrated about some staff not engaging in any meaningful way. Some early energy to contribute via Twitter was quickly lost by tutors and a single tweet on the morning of the final taught session was unhelpful (and irritating). 	<ul style="list-style-type: none"> • I enjoy having contact with my tutors through twitter mainly because they use it well to debate around topics that are of interest to me. I mostly do not join in the debates as I feel I know so little, but I enjoy reading the tweets. • Yes. They are then engaging with the debates with the education outside of academia. • it is good to see them engaging in discussion, conversation and debate. • If you see your tutor joining in discussions they act as role models and scaffold best practice online (one would hope!) 	<ul style="list-style-type: none"> • Half of my supervisory team are active on twitter, and it's good to know I can get a quick response if I need it. It's again being part of the conversation. As a tutor myself I feel being visible on twitter is important. • Yes, this would be useful. To reach them quickly would be advantageous and it would offer an additional method of contact. • Yes, as long as they are willing to engage meaningfully.

Some said that their tutors' visibility, presence and reachability on Twitter were important for maintaining a sense of contact in between monthly face-to-face meetings, and helped to provide motivation. Others commented on the fluid and responsive 'conversations' that were able to take place between tutors and students on Twitter in real time. However, some participants also raised the issue of what counts as meaningful Twitter usage by tutors. Some students commented that tutors needed to be more considered and consistent in their use, especially if they are explicit about using it with their doctoral students. Participants did not like it when they thought tutors were using Twitter superficially or cynically. Importantly, where tutors were using Twitter as individual academics, rather than directly in relation to their students' doctoral work, students still perceived value in this. They liked to passively observe their tutors taking part in wider Twitter-based discussions with other academics and researchers in the field. Students felt observing such interactions on Twitter helped them learn how to use Twitter more effectively for academic purposes.

Discussion and concluding comments

The findings of the questionnaire suggest that the majority of the part-time doctoral respondents were experiencing peripherality in two key ways (see Tables 2, 3 and 4). Firstly, in terms of physical distance from peers, tutors, supervisors and the university, which reportedly led to feelings of isolation and loneliness during their doctoral studies. Secondly, in terms of experiencing being on the edge or fringes of a more abstract sense of an academic community, where they felt they had low levels of knowledge and expertise in relation to research processes and their subject area, particularly when they compared themselves with other academics in their field. This seemed to affect their levels of academic confidence. These types of peripherality, particularly for part-time students, are acknowledged in the literature (Hasrati, 2005; Green, 2009; Bendix Petersen, 2014; Teeuwesen et al., 2014), but very little research has investigated the role of Twitter in addressing issues of peripherality for part-time doctoral students and its role in potentially developing access to forms of legitimate peripheral participation.

The findings in this study suggest that students' use of Twitter may have supported them to participate in 'networked scholarship' practice to varying degrees. But how does 'networked scholarship' relate to scholarship itself? Scholarship has been previously defined as 'a conversation in which one participates and contributes to by knowing what is being discussed and what others have said on the subject' (Glassick et al., 1997: 27). Identifying these 'conversations' in your field and eventually taking part in them is a key aspect to doctoral study (Vitae, 2010). Moreover, participating in scholarship is key to learning to become a researcher or a scholar (Drake, 2011; Crossouard and Pryor, 2008). It seems that a networked approach to scholarship is one way to achieve the goals of scholarship, usually in addition to other more traditional means (Lupton, 2014). Networked scholarship has been defined as 'scholars' participation in online social networks to share, reflect upon, critique, improve, validate and otherwise develop their scholarship' (Veletsianos and Kimmons, 2012: 766). In this study, all respondents who were using Twitter evidenced that they were undertaking networked scholarship in some sense or other, and this often appeared to help to ameliorate issues of peripherality (see Tables 2, 3 and 4).

For the part-time students there was a sense that using Twitter gave them the opportunity to 'silently' observe others' networked scholarship, either of their peers, supervisors or other academics. This 'voyeuristic' opportunity to see how other researchers and academics approached networked scholarship was often viewed favourably and may have been an example of Twitter making visible 'some of the invisible work of academia' (McPherson et al., 2015). In this sense, it opened up access to scholarly networks (and their contents) for part-time students, who might otherwise struggle to attend university research seminars or guest lectures due to time or finances. There were also examples of students feeling directly supported and motivated through their interaction with others on Twitter, and some students said that using the social media platform helped them to keep their doctoral study at the front of their minds. This may suggest that Twitter usage can, in some cases, help to manage the 'fractured student identity' experienced by many part-time doctoral students (Watts, 2008). The points raised above suggest that using Twitter can be a way to help PT students stay directly engaged in acts of legitimate peripheral participation in research-based communities over extended periods of time, which, 'because learning to conduct

research happens neither in isolation nor overnight' (Teeuwesen et al., 2014: 692), might enhance the possibilities for PT students to engage more meaningfully in research activities that would otherwise remain beyond their reach. Thus, using Twitter might help PT doctoral students migrate away from the periphery of research communities, and in turn enhance their experience of doctoral learning.

Having said that, it cannot be ignored that many students also felt inhibited about participating in open academic networks (see Table 7). This suggests that developing legitimate peripheral participation and interactive academic networks online is not always straightforward and feels like a risk for many, especially when they are new or 'basic users' (Teeuwesen et al., 2014; Henderson et al., 2015). The findings of the questionnaire also suggest that this can be frustrating for other users who may feel that they are contributing and curating content on Twitter, which is being consumed by others, but which is not being fully reciprocated (see Table 6). On the surface, this may seem to support the findings of Pilbeam et al. (2013) and Henderson et al. (2015), which point out the limitations of networked scholarship in higher education. This is also highlighted in Lave and Wenger's work, which argues that achieving legitimate peripheral participation can be difficult in practice:

'... legitimate peripherality is a complex notion, implicated in social structures involving relations of power. As a place in which one moves toward more-intensive participation, peripherality is an empowering position. As a place in which one is kept from participating more fully... it is a disempowering position.' (Lave and Wenger, 1991: 36)

This is worthy of careful consideration as doctoral educators and developers do not want to introduce approaches to social learning that will be empowering to some PT students and further disempowering to others. However, I think the questionnaire data from the PT doctoral students also shows that patterns of Twitter usage are highly dynamic and can shift quickly over time. This suggests that with some ongoing scaffolding and support, students and supervisors will be able to continue to review and develop their approaches to networked scholarship practices as part of the wider doctoral project.

So, what is the role of faculty staff in facilitating networked scholarship for PT students in order to offer enhanced opportunities for legitimate peripheral participation? The doctoral student experience is still seen to largely hang on the quality of the relationship between the student and the supervisory team. Thus, it is common for HEIs to currently equate making improvements to the doctoral student experience with making changes to initial and in-service training of supervisors (Leonard et al., 2006). It could be argued, however, that such inductions and training should explicitly include work on the concept and practice of networked scholarship as a route to legitimate peripheral participation, particularly in terms of facilitating a positive learning experience for part-time doctoral students. Such training might also be beneficial within induction and development programmes for doctoral students, although, as Pilbeam et al. (2013) suggest, the development of networked scholarship training cannot mandate participation in networks for students or supervisors. There is always the possibility that people will fall outside the networks and conversations that develop, and therefore never achieve sustained legitimate peripheral participation. However, on balance, there seems to be merit in educating supervisors and students about approaches to networked scholarship, especially where such practice can be linked to

wider reference points, such as the set of researcher skills and competencies outlined in the Vitae Research Development Framework (2010). This is something I seek to continue to develop and progress in my own professional context. Having conducted this research project, I see that part of my role is to help create an enabling environment for networked scholarship that will allow groups of doctoral students and faculty members to participate more legitimately in online research communities and networks.

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About the Author

Katy Vigurs is Associate Professor of Higher & Professional Education at Staffordshire University, Stoke-on-Trent, UK. Katy teaches in the field of postgraduate professional education programmes, including doctoral education and supervisor development. Her research interests include equity and higher education, doctoral pedagogies, researcher development, and collaborative working in education. Katy tweets for academic and professional purposes at @drkatyvigurs.