

What works for doctoral students in completing their thesis?

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Writing a thesis is one of the most challenging activities that a doctoral student must undertake and can represent a barrier to timely completion. This is relevant in light of current and widespread concerns regarding doctoral completion rates. This study explored thesis writing approaches of students post or near Ph.D. completion through interviews. The study's aim was to highlight factors identified by participants as helpful or hindering thesis writing. The analysis revealed 'helpful' factors were related to students' intrinsic behaviours and supervisory support, particularly support that adopted a 'project-management' style. Additionally, a subgroup of participants discussed the merits of a continuous-writing approach which is further explored in this paper with reference to the notion of *writing to develop knowledge*; this is recommended for timely Ph.D. completion.

Keywords: doctoral; thesis; writing; Ph.D.; student; supervisor

Introduction and rationale

This study set out to identify, explore and understand the positive and negative factors that can directly or indirectly enable doctoral students to write their thesis in accordance with the recommended completion time for Ph.D. study at a UK university. The findings presented are derived from interviews with doctoral students who were completing, or had just very recently completed their doctoral programme. Two relevant theoretical frameworks in the area of Ph.D. study were used to underpin the design and analysis stages of this research, namely that of Latona and Browne's framework for predicting timely completions (Latona and Browne 2001) and Lee's concepts of doctoral research supervision (Lee 2008). The findings are examined to argue the case for a continuous thesis-writing model, with reference to writing as a *knowledge-producing* activity (Wellington 2010), and should prove applicable to most doctoral programmes in the UK and beyond.

The rationale behind this study originated from conversations with five Senior Tutors for Research (STR) to initially understand the impact factors that affect the rate of progression and completion of Ph.D. study. Most STRs admitted that the Ph.D. completion rates in their school or department were not ideal. When asked why, all STRs talked about the writing up of the thesis as a phase which represented a major stumbling block for Ph.D. students. In English doctoral programmes, writing up of the thesis is typically the last major activity that a Ph.D. student does before the *viva voce* examination (the 'live voice' examination whereby a doctoral student must successfully

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argue and defend their thesis). ‘Writing up’ of the thesis is usually a highly concentrated task during which no further research or data collection is undertaken. Based on the perspectives of the STRs, this study therefore sought participation from doctoral students who were writing or had just recently written their thesis in an attempt to understand what enables or hinders this decisive stage of doctoral study.

Brief review of the literature

Doctoral completion rates and times-to-completion have been an ongoing concern for higher education institutions (HEIs) across the world (Elgar 2003; Park 2005), despite different countries adopting different programme structures. In the USA, for example, doctoral students must undertake oral exams prior to being permitted to start writing their thesis, and after passing these are called ‘ABDs’, meaning ‘All But Dissertation’. Doctoral students in the UK are encouraged to write their thesis continuously throughout their study prior to their *viva voce* examination. However, in reality thesis writing is frequently seen as ‘a mopping-up activity at the end of a research project’ (Richardson 1998, 345). In recent years the Higher Education Funding Council for England (HEFCE) has published research degree qualification rates (RDQRs) for HEIs in England, for both full-time and part-time Ph.D. students studying for the recommended period of time of 4 and 7 years, respectively. The RDQRs are used to positively discriminate English HEIs for funding if they achieve timely completions. In addition to their financial impact, doctoral completion rates are also important to consider for their impact on students’ emotional, mental and financial well-being.

During the last 20 years, various studies have focused on situational factors and characteristics of doctoral students, using these as indicators of timely completions. Many of these studies have used quantitative research methods to identify the following factors that can have an impact on completion rates: discipline of study (Elgar 2003; Park 2005; Wright and Cochrane 2000), gender (Martin, Maclachlan, and Karmel 2001), mode of study (Rodwell and Neumann 2008), age (Park 2005) and whether home or overseas (Park 2005). In 2001, Latona and Browne published a literature review examining such studies and suggested that impact factors associated with the completion of research higher degrees fall into one of three categories: (1) institutional/environmental; (2) individual supervisory arrangements; and (3) student cohorts and characteristics (Latona and Browne 2001). Whilst useful as a starting point for analysis, focusing on situational factors may be problematic, with Manathunga (2005) arguing that some of these studies are contradictory and may promote a risk-analysis approach amongst HEIs in selecting students for doctoral study. Focusing on situational factors in this way also ignores the larger, complex picture of the doctoral journey, especially when nearing the end.

Some studies have tried to identify key stages in doctoral study where Ph.D. students are most at risk of attrition or are more susceptible of not completing. Lovitts and Nelson (2000) suggest that attrition happens early on, with more than one third of doctoral students leaving during their first year of study. Interestingly, little work has been done to focus on the writing up phase of doctoral study as a critical point in leading to on-time completion, or if it represents a significant risk leading to attrition. This is surprising since writing up is a fundamental component of the doctoral journey, as Kuther explains: ‘The dissertation is often the most difficult academic requirement a doctoral student faces; many students exhibit delay in completing it’ (Kuther 1999, 1). Lee and Aitchison (2009) argue that capacity-building for writing pedagogy is crucial as writing remains ‘neglected

as a central component of doctoral education' (87) and 'problems and struggles with writing can be seen as an impediment to efficient completion' (89). Yet students are often left on their own to learn the rules of writing according to the styles and nuances of their particular academic discipline (Lee and Aitchison 2009), with Ph.D. supervisors assuming that their students are able to write their thesis appropriately (Johnson, Lee, and Green 2000). A study by Wellington (2010) explores the affective domain in the area of doctoral student writing to show that the intrinsic feelings of students can impact their approaches to writing and so need to be acknowledged. Wellington adds that the notion of writing up as a detached phase of doctoral study should be rejected, and writing should be viewed as a way of developing knowledge rather than just 'knowledge telling' (Wellington 2010, 148). Linked to this is the central message to Murray's self-help guide for Ph.D. students entitled *How to Write a Thesis* (2011) – Murray recommends that students write their thesis from the start of their Ph.D. and throughout their research, and advises a model of continuous writing that she terms 'serial writing' in which the thesis is written in instalments, meaning that writing occurs regularly and with clear intervals between instalments. Serial writing allows the writer to work to a pattern that ideally suits their working and social environment, with the latter sustaining the writing process and not undermining it. Further, Murray argues that serial writing is 'critical for the development of our thinking through writing' (Murray 2011, 179).

In terms of completing on time, several studies have acknowledged the integral role of the Ph.D. supervisor (Lovitts and Nelson 2000; Seagram, Gould, and Pyke 1998). A few studies such as that of Bargar and Mayo-Chamberlain (1983) highlight the importance of supervisory support for the essential activity of thesis writing, offering recommendations such as encouraging students' initial efforts, withholding criticism (in the beginning) and undertaking a critical analysis of the writing throughout. Murray (2011) builds on this and argues that supervisors should motivate their students to start writing their thesis and to maintain writing throughout their research, highlighting the mistake that some supervisors could make if they suggest deferring writing until the end of the project.

In terms of approaches to Ph.D. supervision, these have been explored widely in the literature with Lee's eminent 2008 study that identified a framework for five concepts of research supervision:

- (1) Functional: supervisors encourage a rational progression through tasks
- (2) Enculturation: supervisors act as 'gatekeepers' to their students becoming a member of the disciplinary community
- (3) Critical thinking: supervisors challenge their students to question and analyse their work
- (4) Emancipation: supervisors act as mentors, supporting their students to develop themselves
- (5) Developing a quality relationship: supervisors use emotional intelligence to enthuse and care for their students

It is interesting to hypothesise the approach that supervisors may take to support their students as they write their thesis, as little has been published in this area. One might expect that a critical thinking approach would feature strongly, as a thesis essentially forms an argument that must show evidence of careful consideration and analysis.

A review of the literature has found that few studies have focused exclusively on the student experience of thesis writing to identify factors that students believe enable or hinder the process and subsequently may have an effect on doctoral completion rates. Furthermore, little has been done to explore the *approaches* that doctoral supervisors may take as their students embark on thesis writing. The purpose of this study was to fill these gaps in knowledge.

Methods and data analysis

Institutional context

This qualitative study was undertaken at a London university in the UK. The university has a large population of international postgraduate students, where 15% are from European Union (EU) and 30% are from outside of the EU. The university ranks fourth and tenth largest in terms of numbers of postgraduate taught-, and postgraduate research-students, respectively, in relation to 40 universities and HEIs in London.

Research approach

This study was undertaken using a case study approach, in the form of eight semi-structured interviews with currently registered doctoral students who were actively going through or had very recently gone through the experience of writing up their thesis. Because case studies are typically small in the number of participants involved, there are limitations in terms of how strongly any conclusions can be applied to a wider population. However the merits of a case study approach lie in the richness of data that can be gained from in-depth discussions and analysis of the data, which was felt to be essential in helping to answer the research question. To circumvent the limitations of the approach, selection criteria were applied to sample participants and as much as possible avoid large deviations in the data. Therefore this study did not ask former doctoral students for their insights to avoid problems of memory bias. Only currently registered doctoral students in or beyond their 'writing up year' were approached. Within the student records system at the university, the 'writing up year' is defined as year 4 of Ph.D. study for full-time students, and year 7 of Ph.D. study for part-time students. Some Ph.D. students do start writing up earlier than is required, whilst others choose to defer their writing up year if they require more time to research. Doctoral students who are writing up are no longer deemed 'research active' by the university and pay (often reduced) write-up fees to remain registered as a Ph.D. student. Writing up doctoral students who had recently withdrawn, or who had recently passed the *viva voce* examination were excluded from the research sample to avoid overly negative or overly positive experiences from skewing the study's findings. Based on these selection criteria, the resulting population was 183 doctoral students in or beyond their writing up year. Approximately 15% of these (i.e. 30 students) were selected at random and sent a personalised email inviting them to participate in the study. The email briefly set out the purpose of the study, which was followed up with a more in-depth explanatory letter prior to interview. Participants were told that their experiences would be used to help enhance and inform the support mechanisms for future Ph.D. students. It was anticipated that students having a particularly difficult experience of writing their thesis might view an interview as akin to a 'talking therapy' session and their experiences might disproportionately represent problem cases (as described by Manathunga 2005). To avoid this, the

invitation text was written in a neutral way, being careful to equally appeal to students that had had or were having positive and negative experiences. Over a 4-week period following the email invitations, 10 doctoral students offered to participate, though the eventual number of interviews carried out reduced to 8 since 2 students withdrew from the study.

Prior to undertaking the interviews, ethical approval was sought and granted by the university's ethical approval committee. This ensured that participants were fully aware of its purpose and intended benefits, its intention to maintain their anonymity, keeping all data pertaining to them secure, and clearly setting out their right to withdraw at any time. Informed consent was gathered for all students prior to the interview. Further, students were contacted by telephone prior to interview to ensure that they were comfortable with the types of interview questions that were to be asked. Writing up can be a stressful period for some doctoral students and it was important to ensure that the interview questions asked did not exacerbate this stress.

Study participants

Eight doctoral students volunteered to participate in semi-structured interviews and their details are shown in Table 1. Pseudonyms have been used to protect identities. Most students interviewed began their Ph.D. study on a full-time basis, with two students (Natasha and Sofia) transferring to a part-time mode of study during the research/data collection stages of their study, both for financial reasons. Six students had also only recently completed their *viva voce* (within the past 6 months or less). It is interesting that most students had also completed their Ph.D. study within the recommended period of time as required by the university and by HEFCE (4 years for full-time students and 7 years for part-time students). The amount of time it took for the students to write varied;

Table 1. Participant details.

Name	Status	TTC	TTWU	Funded?	In employment during thesis write-up?
Jennifer	FT	4 years	9 months	Self-funded	No
Tom	FT	10 years	5 years	Self and department	Full-time employment for 5 years
Natasha	FT then PT	6 years	N/A as writing continuously	Self and department	Part-time employment for 6 years
Evan	FT	4 years	8 months	Self-funded	Part time employment for 3 years
Lilly	FT	4 years	8 months	Self-funded	Part time employment for 3 years
Samantha	PT	7 years ^a	2 years ^a	Self-funded	No
Sofia	FT then PT	7 years ^a	N/A as writing continuously ^a	Self-funded	No
Luke	PT	7 years	7 months	Self-funded	Part-time employment for 7 years

FT, full-time; PT, part-time; TTC, time to completion (from start of Ph.D. until *viva voce* examination); TTWU, time taken to write-up thesis; N/A, not applicable.

^aIndicates still writing thesis during time of interview.

some took as little as 7 months, others as long as 5 years, with the median length of time being around 8–9 months. Two of the students interviewed had written their thesis on a continuous basis. All Ph.D. students interviewed were self-funded, with 2 also receiving financial support from their department. Four students were international, which helpfully reflects the proportion of international postgraduate students across the university as a whole. The students interviewed were from a variety of departments within the Business School, the School of Arts and Social Sciences and the School of Health Sciences. Five of the students were in some form of employment (part-time or full-time) during their writing up year.

Data collection and analysis

The data from this study was derived from semi-structured interviews with 8 doctoral students, where a total of 11 questions were asked. The first 7 questions were quantitative in nature, with yes/no, numeric, list-option answer types, whilst the remainder were designed to be more open-ended and in keeping with discourse about doctoral student completions, using the help/hindrane scale by Kluever (1997) and Latona and Browne's (2001) framework for predicting timely completions to guide question design and/or act as prompts during the interview. Questions were designed to focus dialogue and doctoral student reflections towards the writing up stage of their Ph.D. study.

The semi-structured interviews were recorded on an mp3 recorder and transcribed by the author. Thematic analysis was carried out on interview transcripts using Latona and Browne's 2001 framework of three groups of influences for predicting timely completions (institutional and/or environmental; individual supervisory arrangements; individual intrinsic). A further category of 'individual factors (non-psychological)' was added based on Wright and Cochrane's (2000) literature review to initially guide identification of the themes. A random first transcript was analysed and used to identify initial themes which were categorised as either 'helping' or 'not helping'. Subsequent analyses of the other transcripts added to the themes identified. Then, common themes were re-analysed and differentiated according to their correlation to Latona and Browne's framework. Supervisory support themes were further analysed in relation to their connection with Lee's five concepts of doctoral research supervision, namely: (1) Functional (supervisor acts as project manager); (2) Enculturation (supervisor provides gateway to academic culture); (3) Critical thinking (supervisor encourages student to think for themselves, solve problems); (4) Emancipation (supervisor as a mentor); and (5) Relationship development (supervising by experience, developing a relationship with student which is exhibited by high emotional intelligence; Lee 2008).

Research findings and discussion

Themes emerging from analysis of the interview data are shown in Table 2, where each theme was grouped according to whether it enabled or hindered the doctoral thesis writing up process. In the individual supervisory category, themes were further analysed in relation to Lee's concepts of doctoral research supervision.

Table 2. Factors that enable or hinder thesis writing.

	Enabling thesis writing	Hindering thesis writing
Institutional and/or environmental factors	• Support from student's own department in terms of: ○ Providing adequate space and resources for writing up ○ Reiterating key message to write-up continuously throughout study • Peer support and encouragement, peer review of thesis	• Lack of wider institutional support • Negative peer pressure
Individual supervisory arrangements	• Supervisor exhibiting a supervision model which is predominantly functional/project management-focused, and further enhances the supervisor–student relationship.	• Supervisor exhibiting a supervision model which lacks functional/project-management, emancipation and relationship development concepts
Individual factors (non-psychological)	• Emotional and financial support from family and friends • Being in part-time employment	• Difficulty in balancing Ph.D. around family and work commitments
Individual intrinsic factors	• Motivation • Organisation	• Lack of motivation • Lack of organisation

How institutional and/or environmental factors impact thesis writing

Natasha and Sofia were the only doctoral students interviewed who said that they had written their thesis on a continuous basis. Natasha attributed her approach to the support she received from her head of department:

my head of department gave a few talks to us and I remember he said ‘make sure you write as you go along and write it with methodologies because ... by the time you finish it, you are going to forget’ ... I really appreciated this advice ... that bit of writing up made such a difference at the end ... I had quite a bit of work done, maybe a third of the thesis more or less done. (Natasha)

Sofia chose to write on a continuous basis as her department did not encourage her to move to writing up status until she had ‘*a whole draft of everything*’.

Unlike Natasha and Sofia, all the other students interviewed had left their thesis writing until their final year, and clearly demarked research/data collection from the writing process. Wellington (2010) supports this finding, arguing that the notion of a ‘writing up phase’ still prevails amongst many doctoral students and some universities, including the university pertaining to this study. For example the central university student records system categorises doctoral students on the basis of their status as ‘research-active’ or ‘writing up’, with further reinforcement of this categorisation by way of tuition fee differentials, with writing up doctoral students paying less. Combined with a relative inconsistency of message regarding continuous writing up across different departments, it is little wonder that students remain confused and unsure about the writing up process. Evan explains:

there was a lot of uncertainty (about the writing up process) ... and that kind of fed through to the students because if staff didn't know what they were doing in terms of how our study was structured then how were the students ever going to know? (Evan)

De Valero (2001) has recommended the provision of thesis-writing workshops where with their peers, doctoral students can discuss their results, share concerns and receive peer feedback. Findings from this study suggest that workshops like these might be a good idea for institutions to organise – Lilly, Luke and Evan described the support they received from their peers as they were writing their thesis, with Evan making use of online messaging tools:

there were lots of late night chats over the internet: 'oh what do you think of this sentence?' or 'does this sound right because I can't tell anymore what it sounds like, does it make sense?' So there was lots of that and that kept you going because you knew you weren't in it alone. (Evan)

Yet Jennifer, who progressed very well with her Ph.D., remarked on the negative atmosphere she felt when she was around her peers:

So there was a lot of (from her peers) 'how did you manage that?' and 'how have you finished so quickly?' ... it felt like praise, but it wasn't really ... it was like almost veiled criticism ... almost like other people were holding me up as an example of 'you can tell us how you did it'. So I spent a lot of time trying to ... get away from people saying 'can you read this for me'. (Jennifer)

Jennifer's experience may reflect the fact that she had an excellent relationship with her supervisor which enabled her to confidently progress in her studies, whereas the others who depended on their peers had a moderate or less favourable relationship with their supervisor (Lilly in particular).

Concepts of doctoral supervision during thesis writing up

Most of the doctoral students interviewed had a good to moderate relationship with their supervisor(s). Due to rapid staff turnover in his department, Luke was supervised by four different supervisors, which each time caused temporary setbacks in his progress. However he was 'saved' by his final supervisor who worked hard to update herself with Luke's research, advise him on what aspects he needed to finish to move onto writing up, and supported him whilst he wrote up his thesis. Lilly had by far the worst supervision experience of all students, whereby her relationship with her supervisor was practically absent:

he facilitated me I would say, and that's probably the full scope of his support. So he ticked boxes, he signed forms; he got me through the hoops for the University. But he wasn't too good on emotional support and he was non-existent in any kind of academic input! ... it is hard to get that sense of confidence in your own work and conviction, because part of this business is disseminating it and I'm trying to, but on my own ... that's the sadness ... that he (Lilly's supervisor) didn't lift a finger to try to help. (Lilly)

Jennifer appeared to have the most ideal relationship with her supervisor, and frequently spoke highly of him and the support he gave her especially during the writing up process.

Most students identified the importance of their supervisors acting as 'project managers' in terms of chasing up the thesis, and giving final say on when they believed

their student's work was ready for writing up or submission for the *viva voce*. This approach aligns closely with the 'functional' concept identified by Lee (2008):

I saw my supervisor and I said to him, 'look this is what I have got, I am going to stop at that point, what do you think?' And he said to me, 'go ahead ... you know you have enough ... put a full stop here and start writing up'. (Natasha)

she also made me aware of the fact that it's (the thesis) is not quite there yet ... having the supervisor present throughout the writing up process ... checking up on you and following things through making sure you are on the way ... that's really crucial. (Luke)

Doctoral students also identified the importance of their supervisors providing ongoing, relevant, constructive and timely feedback on thesis drafts. Students preferred feedback which was meaningful and encouraging, and also showed that their supervisor believed in their ability. This supportive approach enables students to develop themselves as academic writers and is closely aligned to Lee's mentoring or 'emancipation' concept of supervision:

My first supervisor gave petty remarks ... on grammar and sentence construction, stuff like that ... it just left you feeling very negative and ... that they weren't necessarily getting the bigger picture. And then my second supervisor ... she gave copious notes of feedback ... it made a difference ... she didn't mince her words either, which is a bit soul destroying at times, but I suppose you need that ... fact that her feedback was really targeted and you knew what you needed to work on rather than just kind of an overview of a chapter was great. (Sofia)

I just have to say that she was absolutely brilliant because she was very critical but very supportive at the same time and I think that's a really important balance ... also she reassured me about the quality of my work because, in the last stages you think is it rubbish? Is it any good? Is it original? (Luke)

All the doctoral students interviewed remarked on the quality of their relationship with their supervisor and how this was sustained as a critical factor for success in thesis writing:

my supervisor relationship was fantastic; I was really chuffed when I got allocated my supervisor and we just really clicked, and he realised that I was quite autonomous and he was quite happy for me to just run with it, as long as I kept him up to date. (Jennifer)

Well first of all that is why I went to this University because of John (Samantha's supervisor) ... he is internationally well known and a very good person too ... he has been really helpful in setting up conference calls to allow us to chat on a regular basis. (Samantha)

In her 2008 paper, Lee argues that a supervisor may demonstrate a range of conceptual approaches, yet students may only experience one or two of these. In support of this and in relation to thesis writing, the findings here suggest that the functional, emancipation and relationship development concepts dominate, whilst the concepts of enculturation and, somewhat surprisingly, critical thinking, appear less important or are not used, at least from the doctoral student's perspective.

Individual but non-psychological factors

Five of the 8 doctoral students interviewed credited the emotional understanding and support they received from family and friends whilst writing their thesis. Lilly reflected

on stories of perseverance and determination in her own family to inspire her to keep going, whilst living up to the expectations and pride that her family had in her was a critical motivator for Jennifer. Evan also appreciated that his friends understood why his social life had to be placed on hold as he focused all his efforts into writing.

Prior to this study, discussions with STRs had indicated that financial support during the writing up phase might be a key indicator for on-time completion. However, all of the students interviewed were either self- or self- and department-funded, five of the 8 were in some kind of paid employment and so most did not identify financial help during the writing up phase as an important factor. Only Samantha acknowledged that without the financial support of her husband she would not be in a position to complete her Ph.D.. Interestingly, all the students working in *part-time* jobs found that rather than being a hindrance, their employment enabled an anchor to the outside world and provided a useful schedule around which to write their thesis:

I find the work that I am doing ... very inspiring even if it doesn't directly relate to what I'm writing ... in a way it also gave a sort of framework that I'm working on Wednesday, Thursday and Friday, so I have to get this done by Tuesday. (Luke)

it (work) broke things up ... I did have something else I was focusing on during the week; it wasn't just the thesis ... that did help. (Evan)

However, Tom, who started working *full-time* during the writing up stage, explains that full-time employment was detrimental to his progress:

Well the first time I started writing up I believe it was spring 2005, and then I dropped out of it somewhere in winter 2006. By that time I'd started to work so that's when the troubles started creeping up. By spending too much time at work ... I just didn't push myself in doing it (the thesis) at all. (Tom)

Factors intrinsic to doctoral students that enable or hinder thesis writing

All students interviewed talked about their own behaviours that helped (or hindered) them in writing their thesis. These behaviours were analysed and then themed under the broader processes of 'motivation' and 'organisation' as shown in Table 3. Doctoral students were motivated to write their theses when they demonstrated determination, goal-setting (and self-rewarding), endurance and believed in their writing abilities. Conversely, students lacked motivation to write if they felt doubtful, uncertain, overwhelmed, apathetic or tired. Tom's apathy emerged from his cynicism of Ph.D. research in that he could not see its value and applicability in the wider world. Some students such as Jennifer also admitted to perfectionism in hindering the thesis write-up, whereas Luke claimed his writing 'phobia' was the reason for his delay in writing when in fact he was procrastinating. Perhaps unexpectedly it was found that none of the students interviewed expressed any notion of fear or apprehension of their impending *viva voce* as a factor which could negatively affect their approach to thesis writing.

Students demonstrated good organisational skills by planning their time in advance and being self-disciplined in keeping to a writing schedule. Students such as Natasha and Evan structured their writing schedule around immovable deadlines, with some deadlines leading to a reward such as a holiday which further drove student motivation by providing an incentive to meet their deadlines. On the other hand, students found that

Table 3. Doctoral students' intrinsic behaviours that enable or hinder thesis writing.

	Enabling thesis writing	Hindering thesis writing
Motivation	Determination: <i>Just, grit your teeth and get on with it, one foot in front of the other, don't panic</i> (Lilly) Goal-setting: <i>I found that the only way that I could take this incredibly daunting, overwhelming project, was to break it down into small chunks and set yourself goals and celebrate each goal, you know – even if it was just inside my head like 'yes! I've done this after all this effort!'</i> (Jennifer) Endurance: <i>I was quite focused in that if I was in 'the zone' as such, I would just work around the clock – like some days I would work 'til like 3 or 4 in the morning ...</i> (Jennifer) Self-confidence in writing: <i>... just having worked for 20 years or whatever, I have got some understanding of my level of writing competence, I knew I was going to be okay</i> (Samantha)	Perfectionism: <i>And so for a long time it felt so massive and so perfect in my head, this story of my research, that I was scared to get my laptop out, because I thought I would destroy it</i> (Jennifer) Procrastination: <i>I have a phobia, a writing phobia</i> (Luke) Doubt: <i>...initially I was thinking 'have I got enough data? Have I done enough?'</i> (Natasha) Uncertainty: <i>I wasn't confident as to what a thesis should look like ... I had never done this before in my life – for example can I use the word 'I'? I know that sounds really silly ... but it was all these little things that no one knew the answer to ... my supervisor said that sounds fine but then it wasn't your supervisor who was going to be looking at it</i> (Evan) Feeling overwhelmed: <i>I wasn't looking forward to the writing up stage at all ... it was just the length of it (the thesis), knowing there was so much to write</i> (Evan) Apathy: <i>in my case ... you find something you are very excited about, you start doing it, you will probably have done it, then you think 'Oh, is that useful, is that interesting?' ... it's too narrow, extremely narrow ... and then you just don't want to do anything about it.</i> (Tom) Fatigue: <i>I finished my undergraduate studies when I was 22, started studying again at 23, I'm still studying 5 years later, come on. I'm fed up with it.</i> (Tom)
Organisation	Planning ahead: <i>I'd have a wall planner in my bedroom ... and I literally planned out – this month I'm going to do this, this month I'm going to do that – set a lot of interim deadlines and my supervisor found that hilarious because I was saying to him 'right, we need to meet on this date because then I would have done this'</i> (Jennifer) Self-discipline: <i>I am an easily distracted person so there were certain things that I had to avoid like meeting friends and my boyfriend ... I had to avoid calling people.</i> (Natasha) Working around rigid deadlines: <i>... in August I went away and that motivates me, because I was thinking 'okay I am going away on that date so before that date I have to write this part for my supervisor ... Deadlines for me work. If you leave me without deadlines, that is not good really but with deadlines I am fantastic.'</i> (Natasha)	Poor planning skills: <i>I'm probably not desperately good at planning things so that doesn't help my case</i> (Sofia) Easily distracted: <i>Too many distractions? – yes – of any kind. Shall I sit here and write? Or I can go outside and do what I like.</i> (Tom)

poor organisational skills delayed their thesis writing, with students such as Tom being quite frank about how disorganised he was, which resulted in him becoming very easily distracted. Although a small sample, the findings suggest that having good organisation skills facilitates the motivation required for writing a doctoral thesis.

Some of the positive intrinsic behaviours exhibited by students could be attributed to the good relationship that they had with their supervisor(s). For example Jennifer's ability to organise her time well was done in conjunction with her supervisor who willingly cooperated with her plans to submit draft sections of her thesis. On the other hand Tom, who credited the academic excellence of his supervisors, exhibited less than ideal intrinsic factors which appeared to hinder his writing efforts such that it took him the longest of all students interviewed to write-up. So the link between quality of supervisor–supervisee relationship and its effect on student intrinsic motivation and organisation remains to be determined.

Conclusions

This small-scale study set out to investigate the factors that enable or hinder doctoral students in writing up their thesis. Whilst the factors identified cannot be generalised across the research population, they can be grouped under the broader themes of: (1) institutional/environmental; (2) supervisory; (3) non-psychological / individual; and (4) intrinsic/ psychological. Factors falling into the latter two themes appeared most prevalent (although a strict frequency analysis of factors was not undertaken). Doctoral students' motivation and organisation behaviours played a key role in helping or hindering thesis writing and are consistent with similar findings by Wellington (2010); supporting the notion that recognising the affective domain in doctoral writing remains an important one that we need to support students with. In addition it is worth noting that some of the students who experienced supervisory challenges also appeared to be experiencing intrinsic/psychological ones (e.g. Lilly); this observation is worthy of a future research study across a larger research population to give greater it credence.

This study further identified discrepancies and confusion amongst some students regarding the notion of writing up as a separate phase or as a continuous activity. Most of the doctoral students in this study waited until after they had completed their research to begin writing their thesis; yet the minority of students who were encouraged to write-up continuously positively acknowledged this approach in helping to complete their thesis on time. Though more research needs to be done, continuous writing of the thesis could arguably reduce the negative intrinsic factors and behaviours related to motivation and organisation that students face when they leave the task of writing until their final year of study. Some would argue that this approach has implications in terms of how much time students can devote to their research activities (particularly in experimental, practical disciplines where academic writing tends not to be a major activity). However both Wellington (2010) and Murray (2011) argue that writing continuously can actually foster the development of knowledge, which is arguably better than demoting academic writing to a simple knowledge-telling activity that merely '*transfers thoughts from brain to paper*' (Wellington 2010, 148). Given this and the preliminary findings presented here, future research will investigate a greater range of empirical data to give further support to the relationship between continuous writing and knowledge development.

The findings of this study have indicated that supervisory approaches to supporting doctoral students as they write their thesis are biased towards being functional and 'project-managed' which intuitively would seem to work well in facilitating a model of 'knowledge-telling' thesis writing, which is highly focused and somewhat disconnected from the actual 'doing' of research. The findings from this study indicate, at least from the student's point of view, that supervisory approaches during thesis writing lack a critical thinking element, which Lee describes as the supervisor encouraging the student to question and analyse their work (Lee 2008). Whilst more research needs to be done in this area, it is hypothesised that a supervisory approach that included a greater element of critical thinking may emerge in a continuous writing model, thus aiding knowledge development. In a continuous writing model it is practical to assume that following completion of doctoral research, students may require some time to modify the structure of their thesis so that it tells a more coherent story, reflecting on the entire journey in a written conclusion, for example. However this aspect of writing should be viewed as making the final touches to a largely-completed thesis – 'finishing up' as opposed to 'writing up'.

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