Achieving a Doctorate Through Mixed Methods Research

Caroline Stockman
University of Winchester, Winchester, UK
Caroline.stockman@winchester.ac.uk

Abstract: The journey of any doctorate is a challenging one. It constitutes a learning curve for postgraduate students towards becoming effective and fully independent academics. Through a concern for effective mentoring, the challenges of the doctoral effort have been well-documented. The particular issues a Ph.D. student may face when choosing a mixed methods design merits some further attention, however. Mixed-methods research is growing in popularity across academic domains and levels. Achieving a doctorate through a mixed methods study can be a very fruitful endeavour indeed. Excellent core handbooks, example studies and ongoing formalisation of the approach aid in delivering successful work. Yet the chosen methodological path may also bring up some specific hurdles. This paper aims to discuss some of those potential barriers as learning opportunities, and offer an initial discussion of the support systems. Specifically highlighted as potential challenges are the current 'trendy' nature of mixed methods research, the search for optimal design, the development of skills, domain loyalties and paradigm problems, specific difficulties in publishing, isolation threat and justification needs. For Ph.D. students, an understanding of these challenges is a first step towards overcoming them, and achieving conscious competence.

Keywords: mixed-methods, Ph.D.

1. Introduction

Doctoral students occupy a peculiar yet vital place in academia. As learners, they choose to continue an already extensive journey of higher education, which is likely to double their time as students in the formal pursuit of intellectual growth. As researchers, they seek out a new and unique contribution to the academic domain and this makes their efforts so important beyond individual success, to the ultimate advance of academia and knowledge. The challenges these students face are numerous and varied. Thankfully, they have also been well documented in an ongoing concern for effective mentoring (Jones, 2013). As a teaching and learning community, we are well aware of finance and resource issues (Neumann, 2003), psychological adjustment hurdles (Beeler, 1991), difficulties in negotiating multiple roles (Byers, 2014), or the effects of social (dis)engagement in the scholarly community (Spaulding & Rockinson-Szapkiw, 2012), to name only a few examples of potential obstacles. These peripheral aspects are as important as the challenge of the Ph.D. itself, which includes effective research, writing and dissemination of findings, all at a high academic standard.

In this paper, a number of particular challenges are highlighted for the Ph.D. student embarking on a mixed-methods study. Of course, they share the challenges any other doctoral student faces. Yet a number of barriers may occur specifically through the pursuit of mixed-methods research. Some of these may also be encountered by more advanced researchers conducting mixed-methods studies, but the dawning position of the Ph.D. student as independent academic researcher sheds a different light on certain issues. As with all doctoral work, it is important to continue documenting the potential obstacles to ensure effective practices in mentoring and supervision of the candidates.

Also for students, it is no doubt best to commence the journey well-informed. An awareness of possible issues is not only a good step towards overcoming them, it is also extremely useful to self-assess growth as an early stage researcher. Therefore, this paper will highlight some of those issues and discuss them in view of the academic learning curve at doctoral level.

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2. Mixed methods research

There is excellent core literature available on mixed-methods research, such as Teddlie & Tashakkori (2009), or Creswell & Plano Clark (2011), and also in domain-specific publications, for example by Johnson & Christensen (2008) for education, Saunders, Lewis & Thornhill (2012) for business students, or Watkins & Gioia (2015) for social work. In this literature, novice researchers can find very good foundational information on the paradigm debate, particular designs and their motivations, or example research and guidelines on the best ways to manage and write a mixed methods study. There is a prevailing perception that mixing methods is fairly new, though many older instances can be found even dating back to the 1920s and '30s. (De Lisle, 2011:89). In the last two decades (Creswell, 2011:22), mixed methods has steadily developed its own typology, terminology and notation system, despite some remaining controversies (p.37). Therefore, its formal existence is dated within the last ten to fifteen years (Teddlie & Tashakkori, 2012:775). It can be argued that viewing mixed methods as a third paradigm is in fact not helpful to overcoming those lingering prejudices. It perpetuates a paradigm debate which creates difference and invites positioning, rather than encourage a flexibility in research to optimise quality of the work.

Nevertheless, practical considerations for the execution of mixed methods research, particularly for postgraduate students, should continue expanding (Halcomb & Andrew, 2009:153). The quality of any research will in part depend on effective management on a pragmatic level. Mixed methods studies come with their own challenges, not in the least because of the priority and timing of the different phases within the study. This paper does not aim to provide a general guideline regarding such management, but flags a number of challenges which the doctoral student in particular will meet on the way. Regardless of the chosen design, a number of issues may arise which are the hurdles to jump on the way to the viva. These are moments of growth on the learning curve, and prior awareness of the potential barriers is a good step towards overcoming them.

The view on mixed methods held here is that method is not the goal of the research in itself. It may for example fit the research question optimally, or it may improve upon the commonly used design by providing a new way of looking at things. With the increasing popularity of mixed methods research, a beginning Ph.D. student may be tempted to follow a trend, or make the wrong assumption that mixed methods research will inherently guarantee that requirement of a new, original contribution to the field. There is also the opposing view, that a mixed methods study for postgraduate students is 'unnecessarily burdensome' (Halcomb & Andrew, 2009:154). The authors' view is that this is not the case. There are plenty of examples where single researchers have achieved mixed methods research of excellent standard (Teddlie & Tashakkori, 2012:777). Mixed methods offers a wealth of opportunity for students to grow as independent, self-sufficient researchers. It should not be discouraged simply to avoid a steep learning curve. On the contrary, doctoral work is meant precisely to challenge on such a high level. With an understanding of those challenges in advance, and effective mentoring, a mixed methods Ph.D. study can be a very worthwhile and successful endeavour.

3. Challenges

Pursuing a doctoral qualification through mixed-methods research means particular challenges will occur on the way. As a postgraduate student, it is important to view these as learning opportunities in the process by which one becomes an independent academic researcher. Facing those challenges and overcoming them enables that growth, and allows the student to successfully continue on the path towards achieving a doctorate.

The following points list such challenges which have been identified in mixed-method doctoral research. They do not form an exhaustive list, nor will they necessarily apply in all cases. This is only a selection of highlights where difficulties may occur as a result of the chosen methodological path,

and for the position of a novice researcher. An awareness of the points below is the first step towards 'conscious competence' (Beeler, 1991), which is the accumulated sufficient knowledge to have a conscious grasp on your own capabilities. Some initial suggestions of what might be helpful to overcome these difficulties are also provided, though a more extensive review of existing support systems will follow later.

3.1 The danger of trends

As already indicated above, mixed methods research is growing in popularity, and with it comes the perception that the approach is fairly new. This creates different assumptions and expectations. A novice Ph.D. student may assume executing mixed methods research is a guarantee for the required original contribution to the field of knowledge. Secondly, the pursuit of mixed methods for the sake of it, rather than in function of the research question. Thirdly, misunderstandings due to limited information exposure. For example, using open answer items on an otherwise quantitative survey tool does not constitute 'mixed methods'. Plowright (2013) found such inconsistencies and various elements of confusion among postgraduate students with regards to fundamental knowledge of mixed methods research.

These assumptions not only affect the mind of the Ph.D. student; recognised academics may fail to be well-informed on the depth of the matter. This is further addressed in the point 'Justification' below. It also highlights the value of having a supervisory team with mixed expertises (Halcomb & Andrew, 2009:158). There is, in any case, excellent literature available to become more acquainted with key debates and arguments, philosophical underpinnings, paradigmatic differences, the variety of designs, or example studies such as Teddlie & Tashakkori (2009), Creswell & Plano Clark (2011), Saunders, Lewis & Thornhill (2012),… To become effective practitioners of mixed methods, a first learning goal is thorough familiarization with this literature (Bazeley, 2003:3).

3.2 Roads diverging

If the choice for a mixed-method approach is driven by the search for a more sophisticated understanding of the subject at hand, then a consideration for the combination of data stemming from the different phases of research is vital. Though there are many combinations possible during every step (collection, analysis, report…), no single mixed method design is used most frequently (Creswell 2010:68). There have, however, been some suggestions for the currently common designs to become more 'imaginative' (Teddlie & Tashakkori, 2012:778). Qualitative and quantitative data can be collected in a parallel or sequential way, more or less corresponding to a chronological or embedded phasing, they can be used exploratory, explanatory or confirmatory, in a cycle or a linear progression,…Next to this, there are more decisions to make with regards to the specific tools or analysis methods used. For qualitative data, for example, is the optimal data gathering instrument a focus group, interviews, documentation, observation,…? It is a matter of picking the right tools for the job. This can be thought of as methodological eclecticism (Teddlie & Tashakkori, 2012:777).

This freedom can be refreshing but also overwhelming to a novel researcher. Upon completion, it will be one of the great affordances of a mixed methods study. It means the Ph.D. student, in his or her development as academic researcher, has achieved a competency regarding methodological choices at doctoral level. They have, in other words, become a methodological connoisseur (Teddlie & Tashakkori, 2012:777).

Choosing the wrong design may prove fatal. He or she will only have some previous experiences providing lessons learnt, and yet the stakes are so high. It is good to be aware of how vital the design is, but the pending choices cannot become self-debilitating. "Learn to take risks, but also to justify the choices made." (Bazeley, 2003:3). It is a first aspect in which the Ph.D. mentor plays a crucial

role, to advise or caution on appropriateness and feasibility during the literature review of possible designs (Philips & Pugh, 2005:40). However, the student should also be encouraged to explore and make their own decisions, at all times led by the research question – not necessarily the domain's traditions or other constraining expectations. Integrated coursework and where possible, previous experience are considered necessary to overcome this barrier (Teddlie & Tashakkori, 2012:777). Brown (2014) found higher levels of prior experience were clearly beneficial, and those students 'were more inclined to cite the need for a course in order to use a mixed methods approach' (p.4).

There is usually a good familiarity with at least one research tradition or paradigm before the start of the Ph.D. In relation to some of the following points, i.e. 'Skillset' and 'The Paradigm Problem', this may be both an advantage as well as a disadvantage. It is time saved, of course, when you are already well-versed in statistical analysis beforehand. Or, interviewing techniques. However, the common acceptance of statistical analysis or interviewing in previous academic studies may be deceiving. It is the typical danger of accepting things as 'normal'. When other paradigms come into play, which is often the cased in mixed methods, the commonly accepted approach may not be so unproblematic. Within the quantitative paradigm for example, qualitative research is regarded as rather biased in comparison to numerical data (Ma & Liu, 2004:62). The opposite is also true, as the ease (and sometimes requirement) of data manipulation in quantitative research is emphasised (Gitelman, 2013). Even for more establish academics, the normality bias is also influential when overlooking common misconceptions, for example in statistical research (Bezzina & Saunders, 2014).

When roads diverge in determining the right design for a mixed methods study, it is important to review each option from an independent, critical stance. In this way, the assumptions that may come with prior experience may not always be the best advisors. An awareness and conscious handling of such inner biases is a trait of any good researcher.

3.3 Skillset

A doctoral degree is a significant process of intellectual growth in any guise. Yet with mixed-methods, the time spent on skill development is likely to increase. There is the simple practical necessity for the researcher to have sufficient knowledge and possibilities to conduct both quantitative and qualitative research in a harmonious and timely manner (Creswell & Plano Clark, 2011:13). This also includes knowledge, informed selection, and competent, critical use of various software programmes such as SPSS or R, or NVivo. With a background in Humanities, developing skills in advanced statistics may not come easy, for example.

There are skeptical voices that would call an advanced competence in both qualitative and quantitative methods 'superficial, perhaps even unworkable' (Denzin, 2008:322). This is too pessimistic, but it cautions towards underestimating development of skills.

There is an ongoing development of courses focused on mixed methods (Early, 2007), but the many existing courses, workshops, online and offline resources available for both quantitative as well as qualitative data gathering and analysis already provide plenty of growth opportunity for the Ph.D. student. In fact, the possibility of selection and choice enables a deep personalisation of learning, and this may be beneficial to the overall evolution of the Ph.D. student to independent researcher (Rich, 2014).

As a matter of management, the existing and lacking skills should be identified at the start of the research, and their development planned into the general timeline of the study. Time is of the essence in a mixed-methods study anyway, as the overall duration of execution in collection and analysis will probably be longer than usual (Halcomb & Andrew, 2009:155). Also, these activities may require travel and additional financing (Halcomb & Andrew, 2009:157).

There are some – controversial – suggestions that it would be acceptable for Ph.D. students to have part of the execution of their research done for them, such as the statistical analysis of a survey. However, this conflicts with the idea that a doctoral study is an independently conducted academic study. A sense of ownership over all components of research, and pride to excel in pursuit of their topic on all levels, should override the challenge of developing skills. Next to this, the analysis is profoundly aided by handling the data directly, rather than merely reviewing results afterwards. Lastly, the Ph.D. study is always about more than the research results, but the learning curve of young scholars to become free, critical, self-sufficient academics.

3.4 Domain loyalties

The difficulty of all mixed-methods is to combine methodologies, and possibly opposing theories, in a successful way yet not be untrue to either domain. This particularly materialises if there are multiple supervisors or mentors, each pulling into a different direction. This challenge is ironically related to the good suggestion that mentor teams or advisory panels should indeed be composed of people with different expertises (Halcomb & Andrew, 2009:158). What should feature centrally is the research question, and from the start, the dominant methodology or theory (or the harmony between them) should be outlined so all parties are aware of the focus. In the text, conceptual tensions should be identified in the same way. In the life of the Ph.D. student, the pull in different directions through his or her support group can be profoundly bewildering. An openness and understanding from the mentors or supervisors cannot be overestimated here. Yet at the same time, this is another point on the learning curve of the Ph.D. student. Academia is buzzing with opposing views and multiple perspectives. This is what keeps the field alive, and stimulates its dynamic nature. Being an independent academic researcher means finding your own informed voice in the debate. Domain loyalties materialise through the people you work with, and these have emotional links. It is important for all parties to keep in mind that academic stance-taking is not a personal matter. It is, in fact, an intellectual imperative.

When the viva comes, that final moment to defend the work, this will be particularly explicit. The role of the viva's facilitator may be particularly vital here. However, it is the moment to demonstrate that learning curve; where the voice of a well-versed, effective practitioner of academic research is meant to come forward and debate the choices made.

3.5 The Paradigm Problem

The height of the paradigm debate in the development of mixed methods research is located in the eighties (Creswell & Plano Clark, 2011:26). However, that does not mean it is an irrelevant matter today, even with a pragmatic research stance. Data collection and analysis are always steps in a broader research philosophy, which needs to be made explicit in any research. In fact, for a mixed methods Ph.D. student, it may be found to be 'the key to resolving thorny issues about the nature and intention of different data collection and analytical activities' (De Lisle, 2011:104). This can happen on both a micro as well as macro level in a study. For example, in Stockman (2015), one of the data gathering tools was a survey instrument. However, this is a tool typically associated with the quantitative paradigm. This is not something which the domain of this doctorate, Cultural Studies, would typically adhere to, due to their theoretical assumptions and historical disinterest in numbers (Deacon, 2008). However, preceding and succeeding phases of research ensured the instrument was well-framed within the more common qualitative paradigm. In the overall design choices, the research overcame the skepticism towards numbers, their easy manipulation or questionable assumption of interpretation objectivity (Gitelman, 2013). Further design choices, even for details, were informed by the same understanding of paradigm preference. To continue the example of the survey tool, Likert scales were used as answer options for some of the items. These are a common device in many survey tools. Cultural Studies, within the qualitative paradigm, is

happy to accept a gradation of reality rather than a black and white (yes/no) version. Open answers would be even more desirable, and indeed the survey included these too, but categorical data is simply more fit for statistical analysis. All the items and wording in the survey explicitly corresponded to data drawn from the qualitative phases. This ensured the answer options were not entirely imposed top-down, yet represented the reality participants had described in their own words. Also, a 6-point scale was used rather than the more common 5-point or 7-point scales. This way, the participant could not choose a safe middle ground, as a cultural sensitivity presupposes there will always be an inner bias towards 'a little more' or 'a little less' on the agreement spectrum.

Having a dominant philosophical stance towards research does not mean a Ph.D. student should swear allegiance to one paradigm. One characteristic of mixed methods research is 'paradigmatic pluralism' (Teddlie & Tashakkori, 2012:779). This means a variety of paradigms may serve as the underlying philosophy. Understanding the various influences, prejudices and possible remedies is one learning goal for the mixed method Ph.D. student (Bazeley, 2003:4).

3.6 Publishing

The need to publish as an academic is a global phenomenon. However, publishing as a doctoral student is likely to also be a formal requirement in pursuit of the degree, and yet challenging due to the inexperience in doing so.

A first particular challenge for the mixed methods Ph.D. student is the aptly named process of 'salami slicing' (Durani, 2006:976). In order to optimise research output, the findings of the study are cut up and disseminated separately. For example, reporting on every phase of a mixed methods study separately. This may confuse the fact that a publication is part of a larger analysis. Cross-referencing publications is one option to remedy confusion and tie the parts together, but the time it takes to publish in peer-reviewed journals may hinder this practice. Another reason for 'salami slicing' might be that there is no suitable platform to publish the research in its entirety. It may be too long for journal articles, unsuitable in book format, and so on.

Secondly, there is a growing search for templates or example reports even for more established mixed methods researchers (Halcomb & Andrew, 2009:159). For example, the order in which the different phases are explained. Next to this, qualitative and quantitative research comes with its own language, and the choice of style, language and voice is therefore another learning curve for the writing skill of the mixed method Ph.D. student (O'Caithan, 2009). This also occurs simply in the writing of the thesis itself, without publication in mind. Creativity and innovative approaches should only be welcomed here. It can be a learning goal in itself to develop a new way of presenting results, particularly where conventional formats don't fit the methods used or information gained (Bazeley, 2003:3).

Many academic journals also tend to favour particular topics or methodologies which can make other research harder to get published. Quoting Dale Goodhue (2007:221): "It is truly difficult and risky to be the first to argue for a new way of thinking about an issue (as a doctoral student named Fred Davis did with TAM). But these are the real contributions to the field. If our doctoral students (and our journal reviewers!) would better understand this, the IS field would be much more vibrant, and contribute more to society." The shared pressure of academia to publish in top peer-reviewed journals applies to mixed-method Ph.D. students as well. The threshold is high, especially when questioning established ways of approaching a topic. "Original research can be dangerous in that it can undermine previously dearly held beliefs and careers." (Lee, 2007:688). However, as mixed-methods research grows in popularity, so will the publishing opportunities in journals and other platforms. Also, the open access movement gains new breath every day.

3.7 Isolation

Within any research team, there is of course a treasure of shared knowledge. Mixed-methods students particularly can benefit from close integration in the group (Shulha & Wilson, 2003; Bliss, 2008; Hall & Howard, 2008). Yet at the same time, the Ph.D. path may methodologically differ from the general trend or beliefs within the team. A Ph.D. student of mixed-methods may simply encounter difficulties or have questions, to which nobody in the team has an answer. Or, colleagues may have opposing views to the work one is doing, which may undermine motivation and sense of place in a social unit. This goes beyond the general solitary experience of the dissertation student to a sense of standing alone in the crowd. In this case, the Ph.D. becomes a balance act to draw from the shared insights where appropriate, yet remain firm in the mixed-methods approach where needed. It is a social skill as much as one of research independence. It endangers intellectual profit to deviate from the plan for the sake of belonging – so intellectual isolation might be to some extent necessary, but there is no need for it to extend beyond that necessity (Philips & Pugh, 2005:73). It's a learning curve: to be independent and firm in research, yet a well-integrated part of the academic community. Good contacts also outside the research team are one way of sustaining that much-needed social aspect of research.

3.8 Justification

Any type of research comes with its own need for justification, of course. Qualitative research battles with notions of subjectivity in its quest for academic yet sensitive rigour of analysis. Similarly, quantitative research faces accusations of data manipulation (Gitelman, 2013), uncritical reports (Deacon, 2008), and so on. It is simply good practice for any academic to have a strict awareness and explicit motivation for what type of research is executed, why, and how.

Mixed-methods research is in itself not yet without controversy. It is the 'Question of Convincing Others', as Creswell and Plano Clark would say (2011:15). Any Ph.D. study will be subject to considerable demand for justification and defense. Choosing a mixed-methods design for a Ph.D. will not make this any easier, especially if some members of the final committee or colleagues are disinclined towards new methodology. However, as already said above, if it fits the research question and the intellectual yield can be demonstrated, it should not be avoided for fear of the defense effort. Ph.D. mentors, existing literature, and the broader network can help to critically arm against the doubts cast. This justification effort will be a continuous demand throughout the journey. Though sometimes tiring, particularly when combined with the sense of isolation described above, it also forms good preparation for the final jury, and for life as an academic researcher.

4. Support

The above points highlight why doctoral students making use of mixed-methods face challenges which are particular to the chosen path. Achieving a doctoral degree through mixed methods research is, however, a possible and fruitful endeavour. Despite the many challenges, there are also support systems in place for every Ph.D. student. The text below discusses their importance specifically for mixed methods Ph.D. students.

Support can be activated in two ways: on the one hand, supporters such as the mentor, the research team, friends, course leaders, and so on, play an active role in providing much-needed guidance for the student. On the other hand, the student should not remain passive, but actively seek out those support mechanisms. It is another step on the learning curve towards becoming an effective practitioner: understanding your own needs, finding those coping mechanisms that work for you, and bringing them into practice as and when required.

4.1 Role of the Mentor

In many ways, the Ph.D. supervisor or mentor for a mixed-methods student will act and react the same as for any other of their doctoral students. Such guidelines for both doctoral candidates as their supervisors are well-represented in literature; for example Philips & Pugh (2005), Finn (2005), Wisker (2012);… For many cases, a tailored approach will work best, although there are common needs. This is particularly relevant for mixed methods Ph.D. students, as the individual nature of every student is even more emphasized by the individual requirements emerging from the research design. This gives rise to ideas for further development in personalising learning resources (Rich, 2014).

The highlights above indicate that perhaps more attention should be given to certain aspects of mixed-methods work. For example, time management from the very start is absolutely essential, as the different phases of the design will take more time, and the development of skills should be planned accordingly (Creswell & Plano Clark, 2011:14). The Ph.D. mentor in many ways has an enabling role which can help the student a long way. To be able to quickly enrol in the correct training course, can make a big difference, for example – rather than wasting time in low-quality or too-advanced courses. Or to have quick and easy access to the right programmes such as NVivo, SPSS or R, rather than having to go through a lengthy administration processes and expenses sheets. These are small things which make life a lot easier.

It would certainly be recommended that the Ph.D. supervisor or mentor has experience of his own in the type of research his student is conducting (Teddlie & Tashakkori, 2012). However, mixing methods is still fairly new and only budding as an acceptable way to proceed for everyone. It is a positive step for instructors to recognise their own lack of knowledge (Bezzina & Saunders, 2014:118). In this case, there should be one (or more!) co-supervisors who are able to provide more focused support on certain aspects of the research (Halcomb & Andrew, 2009:158). This type of mentoring can also proceed informally, something which the main Ph.D. supervisor can enable through recommendations. “The supervisor can choose which gates to open, particularly in the early stages of the researcher’s life.” (Lee, 2007:688). Regardless of the power implications of this position, it also has an effect on the perception of the Ph.D. student towards to mentor. The Ph.D. mentor becomes ‘a broker’ (Rich, 2014:135). He or she is no longer someone who knows everything, but someone who facilitates. Interestingly, research has found teachers were most valued for their expertise by students, though they did not consider that expertise directly influential on their learning (Brown, 2014).

4.2 Other Support

For mixed methods research, it seems hard to overestimate the value of team effort, as it has been found many times to be a vital factor (Shulha & Wilson, 2003; Bliss, 2008; De Lisle, 2011:105). The value of formal collaboration has even been called critical for mixed methods research (Hall & Howard, 2008). For the student pursuing a doctorate with a mixed methods study, team spirit can support the endeavour in two ways: academically, and socially.

Academically, it helps budding academic researchers to observe the methodological problem-solving skills of others in the team (Teddlie & Tashakkori, 2012:778). It is also a learning goal in itself to work with other people in different approaches (Bazeley, 2003:3).

Socially, there is that element of emotional support from faculty members which is important to any Ph.D. student (Jairam & Kahl, 2012). This has, however, particular relevance for a mixed methods Ph.D. student, in view of the challenges of justification and isolation. Already noted above is possible differing views on methodology within a research team. An openness from the team both socially as

methodologically does a lot of good (Philips & Pugh, 2005:17). Learning may actually go both ways in this case.

This professional and emotional support goes beyond the immediate research team, to colleagues faculty-wide, university-wide or even in contacts outside the university. Though a sense of isolation may occur, as discussed above, it is simply not the case that a mixed methods Ph.D. student stands completely alone. There are many more doctoral students, and academics, who are conducting the same type of research. Like any other Ph.D. student, it is important to actively network with them at conferences, events, online, through existing contacts,…

Training is another vital support system which will certainly be part of a mixed-method Ph.D., whether it's interviewing techniques, statistical analysis, a more general course on mixed methods,... It directly addresses the 'Skillset' challenge, but also goes a long way to overcome 'Isolation'. Courses and workshops are actually a great place to build up a relevant network of people who are in the same boat. There are always in-house trainings offered by the university, but it pays off to look further afield and make new contacts at other universities, even internationally. Both for networking as the actual skill development, it is worth investing in training. One-to-one tutoring is also highly effective in terms of focused progress.

Much support can also be found in literature and online resources. Mixed-methods is a growing field, and literature is blooming. Therefore, tips and guidance can simply be found by reading a lot beforehand and making your way through someone else's lessons learnt. Within course modules, offering flexibility and choice between smaller units of learning allows to personalise the learning experience. This can be beneficial to the growth of a Ph.D. student as effective practitioner of academic research (Rich, 2014:137).

4.3 Final note

It is important to emphasize, as the start of this paragraph did, that the above support mechanisms can and should play an active role, but that the Ph.D. student should not be passive in the matter. "Be prepared to recognise and admit what is not known, and seek advice" (Bazeley, 2003:3). In other words, you support yourself as a Ph.D. student. Not only in terms of knowledge gaps, but in skills, and attitudinal matters such as persistence and determination. It helps to have supportive friends and family, but your own mindset can help you through the ups and downs of doing research. The increasing self-reliance to seek out solutions to personal needs will stimulate growth towards becoming an independent academic researcher (Rich, 2014:138). There have been some findings suggesting the positive effects of keeping a research journal (Lamb, 2013), which may be one useful pedagogical tool in this process. In doing mixed methods research, it is always important to maintain academic rigour and arm yourself against controversy; but at the same time have fun thinking outside the box.

5. In conclusion

The challenges for mixed-method Ph.D. students are to some extent shared by all doctoral students, and also in part by other mixed-method researchers. However, certain difficulties may arise through the particularity of the chosen methodological approach in pursuit of a doctoral degree.

Firstly, the popularity of mixed methods research and perceived novelty may bring certain assumptions into effect, which are a danger to the quality of the study. Next to this, the many research design choices can be quite overwhelming, yet rather vital to the overall success. Some choices may also lead to conflicts with or within the supervisory team, or more generally towards the established ways of the domain(s) involved. This can be related to the paradigm problems. Although mixed methods research now proceeds beyond the great paradigm debate, it is still

influential on a pragmatic level (and it should be, to ensure correct application of theoretical underpinnings). This is not unrelated to the pervasive need for justification, both formal and informal. As a sixth challenge, publishing is a difficult matter for novice researchers attempting original work, as they struggle to find the right platforms, or lack many concrete templates. Yet they also have to cope with different research languages, styles and typologies. In addition to specific writing and publication skills, the Ph.D. will also entail a more extensive component of skills development for research purposes. Lastly, mixed methods Ph.D. students may face a sense of isolation beyond the solitary experience of doctoral research. This is particularly the case when the existing social unit, such as research team, does not share the same methodological ambitions.

Though these are challenging moments, they are also great learning opportunities. Through overcoming them, the high standards of a doctoral qualification may be achieved, as the postgraduate student evolves towards becoming an effective academic and practitioner of mixed methods research. An awareness of the challenges, and increasing independence in addressing support systems and coping mechanisms will enable the student to profit more fully from the affordances of a mixed methods Ph.D. study.

The Ph.D. mentor or supervisory team plays, as always, a crucial role. The individual nature of every student is emphasised through the nature of mixed methods research, and particular needs which arise for every single student. Here, the mentor may act as a facilitator of research, recognising the need to offer assistance beyond personal expertise. Next to the mentor, the research team is of vital importance for mixed methods research. They can help the student both academically as socially, which is specifically relevant in consideration of the hybrid nature of the student's work. Also, the wider network, provision of training and workshops, a growing body of literature and various online resources, continue to be sources of valuable help towards achieving a doctorate.

To optimise these support systems for the student, it is important to continue documenting the challenges, and compile guidelines for effective practices in mentoring. An improved understanding of common challenges helps to provide a good support base for the student and ensures pleasant and successful years of work, ultimately benefiting the academic community as a whole.

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