

The Doctoral Viva: Questions *for, with* and *to* Candidates (or supervisors)

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ARTICLE INFO

Article history

Received: August 01, 2021

Accepted: October 01, 2021

Published: October 31, 2021

Volume: 9 Issue: 4

Conflicts of interest: None

Funding: None

Publication Note: *IJELS* appreciates the distinguished scholars, Martin Cortazzi and Lixian Jin, for accepting our invitation to contribute this Featured Article.

ABSTRACT

This paper presents questions within a consideration of the nature of doctoral viva examinations from an international viewpoint. We argue that preparation for the viva should begin early - certainly not just immediately after the thesis submission. Key viva questions can be used in a preparatory process with supervisors over time to develop candidates' thesis thinking and research capability. The paper gives guidance and advice for *candidates* (and for *supervisors* to help candidates) about how to prepare practically for the viva. More importantly this should help them to enter the mindset of examiners. This enables candidates to enter fully into discussion of a thesis confidently and enthusiastically, to share their research thinking in a focussed manner which takes broad issues into account. In a detailed Appendix, we share a repertoire of 60 examples of generic viva questions which are commonly asked in many international contexts, together with guidance about answers in brackets. Using these iteratively with supervisor help, candidates are encouraged to generate their own specific questions as part of a formative research process. Viva preparation guided by key questions can begin early as an inherent part of the research-and-writing process: questions are first *for* candidates, then developed *with* candidates, and then finally in a viva put *to* candidates. The questions are a framework for supervisors, too, who are often examiners themselves.

Key words: The Doctoral Viva, Candidate Preparation with Supervisors, Questions in Vivas and Doctoral Research

INTRODUCTION: THE NATURE OF THE VIVA

The *viva voce*, known commonly simply as the 'viva' or the PhD 'defence', is a landmark occasion to evaluate a doctoral candidate's written thesis (or dissertation) and their command of a field of advanced study. When a candidate passes this examination, it is recognition that the new PhD or professional doctorate holder has mastered an area of scholarship with research expertise to conduct serious investigations which contribute to knowledge, and which is often applied to practice in a profession. The viva is an intellectual encounter at a high level. 'Viva voce' (from Latin) literally means 'a living voice'. This is a telling phrase. It is not only an oral examination but also a time for a candidate to give individual voice in a live performance. Such a performance should be prepared. It can be rehearsed and practiced, up to a point. However, this cannot be a recitation of a prepared speech or memorized phrases: it is more of a sustained dialogue with committed participation on all sides. Preparing for the viva is arguably a longer-term process in which the candidate is developing doctoral qualities. These emerge readily in the viva because they are iteratively acquired over different stages.

The viva itself can be an occasion for teaching and learning: candidates may learn from examiners. Good candidates also enlighten examiners on features of a specialized topic. Many examiners hope for this. After all, at this stage candidates under careful supervision have spent a lengthy period to research a thesis topic: they surely have something interesting and insightful to share. In this sense, candidates can perform as experts. They can engage positively with examiners in an intensive event that rarely re-occurs for them as individuals, until perhaps some become examiners themselves.

This paper suggests a series of viva questions that are *for* candidates, preferably applied early on in their doctoral studies. They are developed *with* supervisors in iterative dialogue over a period while research is planned and carried out and while the thesis chapters are being produced. Later, these or similar questions are put *to* candidates in the viva. Some of the questions can be systematically raised by supervisors and internal assessors or panel members during candidates' annual reviews and evaluations of progress before the thesis submission. Many viva questions are predictable and specific answers can be discussed during research planning and enactment, during writing up, and again before the viva

(Trafford & Leshem, 2002a). Of course, in this long-term process answers will develop and be elaborated. Viewing the questions in this way gives a step-by-step way to prepare and practice not only for the viva but also to engage progressively in deeper research thinking as qualities of doctorate worthiness are developed. The questions guide the research and frame the thesis writing. Over time, they invoke researcher thinking: it is part of the purpose of the viva to assess such thinking. This means that, as a candidate, your answers to these questions are evolving as your understanding of the complexities and implications of research improves, but when you arrive at the viva you are well-prepared.

The paper outlines some problems with viva preparation, introduces foundational questions, and shows some international viva variations, with some language-and-culture related issues which apply particularly to some candidates using a second language. It outlines key questions which guide examiners and other key questions to which supervisors and candidates can develop answers during the thesis process. A much wider repertoire of generic questions is presented in an Appendix: the categories of these can be used with supervisors at different stages. They can serve as practice material for viva preparation in doctoral seminars and mock viva sessions. The questions are particularly oriented to education, linguistics and language studies, and more widely to social sciences with some relevance to arts and humanities, especially to theses with professional applications.

PROBLEMS WITH VIVA PREPARATION

Preparation for the viva is vital for doctoral candidates. This is not simply to minimize difficulties, but for their engagement in a process of learning and extending research thinking. However, in practice there are three common problems concerning viva preparation. First, most people think of the viva as the final stage of completing a doctoral thesis. Many candidates only pay specific attention to preparing for the viva after they have submitted their thesis. Thus, preparation is compressed within a few weeks. But this is a missed opportunity to develop thinking and learning through viva-type questions over a much longer period. Second, preparation is largely left up to individuals. Research methods courses for postgraduates generally include considerations for writing up a thesis, but few offer detailed guidance for viva preparation. Supervisors may conduct preparatory seminars or a mock viva with candidates, but these can be infrequent and they depend on initiatives of individual supervisors. In many institutions, supervisors must complete supervision training before they can become first supervisors, but such training often pays relatively little attention to the viva. Examiners may vary in their stance towards the purpose and conduct of the viva (Poole, 2015). Training programmes for examiners, which might clarify this, seem rare: examiners are generally chosen for their academic expertise and publications or because they have recognized examining experience. Overall, viva preparation for everyone seems to depend on individuals. Third, at least in the UK and in similar systems around the world, candidates have limited opportunities to find out about a viva until they participate in their own.

There are several potential solutions to these problems, where they arise. First, candidates (and supervisors) can peruse the available range of books explicitly written about the viva (Tinkler & Jackson, 2004; Trafford & Leshem, 2008; Smith, 2014; Murray, 2015; Denicolo et al., 2020). Second, and perhaps more easily, candidates can consult the specific chapters of doctoral handbooks to look for guidance about the viva (Leonard, 2001; Finn, 2005; Phillips & Pugh, 2015; Lantsoght, 2018). As a third alternative, like their supervisors, they might delve into advice given to supervisors (Delamont et al., 2004; Denholm & Evans, 2007; Watts, 2010; Wisker, 2012; Taylor et al., 2018) or to examiners, including guidance and advice given to examiners about how they prepare for a viva (Pearce, 2005; Wellington, 2021). This can partly be a reflexive exercise in understanding and adapting to what may well be different points of view, those of supervisors and examiners. This can be a healthy practice in two senses: candidates can make efforts to think as examiners think, when writing the thesis as well as for viva preparation, but (as we often remark to good candidates) a candidate in a later career can be a supervisor and in turn become an examiner, so this role reversal can be future-oriented.

At a further meta-level, candidates could even join supervisors and examiners to check the sparse literature which, as a research theme in higher education, researches examining for vivas (Mullins & Kiley, 2002; Mežek & Swales, 2016; Dobson, 2018) or reviews oral exams in general (Jonghin, 2010). Also, consulting research articles which attempt a genre analysis of sections of doctoral theses might be helpful. This is a pointer to commonly identifiable issues and therefore to what problematic features examiners will likely probe in the viva. Thus, on the literature review chapter (Holbrook et al., 2007) and on thesis conclusion chapters (Trafford et al., 2014) research can assist supervisors and candidates not only for thesis writing but also to predict types of viva questions. Doctoral seminars can be arranged for groups of participants – both candidates and supervisors – to prepare and present material for discussion based on the above literature at all levels (viva books, handbooks, supervisor guidance, and the meta-levels of viva examining and researching doctoral processes). This might include uses of the present paper and the Appendix.

Sadly, many candidates apparently over-rely on the brief notes put online by individual universities regarding doctoral procedures. Surely those are starting points, rather than a final word. There is also the folklore of circulating oral comments relayed to candidates by their successful predecessors within a university or news among doctoral friendship circles (the immediate follow-up to ‘How was the viva?’ is always ‘What did they ask?’). Few details of real difficulties or failures circulate orally; there is a small minority of vivas which are too uncomfortable or traumatic to share details about, even with friends. Of further interest, because they embrace the emotional aspects, are the written personal accounts of successful doctoral research journeys and supervisor-candidate relationships (Salmon, 1992, Lee et al., 2013; Brian et al., 2019; Cornér et al., 2019). Sometimes, too, there is more direct word-of-mouth information and insight from

those supervisors who have been examiners themselves. Candidates can glean ideas of questions asked, but much depends on individuals.

In sum, to prepare, and to overcome such problems, participants need to recognize the viva as *a process* which concerns more than the written content in the thesis (Kelly, 2010). It is about ‘*doctorateness*’. This relates to the quality of the thesis, as a product, combined with scholarly research competence, as a process (Trafford & Leshem, 2008, 2009; Wellington, 2013; Bitzer, 2014; Poole, 2014, 2015; Burner et al., 2020). The key idea of doctorateness relates to the thesis as produced by an independent scholar with research competence, and to originality in conceptualization of particular aspects of the research and its contribution to knowledge or professional practice. Often, there is also the less written-about idea of the process as a personal journey of transformation. Viva questions, especially from more experienced examiners (Trafford & Leshem, 2002b) can centre around these conceptual processes.

VIVA PREPARATION AS A PROCESS OF USING QUESTIONS FOR THINKING AND LEARNING

Candidates need to reflect deeply on the fundamentals. Doctorateness includes high levels of scholarship and interpretation in demonstrating mastery of the subject, shown in competent ways of articulating research: this should show analytical breadth, related to methods of data analysis, and depth, related to the quality of a research contribution. Clearly, this kind of articulation takes time to develop. Early on, candidates need to give explanations (to different audiences) about basic answers to basic questions. Later explanations can be more specific, with detailed evidence and more complex rationales. These foundational questions should be posed at initial and intermediate stages of doctoral research. They are high on a candidate preparation list or agenda to inform supervision consultation sessions. They are at the forefront of an examiner’s initial reading of the theses.

The Foundational Questions

- 1) *What is this research for?*
- 2) *What is the purpose of the thesis?*
- 3) *What is the key argument in the thesis?*
- 4) *What has the research accomplished?*
- 5) *What can you do with the research outcomes?*
- 6) *What is the purpose of the viva?*

Well before a viva, candidates should answer such questions in a way that shows their commitment and confidence, and their expertise and enthusiasm (even if at times these seem waning or vanishing qualities). The aim is to answer these questions succinctly, with a frame of mind that shows the authority of a person who is spending considerable time working out answers.

For examiners, it does not seem useful to set up the viva as a gruelling question-answer-question-answer session. Candidates rarely do their best in such an interrogation. If the viva is a stressful marathon under intensely grilling conditions, answers become shorter, they are pitched lower both

vocally and academically; they become less assured; and are uttered with diminishing enthusiasm. The event becomes an endurance test or a test of survival.

As a principle, it is more productive to think of the viva as sharing scholarship in deeply informed discussion, a detailed conversation between experts about work represented in the thesis (by this stage the candidate should be worthy of consideration as an expert). This goes together with consideration of salient aspects of the wider field related to the thesis themes. In this view, a series of viva-type questions can, and should, be considered by the supervisor and candidate in both general and specific terms during the thesis writing process. Some can be discussed during planning and early stages. Hence, questions which will ultimately be put *to* a candidate in a viva, can be earlier developed *with* the candidate; they can become questions *for* guiding the research and *for* the candidate to construct their own questions.

Viva preparation is a process of thinking of how to answer likely questions, about arguments and counter-arguments, evidence and counter-evidence, challenges and defences concerning the issues raised by the thesis. The process can be practiced with a supervisor who gives feedback and encouragement. It can be engaged by a candidate alone with notes of questions and self-recordings of answers. When such preparation is based on a solid understanding of the nature of the viva, stress and anxiety can be diminished and managed. More specifically, the viva is the occasion explicitly designed for the candidate to show crystal clarity about the aims, methods, results, outcomes, constraints and difficulties of the thesis research. Essentially, considering all these issues carefully is an inherent part of good scholarship and research thinking. Naturally, this approach - to reflect on key questions and likely issues which are anticipated to be raised - can inform the thesis writing at any and all stages. The series of questions here about the doctoral viva are mainly designed for candidates, but some are aligned to supervisors and examiners. For candidates, it is important to have insight into how their supervisors are likely approach such questions as related to the candidate’s work (even if many have already been discussed in depth in supervision sessions). Candidates and supervisors need to remind themselves about what examiners ask themselves when they read the thesis. In developing doctorateness, the use of these questions is important, whether or not the examiners actually put these particular questions face-to-face to candidates in the viva session. Appreciating such questions in advance helps candidates enter the mindset of examiners, who are researchers: this is another kind of research training.

This paper therefore offers a detailed repertoire of questions (see the Appendix). These should frame the viva preparation process (on all sides). More interestingly, as advance organizers, the questions can frame the thesis writing. More importantly, they frame the doctoral researcher’s thinking. The viva timing is limited (commonly a viva lasts around two hours) so clearly only some of these questions can actually be asked in the viva. However, the questions give grounds for practice. Ultimately, the questions are about how to think: about research, about presentations, about arguments

and evidence in the field, and about communicating what new knowledge and insights have been found and how they can be considered in the wider world. A successful viva often discusses publications which potentially arise from the doctoral research. Of course, journal editors, reviewers of articles submitted for publication, and book publishers all have similar questions in mind.

APPROACHES TO THE VIVA

Internationally, it is important to understand the viva as a cultural practice (Crossoard, 2011) and how in different cultures there are different socio-cultural approaches to doctoral vivas. These are rarely considered in common guidelines (Smith, 2014; Murray, 2015; Phillips & Pugh, 2015). Candidates, examiners and supervisors may have different international backgrounds, academically, linguistically and culturally. Examiners may see themselves as combining several roles: they are gatekeepers or custodians to preserve standards, discussants to recognize and explore new research, celebrants to laud and reward achievement (Dalley et al., 2004; Carter, 2008; Lovat et al., 2015). First, international staff inevitably bring with them conceptions of doctoral processes derived mainly from the context in which they received their own doctoral training. These ideas can be at variance with conceptions which prevail within another institution, nationally and especially internationally. Training sessions for doctoral supervisors within an institution may tend to concentrate on procedures and regulations but often involve less consideration of good practices within the viva. Too often the viva is seen only as the last stage. Second, international students may bring similarly diverse ideas (perhaps less explicitly) about researching and examining in their contexts of experience, which can differ from those of supervisors and examiners. Some candidates are themselves already teachers in higher education. Third, for supervisors and examiners in internationalizing universities an understanding of variation within doctoral examining practices helps to broaden staff understanding of variations internationally and of possible alternatives within faculty development and supervisory training.

World-wide there are variations in the viva (Powell & Green, 2007; Mežek & Swales, 2016). In Australia, it was less common to have a viva, but universities are now moving towards the standard practice, which is to have one. Previously, candidates sometimes gave an oral presentation before they submitted their thesis (Kiley et al., 2018). In Korea, a panel of five examiners read the thesis and then decide if a viva is necessary. In New Zealand, universities which previously did not require a viva now do so (Lovat et al., 2015). However, in most systems globally, a viva is mandatory. For the viva in the UK, and in most countries, examiners normally submit separate written reports on the thesis before the viva, then they make another joint report after the viva about both the thesis and the viva performance. The final report can be more negative or more positive than preliminary reports, with explicit reasons given for any differences (this shows the importance of the viva performance). Generally, depending on the university, candidates only see the final report but this may be confidential.

There are differences concerning who is able to attend, apart from the candidate and examiners. The number of examiners varies: from just two with a chairperson in the UK, or a committee of three to five in many systems, up to a dissertation council of 20 people in Russia. In the UK and New Zealand, supervisors are commonly present, but often only by invitation. In some institutions in New Zealand, two 'supporters' may attend to welcome the candidate: otherwise they do not speak. In just a few universities in the UK, other doctoral students are invited to be present at the event, with the examiners' consent, but they cannot participate orally. Elsewhere in the UK, a viva is private, behind closed doors, so postgraduate students have no experience of a viva until their individual turn as a candidate comes. Sometimes, particularly in times and situations of a pandemic, one or perhaps all of the participants are online through video-conferencing. This means turn-taking is less spontaneous and likely this adds to the elements of formality – and internationally this may be across quite diverse time zones, even with only three or four participants.

On the contrary, elsewhere the viva is frequently a public affair: besides the panel of examiners, there is an audience of non-participating academics, students, invited families and friends. This is normal in the Netherlands, France, Belgium, Sweden, Finland, Spain, Portugal, Italy, Poland, Iran, Ghana, Brazil, and Japan, besides the USA and Canada. Sometimes, the audience can join in to ask questions. Often, there is a committee, or jury, of up to a dozen examiners from several universities, each of whom who ask specific questions. Normally, at least one examiner is from another university. Sometimes, several examiners must be from outside the country. Sometimes supervisors are part of the examining committee, for instance in Japan, Brazil, Iran, Finland and the Netherlands. Frequently in Europe all this is in English, and obviously this is the case in English-medium universities around the world, but sometimes the supervisor is expected to give a laudatory speech in a local language for the benefit of attending family members and visitors to help them celebrate the occasion. In places like the Netherlands and Belgium, the viva is a significant public event with a large audience in an auditorium: proceedings open with music with a procession of academics dressed in full traditional gowns, then there are several speeches, including the candidate's ten-minute presentation, followed by questions from a large committee. The candidate has one or two friends as reassuring supporters nearby: they can help locate references or find prepared information. After the committee's decision, made in a separate room but later announced to everyone present, there is a formal ceremony with more speeches from the supervisor and senior university officials, and the immediate signing and handing over of the doctoral degree certificate to the now-successful candidate. Elsewhere, successful candidates probably need to wait for the university's regular graduation ceremony before they have a doctoral certificate in their hands.

In some university systems, before the thesis submission, candidates need to have published a specified number of articles related to the thesis research, for instance in Finland,

Malaysia, Iran, Pakistan, India, China, and some American universities. In many systems, for instance in Norway, Sweden and the Netherlands, the whole thesis is routinely published and circulated publicly as a printed book or online even before the viva; this implies that it is treated as a finished work and has no need of revisions, although a list of errata can be brought to the viva. In cases where thesis work has been published, the range of viva topics includes the content of such publications. However, some premier universities are moving away from pre-submission publication, with the recognition that this can lead to premature or lower quality publication. In general, the thinking and advice below is based largely on practices in the UK and Europe, which have influenced those of many other countries around the world.

In any location, in most vivas the candidate is given some time to summarize the work orally, using relevant electronic mediation and illustrations for this presentation (Mežek & Swales, 2016). Commonly, this opening part of the viva does not last for more than 10 or 15 minutes, but it can be for 30 minutes in Singapore or 40 minutes in Ghana or Japan. In some places, this is a pre-viva lecture, maybe given on a separate occasion. In preparing a viva presentation, candidates should consider that the examiners have recently read the whole thesis, so this is hardly sharing news (unless a wider audience is present). However, it is *a performance*. It is the opportunity for candidates to show their enthusiasm and to share confidently the highlights of the results of a long-standing interest, to give professional contextual information, and to re-visit the major research outcomes. If the candidate simply reads pre-written notes aloud or just verbalizes the content of prepared slides this can impede a sharing of confidence and enthusiasm. The presentation needs to be face-to-face, communicating eye-to-eye with the audience. What matters is how the main ideas come across in oral communication.

Within any particular university, there are usually regulations and guidance notes about viva procedures. These are routinely given to examiners and are available to candidates. Normally, there is a chairperson for the viva, whose main role is to ensure compliance with regulations and that the procedures are smooth and fair; otherwise, the chairperson likely says very little except to give a brief introductory explanation and coordinate the conclusion for the viva.

Notwithstanding written guidelines, it is important to understand how there can be different approaches by individual examiners to the viva. The reasons for this include variations in academic disciplines or departmental practices, besides individual differences between the academic stance and personality of examiners. Supervisors should consider such factors when they select external examiners. At its worst (as we think), examiners can go through the thesis page by page with cross-checking the details of specific words, sentences and paragraphs. At its best (as we observe), the examiners ascertain the candidate's approach and understanding of the work through scholarly and research-based discussion. They themselves contribute interesting points and raise specific ideas, rather than simply asking questions. Often, examiners

highlight aspects which the writer may not have really considered before. This helps candidates considerably because the viva can explore ideas and wider issues that were not really developed in the written thesis. This second kind of viva can help the candidate improve the work, appreciate its value in a broader vision, and move it forwards towards a much better publication. These two kinds of vivas are points on a continuum with many viva events in between these kinds.

Candidates should remember that the examiners, reading the thesis carefully, consider some key questions. These inform 'doctorateness': a threshold concept which implicitly candidates must cross over (Trafford & Leshem, 2009; Burner et al., 2020). The questions inform the conduct of the viva (Mullins & Kiley, 2002, Carter, 2008). These questions include:

Key Questions Examiners Ask Themselves

- 1) *Is the research and the thesis substantially the work of the candidate?*
- 2) *Does the thesis acknowledge specific sources and contributions made by others?*
- 3) *How does the thesis contribute to relevant theories, approaches, methods, or practical applications?*
- 4) *Does the candidate have a deep understanding of the research project and key strands of related literature?*
- 5) *Why has the candidate done the research in the way it has been carried out?*
- 6) *What are the strengths and weaknesses of the thesis?*
- 7) *Is the thesis well organized and clearly presented?*
- 8) *Is the thesis a substantial piece of work, worthy of publication, wholly or in part?*

THE VIVA AS A DEFENCE

In their reports, examiners like to feel able to state that the candidate defended the thesis with confidence, with knowledge and appreciation of issues in the field; that the candidate was able to show critical and reflexive thinking and give a coherent rationale for the research approach; and was able to give informed and thoughtful responses to appropriate challenges and alternative lines of argument. They have to be able to say that a candidate has a reasonably advanced or appropriate knowledge of relevant theories, research methods and current issues in the field. This last point means that examiners can legitimately ask about things which are not actually written about in the thesis but which the writer as a competent researcher would be expected to know about within the wider context of the work.

A candidate should remember that the viva is not a routine matter, nor does it have a foregone conclusion; it is part of the examination of the written thesis. Different institutions or individual examiners may maintain different balances between the outcomes of examining the written thesis and performance in the oral viva. For some, the thesis matters most, although the viva is essential (Lovat et al., 2015). However, it is possible for a candidate to be required to have another viva if the examiners are not satisfied on some key points. On the other hand, a candidate's competent and well-informed

viva performance can persuade the examiners that the thesis requires fewer modifications than they had previously been considering. Thus, performance in the viva can have marked significance.

PREPARING FOR THE VIVA

Between the time of submitting the thesis and the date of the viva a candidate may have a number of weeks or even two or three months. This time scale depends upon the examiners' commitments and the logistics of arranging the viva date. During this time, good candidates and their supervisors will make a plan of action for viva preparation. Candidates will re-read their thesis critically and make notes of key points so that they are thoroughly familiar with the thesis content. It is a good idea to make a one-page summary which gives succinct answers to the *six foundational questions* and *eight key examiner questions* (listed above). They should go back to the literature and search out anything significant in the field which has been published since the literature review in the thesis was written. They can then bring details, plus their own comments based on reading the latest publications, into the viva discussion. This demonstrates conscientiousness, concern and care to be really up-to-date with emerging trends and developments. As they re-read the thesis, candidates should notice and correct any typing mistakes or errors in grammar and spelling, or any inadequate aspects of presentation that were somehow missed in earlier proof-reading of the thesis. They should amend such points in their own version of the thesis and make a note of all such corrections (with the page and line number), so that if the examiners ask for some things to be corrected (which is very common), the candidate can hand over the listed corrections as evidence that some points have already been amended.

For detailed preparation, candidates can re-read the thesis with *the questions below* and try to answer them clearly and critically. In these rehearsals, a candidate tries to be concise, keeps to the point, and gives evidence and examples where possible. It is important that candidates show awareness of research limitations and practical difficulties, and that they can say something about tackling them, or at least that they acknowledge difficult areas and specify what the difficulties are. All research has limitations: good researchers (like the examiners) can be explicit about this. They know that in practice there are usually lots of ups and downs in professional research and, obviously, in completing doctoral theses. They will be interested in how as a candidate you coped with these and what you learned from doing so. All participants should know that no thesis is perfect. It is a poor candidate who pretends that everything worked out perfectly without setbacks.

It is important that candidates are prepared to discuss the broad context in an informed way, beyond what is written in the thesis. Examiners want to know that the thesis writer is reasonably familiar with what is going on in the evolving academic or professional area. They need a candidate's clear explanations as assurance of a good detailed knowledge of key relevant areas (these should be discussed in the literature review, but obviously that review can't cover everything). If something unfamiliar or a particular unprepared issue comes

up in the viva, as a candidate never pretend that you know about it; if you don't know or cannot answer immediately, show your interest and ask the examiners to elaborate about what it is and how it may be relevant. Examiners should bring in wider issues and should bring up key work which they think is relevant and is not mentioned in the thesis: this helps candidates. Some examiners will raise a current concern in the field and expect you quickly to work out and share a comment on why it is relevant (after all, at this stage you are supposed to be an expert on the thesis topic).

ANSWERING QUESTIONS

There are several linguistic or culturally-oriented hazards for candidates when dealing with viva questions. These difficulties can apply to anyone but they may arise particularly for those using English as a second or other language (Carter, 2012; an otherwise helpful guide for supervisors (Paltridge & Starfield, 2007) regarding second language issues for doctoral candidates does not consider the viva). One difficulty is that the candidate simply hears a couple of key words in a question, especially in longer, more complex questions: the candidate responds to these particular words by giving rehearsed replies associated with those words. But this trigger-response may not answer the actual question which was asked. The examiners may not realize what has happened and may think the candidate has dodged the question or cannot give an appropriate response (good examiners will patiently rephrase the question and help the candidate to focus on the point in hand). If a candidate is unsure about such an answer, a brief check is possible, 'I'm not sure if I answered that question as well as I would like to: would you like me to say more?' or simply, 'Have I given a reasonable answer?' This gives examiners the cue to re-focus on what they are asking.

A second hazard is associated with discourse patterns. Internationally, examiners should be aware that in different languages and cultures there are different ways to answer questions. For example, answers may be direct or indirect, or in another style answers may be preceded by contextual information and background before coming to the main point. Of course, such ways of answering can be used in English, or in any language, but crucially in a viva the examiners expect a main point to be made more immediately as a direct answer without many preliminaries. The problem, for examiners, is that they need to listen carefully to see where the main point is in the discourse and what it means, especially if they are less accustomed to different cultural styles of communication. Often, such patterns are reinforced on formal occasions of speaking (like a viva) in which the interactants are treated with respect, particularly if they have high status and expertise (like examiners). Candidates who treat the examiners with great deference may favour indirect, brief answers and show great unwillingness to differ with an examiner's statement (though this is warranted, or expected, at times). Possible difficulties of this sort are more likely to arise when participants come from different language and cultural backgrounds, as happens frequently in international contexts in universities, including in vivas. Examiners should

be sensitive to this possibility, but appropriate socio-cultural awareness cannot be guaranteed among all individuals. Two strategies for candidates can be useful. One is that, in talking beforehand to supervisors and peers, candidates practice giving short to-the-point replies and later longer answers in both of which the main point emerges clearly. Another strategy is for candidates to practice packaging their major answers, making sure they give verbal signposts: 'First, I'd like to share some information about the context and then I'll come to the main point....'; 'I'd like to make three points here and I think the third one is the most important one....'; or 'I can't really answer directly without first mentioning that....'

As a candidate, it is vital during that the viva that you should be fully alert to what the examiners are really asking (see the Appendix for examples). If you are unsure of what a question means or don't see the point behind it, ask the examiners for clarification or request them to elaborate the question. Many candidates find that it is useful to have a notebook open to make notes on any examiners' advice or suggestions, for example about further research. If a question is really challenging (as some should be) or completely unexpected (as some may be), you can say, 'That's an interesting question, please give me a moment to think about it' and you can make a brief note before answering. This is normal: it gives you extra thinking time (especially if you are working in a second or other language) and it is a lot better than rushing to give an answer with less thought.

If examiners do not seem to have understood what you have said, try to re-phrase the point in a simple way. If they seem to have the wrong impression of something important about your research, try to pin down what they understand (you can ask them) so that you can clarify it and explain what you have written and what you think now. It may be helpful to draw a diagram or a quick visual representation to clarify some issues, for example, about theories, models or applications.

If the examiners criticize an aspect of the thesis, as a candidate (or supervisor) you do not take this personally. It is the role of examiners to evaluate: no thesis is perfect, and when they give critical comments, or express reservations, they are doing their job. The fact that they may have some apparently negative reactions on some points does not necessarily imply that they have evaluated the whole thesis in this way. In any case, they await your comments towards such critical views of your work. If they present a critique which seems to you to be unfair or wrongly aligned, keep calm and discuss it rationally. In your defence, you have the opportunity to give your reasons and you should support them with evidence and examples. If criticisms are substantially correct in such an evaluation, do recognize the value of what they are saying. This can help you to develop your understanding and to improve the research. You can acknowledge a weakness of features of the thesis, show how you recognize their point, and speculate on how the weakness might be overcome. This is an important consideration because, internationally, and in some cultures of learning, a candidate may resist openly admitting any fault or weakness since this seems to imply failure and, of course, the candidate is desperately trying to

avoid perceptions of failure. This is culturally understandable in other contexts but is not at all appropriate in a doctoral viva. This stance of recognition of justified criticism gets you academic credit, whereas it is a weakness not to recognize the weakness (and examiners will surely ask you to add something in writing as part of a correction process).

QUESTIONS IN THE VIVA

Before the viva the examiners read the thesis independently. Then they confer and exchange preliminary reports which they have made on the basis of reading the thesis. In these reports they have probably already identified key areas for questions, elaborations and discussion. Sometimes they make an agenda or sequence of topics. Sometimes they decide in advance who will lead the viva discussion about which aspects. Sometimes they decide to proceed section by section in thesis chapter order, or, more interestingly, by topic or theme. Many questions are predictable, as set out below.

These are generic types of lines of enquiry which we expect examiners to ask about. We have observed these as supervisors and as examiners we have used many similar questions ourselves. Other questions – and realistically this means many questions on most topics – will inevitably be *specific to a thesis*, and its particular content and themes. Nevertheless, if you go carefully through these questions in relation to your thesis, this will surely help your viva preparation in practical ways. Practising through these questions will raise your level of confidence. Try to feel like an expert on your own area of study, a researcher who is able to share overall ideas clearly, a person who is enthusiastic to share detailed comments.

There are six big questions (see the foundational questions above) to which as a candidate you should be able to give clear, concise and informed answers, not only to examiners but to research colleagues and, indeed, to the general public:

Six Key Questions for Candidates from Examiners, and Supervisors

- 1) *What questions are you asking?*
- 2) *Why are these questions worthwhile?*
- 3) *What methods will you use to answer these questions?*
- 4) *Why are these methods worthwhile?*
- 5) *What answers have you found?*
- 6) *Why are these answers worthwhile?*

Candidates can practice answers to these questions in role play with a supervisor or with peers. A useful idea is to give one-minute answers to each of these, while you imagine you are talking to non-specialists. More challenging, try to give one-sentence answers as if you are explaining to young people starting out in the field. Some universities now have annual post-graduate competitions ('the three-minute thesis') in which candidates have just three minutes to talk about their thesis projects to a general academic audience from any department. Candidates can gain further experience through conference presentations, perhaps with a supervisor, and these can be organized around these questions.

To answer these key questions, the examiners themselves are unlikely simply to read through the thesis page by page. Generally, they will read the abstract carefully first (which was probably written last of all) to get an overview, followed by the introduction (to see the context and main direction), then they locate the research questions which should normally appear near the end of the literature review (as justified by the frequently-presented idea of filling an identified gap in the literature), and then they read the conclusions (to see where the research has arrived), and the list of references (to see the scope of literature used) (Mullins & Kiley, 2002). They will make notes of ideas, expected interesting themes and likely lines of inquiry, and possible strengths and weaknesses, before reading more slowly, now chapter by chapter, already with questions in their mind, knowing what they are looking for.

For the Viva Itself

- Wear smart professional clothing
- Bring your copy of the thesis (possibly annotated or with specific pages marked)
- Bring a notepad and pen or an electronic device to take notes
- Bring examples of interview transcripts and data analyses
- Have a good breakfast to keep your blood sugar levels and energy high
- Bring in a printed list of any errors, corrections or additions that you recently made before the viva.

VIVA OUTCOMES

There are a range of possible viva outcomes. These categories may vary from one university to another. In many European countries there is a tacit understanding that if a candidate has reached a viva stage the doctorate will be granted. Rarely is the approval indicated to the candidate right at the beginning. More commonly, the candidate is asked to withdraw for some minutes at the end while the examiners confer to agree about the outcome; the candidate is then invited back in and the examiners give feedback and declare the outcome. The length of this discussion time is not necessarily related to the level of the outcome, so a candidate should not worry if this waiting seems a long time.

In the UK and elsewhere, the thesis may 1) be accepted as it stands; 2) be accepted provided minor corrections and small changes are made and approved; 3) require minor modifications, revisions or additions usually within three months; 4) require major modifications, perhaps within six months or a year, to one or more chapters; 5) be failed but deemed worth a masters' degree; it is considered that further revisions are unlikely to improve it sufficiently to doctoral standard; 6) be failed and not even worth a masters' degree. In our experience as supervisors and examiners, we have seen occasions when all but the last of these categories were considered in serious discussion. The final examiners' report will give clear reasons for assessment within a selected category. The second one is a very common outcome; the last

two seem extremely rare; after all, in all systems a thesis should be of a high standard before it is submitted.

For any changes required, the examiners are normally specific about exactly what needs to be done. A written version of this comes later, but required corrections are normally indicated and explained at the end of a viva. Corrections may include some re-writing or re-thinking. It is very important that the candidate (with a supervisor's help) understands precisely what these changes are, and why they are considered necessary. If you need to make corrections, don't worry, this is not a failure: just do precisely what examiners ask. You may feel shocked from the viva or just tired of the text; think of yourself as a professional editor reading the information independently and revising and checking. This frame of mind is part of research writing but it is easy to forget this after the viva. With a positive attitude, such changes can be welcomed: they add accuracy and quality to the thesis. They may well help you to improve aspects for publication. Make sure that when you are making any required changes, you compile a list of all revisions completed (item by item, with line and page numbers), so that later you can present the revised version with an accompanying list of all revisions, amendments or additions. The examiners can then check quickly that these have been done satisfactorily and then the thesis is recommended to be accepted.

CONCLUSION

We have suggested the viva questions given here are *for* candidates; this is important at any stage and certainly thinking about such questions should not be merely just before the viva. The questions are *with* candidates, jointly with supervisors spread over time and maybe with groups of peers. In the third stage, the questions can be *to* candidates in practice sessions and surely in the viva itself. Candidates will probably have a mock viva with a supervisor or two, perhaps with other candidates. The questions given here will be helpful as a framework for such practice sessions and rehearsals. As a candidate, you can highlight which questions you would really like to be asked (because you are confident about what you have to say). However, give special consideration to those questions which you would rather not be asked at all (but for which you definitely need to prepare). Remember, examiners themselves have these questions or similar ones in mind, adapted to the topic, themes and contents of the specific thesis. In your preparation, try to enter the examiners' mindset, to think as the examiners are likely to think. A significant reminder, as a candidate, is for you to adapt some of the above questions to your own topic, to specific themes and ideas in your research. Make a file of anticipated questions. If you haven't looked already, now read carefully through the Appendix: these questions are *for* you. Create your own questions: research, it is good to remember, is all about asking questions. When the thesis is finished it does not mean all questions are exhausted. Good questions always lead to further questioning. The effort, action and process of questioning is the beginning, but it is also the middle and the end. Questioning, asking in the right way, is half of knowledge. Arrive at the viva with your own questions – they are

with you. You have revised thoughtful answers to these over a good period of time – given this preparation examiners' questions are unlikely to be very different.

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APPENDIX

Generic Doctoral Viva Questions

The authors have supervised and examined well over 100 successful doctoral theses in eight countries, many with international candidates beyond those countries. The following list of 60 questions presents likely generic areas of questioning and discussion in doctoral vivas. This list has several purposes. First, the questions are useful for candidates in annual reviews and assessments of doctoral progress as well as for viva preparation *for* and *with* candidates; the questions can be put *to* candidates by supervisors or peers, and therefore can be used in groups or for self-preparation working alone. Second, the list is designed as a resource to show possibilities and choices. Given these examples, candidates can be prompted to compose their own questions related to the details of their specific work. In reality, because of time constraints, only one or two questions from each category are feasible. Importantly, these apparently general questions are commonly followed up with more focussed questions on the same theme. Follow-up questions are related to the specific thesis, sometimes in sustained exchanges of dialogue. Third, we think these general questions need careful consideration from the linguistic point of view of pragmatics: What in the intention behind a question? What kind of answer do the examiners hope for or expect? This consideration may not be obvious from the question itself, especially to someone who might be nervous or who may feel daunted. Sometimes candidates give apparently vague, hesitant or uncertain answers because they haven't really understood what is behind some questions. With this in mind, and to help viva practice sessions, we have given, after the questions, words in brackets to indicate the *kind* of answer, the *scope* and *focus*, that examiners may well expect in the answers. These bracketed ideas therefore show something about ways of thinking and why the question is asked as well as what sort of answer is considered suitable.

Opening questions as warm-ups: they can be more probing than they may seem

1. *What led you to this topic?*
[In a few sentences describe your background, the context, maybe share a relevant story of your personal involvement]
2. *How does this topic relate to your professional work?*
[Don't just mention career progression; show connections to practical concerns, problems, issues and developments within your professional work or life interests]
3. *Why did you choose to investigate this aspect?*
[Talk about your rationale, personal motivation and interest; explain why this particular aspect rather than others is important now]
4. *Why do you think this is an important issue?*
[Justify the significance of the research theme, academically, socially, culturally, internationally, etc. and in professional practice or daily life]
5. *Why is this worth investigating?*
[Explain in basic terms why this work is important in research, development, change, professional contexts, sustainability, etc. and how it is worthwhile academically and to society; indicate any potential benefits]
6. *Can you tell us more about the context of the research and why you think your work is important?*
[Relate the general and specific context to an important research gap which is partly filled by your work]
7. *What is your original contribution to our knowledge, understanding or practice in this field?*
[Give an explicit but concise statement of the contribution, explain in what ways it is new, or how it adopts a different perspective, and be clear about why it is worthwhile]

Conceptualization of the research process: a key area in which to show thoughtful understanding

8. *How did you arrive at your research questions?*
[Give details of the process of finding, focussing and refining the questions; show how they changed in development; if there are several main ones or sub-questions clarify how they relate together]
9. *What are the theories and theoretical components behind your work?*
[Be explicit about naming and commenting on particular theories; include relevant terms, labels, and be explicit about the relationships between theoretical elements]
10. *Can you describe and justify the main elements in your framework?*
[Demonstrate clearly what these main elements are, how they relate together, and why they are important and use-

- ful for your study: try to share a diagram, chart or other visual representation]
11. *How did you decide what variables and features to include in the investigation?*
[The question implies that there are many relevant variables and that you should give reasons for those particular ones you selected; describe the process of identifying those used, justify their inclusion, comment on those set aside]
 12. *How did the main concepts involved assist you to visualize and explain what you have investigated?*
[Describe and explain the uses of any conceptual models, charts, diagrams or other key illustration; there may be several key terms or central ideas behind your work to highlight]
 13. *What are the most significant current directions of the relevant literature?*
[Don't try to summarize the literature review here: this is a question about what is happening in your general field; identify and briefly comment on several outstanding directions or trends, and show their importance, interest and relevance for your research]
 14. *What was the basis for your choice of the key work in the literature which you have discussed?*
[Any literature review is selective: give reasons and mention some criteria to show why the key work you chose to discuss is really important for the themes of your work, explain how it influences or frames your work, show how some other work you know about is less relevant]
 15. *How do you evaluate the main trends in the literature in relation to the focus of the thesis?*
[Demonstrate that you know something about established and developing trends, discuss how some trends can be prioritized for their relevance to your work, and explain how other trends are less relevant to your focus]
Research design: to show awareness of issues how key decisions were made.
 16. *What alternative approaches to researching this topic did you consider and why haven't you used them?*
[Show knowledge of other approaches or a range of methods, and give reasons why they were not central to your work; justify your own choice]
 17. *How would you explain your research approach to a non-specialist?*
[Give an accessible brief explanation in everyday language, explain what the research is about and why it is important; think of this as one-minute explanation in a media interview]
 18. *How did you arrive at your research design?*
[Outline the main steps of development, justify the design chosen; show familiarity with relevant terms; be prepared to mention advantages and disadvantages related to the design for your research focus and context]
 19. *How would you defend your methodology to a critic?*
[Show you are aware of critiques and possible weak aspects, but give clear valid reasons and counter-arguments for using the methods you chose]
 20. *What is the precise link between the theoretical framework and your methodology?*
[Show clearly how key concepts relate to the methods, be explicit to justify the link and give a theoretical context for this particular methodology; show you have read and understood relevant literature about methodology and give precedents for uses of frameworks which are related to your methods]
 21. *How did you get your data and why is your research design the most appropriate way to access that data?*
[Give practical details of data collection, show how difficulties were considered, relate the data to the research design and be prepared to discuss alternatives in data collection; show that you know about different research designs and why yours is more relevant here]
Research methodology and methods: how and why procedures were used and how problems were solved
 22. *Can you explain your research methodology to us?*
[Don't just name it and describe it; give clear justified reasons for choosing it and motivated practical details of how you used it; show awareness of practical difficulties and limitations; show you know about alternatives; show familiarity with some research methods literature]
 23. *What choices of methods did you consider and why did you choose those you have used?*
[Go briefly through several methods, be prepared to talk about (dis)advantages and feasibility, give both theoretical and practical justifications for your choice; in mixed methods, be sure to show the relationships and realistic data connections between the methods you combined]
 24. *What do you gain by using your methods? What do you lose?*
[There are always advantages and disadvantages with every method: state some major advantages, but also be clear about limitations and difficulties, and evaluate the clear benefits for your project]
 25. *Why did you decide to include a (specific) strand in your methodology?*
[The question implies there might be an apparent lack of real connection between strands; focus on whichever strand is asked about and justify why you included it; state what the strand adds and why this is useful; relate it to its role and relationship with other well-recognized strands in your research]
 26. *Comment on the ethical issues involved.*
[Don't simply comment on obtaining routine ethical approval from an institution or from participants: show knowledge of relevant ethical principles and procedures; show reflective thinking about how participants are involved as people beyond simply complying with research regulations; how does your research touch people's lives in any real ethical dilemmas?]
 27. *Explain how you used the research instruments or methods in your context?*
[Be careful: the question implies there was or should have been some adaptation, translation or concession to local circumstances, so talk about relevant aspects; if

- there were difficulties or barriers, say what these were and how you coped with them]
28. *How exactly did you categorize the data?*
[Give step-by-step details of the procedures you used for classification, with clear examples and mention some difficult or less clear cases and how you handled these]
 29. *How did you handle ambiguous data?*
[Linguistic, educational, and social science data always have some less clear-cut or ambiguous data; have some examples to hand so that you can say why they are ambiguous or difficult to classify; say how you made decisions about these examples; talk about your decisions with less clear cases and overlapping data, and about data that can be classified in multiple ways]
 30. *Comment on the practical difficulties you faced and how you tackled any methodological problems that arose?*
[There are always some practical problems in research, often technical, sometimes with people or circumstances involved and changing situations; perhaps you haven't written about these but be prepared to talk honestly about some difficult issues and how you faced them]
 31. *Tell us about your participants, sampling, interviews ... how do they represent wider contexts?*
Give a realistic picture of the people, places, times, circumstances, procedures and feasibility processes of gathering data from real participants; comment on how they may 'represent' some wider contexts, with details, and maybe show some of the limits of this 'representation']
 32. *How did you select the participants?*
[Give a name to the selection process and be honest about the feasibility getting suitable participants involved; why would participants be interested in co-operating? What do they achieve through their participation? If they were volunteers, or selected for you, how do you account for those who didn't participate? Are there any ethical implications?]
 33. *Comment on the sampling and representation of participants*
[Explain how data samples were obtained and how 'representation' was considered; this is not really just a question of statistical representation; be open to discuss practical feasibility and any difficulties of collaboration, getting access and obtaining necessary permission or approval]
 34. *What are the (problematic aspects of) relationships between you as a researcher/person and the participants as people?*
[This is tricky because the question invites you to comment on *you* as a researcher and as a person who is being (or trying to be) detached (*objective?*) but also empathetic and understanding (*subjective?*) in how you relate to the participants as people (in current social science attitudes, they are not just numbers or codes and categories, not just 'subjects' nor 'objects'): these are recognized dilemmas and tensions of researching with real people which are noticeable in any face-to-face research; try to think of your stance about these tensions beforehand]
 35. *What are the limitations and practical constraints in your research?*
[Be clear and explicit; no research is perfect, so don't hide difficulties or downplay limitations; importantly, this question is surely not just about limited numbers or sampling, or the extent and time-span of your research; think of any theoretical limitations or about ways of analysis and interpreting data; try to give practical examples of what was or wasn't feasible]
Outcomes, Conclusions and Applications: why results are worthwhile, useful, with insights and applications
 36. *What are the main conclusions and why do you think they are significant and interesting?*
[Don't just summarize what you've written in the final chapter: give a few major points and explain explicitly why they are worthwhile within a big picture of the research; try to relate this big picture to the wider field]
 37. *How did you move from the results to the conclusion and outcomes as models?*
[Make sure your conclusions are not just summaries of results but are more general outcomes or are emerging points of arrival beyond lists of results; say something about how the conclusions were drawn and briefly explain any model as an outcome]
 38. *How do the outcomes relate to the theoretical framework?*
[Make clear comments about the conceptualizations and specific connections with at least some identified parts of relevant theories or whatever framework was drawn up in the literature review; some connections are surely obvious, but this point is sometimes missed in thesis writing; some relations may be indirect within a range of outcomes]
 39. *What exactly are the applications of your research? To whom? Where? How do you know?*
[Avoid vagueness here; try to give realistic specific examples which you can be reasonably confident about; you can refer to your experience and contexts you know well; be explicit if you are making speculative assumptions about relevance of applications]
 40. *How generalizable are the findings? To which other contexts do you think your work can be related?*
[This can be tricky, especially with case studies and research in local contexts: examiners probably have other contexts in mind – you need some ready examples beyond any you may have mentioned in writing; are the generalizations best expressed as information, knowledge, relevant insights or applications?]
 41. *What is the role of interpretation in getting the results and drawing the conclusions?*
[Facts and figures don't speak for themselves – frames of interpretation and the personal-academic stance of the interpreter are crucial; try to be reflective here to justify your viewpoint with a rationale but show you've considered alternatives or conceptualizations]
 42. *What alternative interpretations or other conclusions are possible from your results?*
[Don't just say how you interpreted the research; talk about different possible lines of interpretation, whether

you've written about them or not; discuss the handling of any unexpected results, discuss counter-cases, and tensions between different interpretations; try to be clear about your interpretive stance]

43. *How do your conclusions relate to the conceptual framework?*

[Surprisingly, these links are not always made obvious in thesis conclusions: make the connections clear and explicit by explaining your ideas of the links; you don't need to explain everything but do give good examples]

44. *How do your conclusions relate to the field? How far are they generalizable?*

[Different conclusions may have different features of generalizability in different ways; the 'how far' phrase in this question implies this is often not clear cut and is a matter of degree or judgement – an idea of a scale, or factors of variability, may frame your answer; make sure you give more than a single simple answer]

45. *How can your conclusions be applied with variations in other contexts?*

[Be prepared to outline what adaptations or specific changes might be needed in several examples of different contexts; give some circumstances where the conclusions seem applicable but also some contrasting situations where this is less likely]

Your contribution and wider issues: how the work fits into the bigger picture of life.

46. *What is your contribution to current concerns in the field?*

[Be explicit about the significance of original elements in your work – you have to be able to talk about this; specify the worthwhileness of the new knowledge which you think has been added by the thesis, or any salient new evidence or research replication in a completely different context, or revisions of theory or processes, any innovations in methods, plus outstanding insights for practice and applications]

47. *What is your stance towards your field: is it moving in the right direction?*

[This is probably an unexpected question: show how you take a personal position with an evaluation of one or two mainstream trends; give an informed opinion about what is more – or less - interesting about where major research trends seem to be heading; be prepared to think about larger global issues and how they might link to your field]

48. *'Viva voce' means 'living voice': how do you describe your voice in the research community and in society?*

[Think about what you are really trying to say in the thesis overall and why this is worth saying; comment on your personal stance, communicative strengths, research philosophy or social commitment; does your 'voice' represent a professional, social or cultural group or community, and if so, how?]

49. *How do your conclusions relate to a particular theory or current development?*

[Think about the wider picture of your conclusions in terms of current trends, changes, or recently developing

situations; show how at least some of your conclusions fit in reasonably with a theory or perhaps they represent a challenge to the theory – be explicit to say why or how]

50. *Why do you think your work is worthwhile? In what ways? To whom?*

[This is a fundamental question so consider why or how your work relates to research directions and to researchers or policy makers, to the needs of professionals and practitioners, and to the general public in everyday living; consider how your work represents new information, incremental knowledge, or insights, likely applications, different thinking, or is a source of curiosity and inspiration for a new set of questions]

51. *Which aspects of the thesis do you think can be published: where and why?*

[By definition of a doctorate in most universities, some parts should be publishable, so of course you should think about this; identify some specific strands rather than whole chapters, mention a couple of publication outlets and especially say why you think these strands are worthwhile, interesting, new, insightful or applicable as 'contributions to knowledge']

52. *Which parts of the thesis are you least satisfied with? Why? How would you change them?*

[Don't be afraid to mention weak parts or features which are incomplete – your work is not perfect and if you pretend it is, this is itself a weak point; each thesis has weaker parts somewhere and less complete areas – be honest when you give reasons for your self-evaluation of some weaker features and try to mention how these features might be improved]

53. *What areas of future research arise from your work?*

[Don't just talk about getting further data in new contexts; show thoughtful ideas about directions for further conceptual exploration or potentially realistic applications]

54. *What new questions follow on from your results and conclusions?*

[Remember that researched answers generate new questions, so your 'answers' as results and conclusions should imply new questions; share your own real questions which have arisen, or occur to you now, including any which go beyond the scope of the thesis]

55. *What have you learnt (personally, professionally, as a researcher) from doing this research?*

[This is the opportunity to share a reflective self-evaluation of the research path; what have you learned in terms of personal and professional development from the research journey?]

56. *What are your plans related to this topic after you have gained the doctorate? Any further explorations?*

[Mention any desirable steps to take the research further; comment on anything new which you are now curious to investigate; maybe mention plans for publication or research dissemination]

57. *How will the doctoral research help you with your professional work and career?*

[Go beyond obvious aspects like getting a job or promotion and a higher salary; talk about any clear applications

to your work and extended professional development; think about doctoral processes and developing ways of thinking for lifelong education]

Consult the experts: near the end of the viva, this is the opportunity to get advice and suggestions from the examiners.

58. *Is there any aspect of the thesis or the research topic that you would like to discuss which the examiners have not raised?*

[This is a chance to share a strong point which you prepared for which there was no previous opportunity to talk about]

59. *Do you have any questions you would like to ask the examiners?*

[Do not ask if you've passed: if you have one, ask a genuine question which draws on examiners' expertise and experience; you might ask about how they see this study within the spheres of their known expertise]

60. *Is there any area of advice that you would like to get from the examiners?*

[Ask about improving the research; about how to increase the impact of the work; inquire about publication possibilities]