

## Getting Started with Doing Doctoral Research

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### Preface

Without exception, doing a research-based doctorate, particularly a PhD, means embarking on a long-haul learning journey. It should not be undertaken lightly, which means that time and effort should be spent conceiving and planning for the journey from the outset. The details of plans will invariably change as you go deeper into the learning process of doing practical doctoral research, but there is no denying the importance of starting out with a clear road-map giving direction and milestones.



These notes are designed to help you think about your choice of research topic and to organise the process in a systematic way. As the authors of these notes, we offer the benefits of long experience of higher degree research supervision (from 1980), combined with the experiential learning of a PhD recently completed, achieved with flying colours and a medal for scholarship (2017).

There is much that may be written about doing a doctorate, notably the emotional roller-coaster ride it can become, as well as the demands on stamina like a long-distance marathon, not to mention the constant worry about producing new knowledge that others critically appraise and recognise. We have set all that aside and concentrated instead on a building-block approach, that is, the idea that many kinds of doctoral research comprise five main chapters: Introduction, Literature Review, Methodology, Data-Set Description, and Analysis, Discussion, and Conclusion. It is a basic approach, comprising “framing” chapters (1-3), followed by an analysis of and an argument about the new knowledge produced by the research. Your thesis may have more chapters or indeed it may comprise published research-based papers. The five-chapter model is only a guide to how the research can be organised and presented.

Ultimately, the doctoral research is independently examined by academics in the knowledge discipline field and they agree that it makes a valuable contribution. It is not enough to produce new information or even to have sharp insights. As it is a doctorate in philosophy it is important to extend the boundaries of received knowledge by contributing to theory-building.

We believe that our five-chapter model provides a solid foundation for starting off on the learning journey. As this paper is designed to get you started, we pay attention to the first three framing chapters.

### ***Making a Research Proposal***

In a nutshell, making a research proposal is a serious business. The entire thinking that has been poured into the research proposal is exposed to critical assessment by others. If they don't like your proposal, for whatever reason, you are bound to hear about it and be asked to explain, justify, and defend what you have done. You may be required to



## 1. Introduction

Chapter 1 (Introduction) of a PhD thesis is a general overview of the research. It explains why you initiated the research, what you aimed to study, how you collected data and what findings you discovered. Chapter 1 is a roadmap of your research, and it indicates its structure. In many cases, the final draft of Chapter 1 is completed when the whole PhD thesis is finished, as it represents a very condensed summary of the whole work. Below we explain the main parts of Chapter 1.



1. *Choosing a PhD topic.* You should consider two options in approaching the research topic. You can draw upon your own inside knowledge and working experience of an industry to identify a researchable topic in which you have a deep interest. Or you may trawl through the extant knowledge on a topic that interests you to find a knowledge gap, that is, an unexplored aspect that you think you can address and fill with new knowledge. Both approaches should be focused on producing new knowledge, not on reworking of what is already known. Think about this carefully, as it becomes of crucial importance when you eventually submit your thesis (or research papers as a portfolio).
2. *Problem statement or research rationale.* Explain why the research is worthwhile. In other words, explain what you want to know and convert your thinking into a problem statement or gap of knowledge investigation.
3. *Contextual background.* An important part of the introduction should be an explanation of the contextual background. This might be more than nice to know, as readers of your published research need to understand where you are coming from with some relevant factual and descriptive background that sets your research into the macro/meso/micro environment. A clear explanation of what is going on (WIGO) in the area of your interest should support and justify your own research focus. In other words, please explain more about the contextual background to your topic.
4. *The main research questions that arise or flow from the problem statement or gap of knowledge definition.* Explain each question as either being drawn from previous research or your own thinking. Both are okay.

5. *Overview of the literature.* It is useful briefly to indicate the concepts, models, and theories (refer to the description in Chapter 2 for more details) you have called upon to give a big picture of your research topic and an indication of what is already known about the topic from the literature. You need to be clear what added value you can contribute to received understanding on your topic. If the main research questions are drawn from previous studies, especially those using concepts, models, and theories to create a big picture general interpretation, you need to identify and briefly to explain the connections with your research. You can go into greater detail in Chapter 2 (Literature Review). It is unlikely that your research questions have emerged solely from your own thinking, so be prepared to explain where your ideas come from.



6. *Research methodology.* Also in the introduction, it is useful briefly to underline the highlights of the research methodology. There are two main paradigms: qualitative research, which often means the case study method, and interviews with key people, and the large survey and the rules associated with positivist research. So, briefly describe the research methodology you use, but avoid going into detail. That is for Chapter 3.
7. *Research outcomes.* You might like to follow up the main research questions with what you regard as the objectives and ideal outcomes from your knowledge contribution. This gives you a chance to explain your own vision for improvement and change management and the knowledge contribution your research makes.
8. *Research paper structure.* Outline the rest of the thesis structure and content in the five-chapter model and finally remind the reader about the point and purpose of the research. Remember to signpost your way through your writing as much as you can, as it also helps you to keep on track.

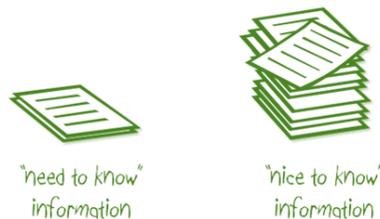
## 2. Literature Review

### **Writing the review of the literature**

This is an important chapter, as it is expected that you can relate your research topic to other studies like yours and generally locate it with what is often called the contextual background and conceptual literature.

*Conceptual literature or need-to-know.* As a rough guide, research-based studies like your own offer the possibility of comparing and contrasting with what is already known from published sources. This is the need to know literature, and you must search hard to make sure you have not missed important studies.

Ideally, your research adds new knowledge. You don't want to find that it is already known. Typically, the review of literature and how you devise a discourse between what you want to know and the already known is closely examined. You must convince examiners you are capable of producing new knowledge and advancing comprehension of the research topic.



*Contextual background or nice-to-know.* The second kind of literature is often called nice to know, as its purpose is usually to colour in the background. In writing the literature review, you should start with these nice to know studies. This should include descriptive contextual background. In writing the story of your topic, you simply make use of what is already written and acknowledge the sources upon which you have drawn. You can mention broad concepts (including models and theories) that provide a big picture explanation of WIGO and how ideas should be interpreted and understood. By doing this, you are not challenging current understanding, but simply using these ideas to throw more light on your own research focus.

What should be clear is that the review of literature serves more than one purpose, but above all it is an extended and imaginary conversation between you and all the others who have done work in and around your research topic. In a way, it is like thanking them for helping you construct your own research and in particular sharing your findings and interpretations with the select few who have actually done research comparable to yours.

### **Some main definitions**

- *Concepts.* Start with simple English language meanings. For instance, concept refers to a general idea connected to a frequently used term, such as *downstream product development* and related ideas like *continuous quality improvement*, *organisational effectiveness*, and many other expressions used in business and government. These

terms help to describe WIGO and to generalise your understanding. These terms can either have very specific meanings (particular product development) or can be very open and flexible with multiple meanings, such as *love*.

- *Models*. Going further, a model is understood as a set of relationships that have a common connection and represent an abstract idea that is also grounded in reality. A prime example would be our understanding of a bureaucracy that describes organisational behaviour as a regular pattern. Models are often ideal types reflecting reality, but in a stylised form. They help us to see something as a whole instead of unconnected parts.



- *A theory* is an extension of a model and it provides a big picture explanation of WIGO. In an empirical investigation, a theory should be a set of hypotheses or propositions that seek to explain reality through systematic investigation. We prefer the term theory-building, as it is difficult to claim that an explanation is complete and beyond further analysis.



- If you had a second chance to repeat the research, what would you do differently?

2. *Explain, justify, and defend (EJD) your research methodology.*

- *Positivist research.* The second part is more demanding. For those making a scientific inquiry, this entails explaining the ground rules and philosophy of the positivist-empiricist tradition, usually without much need to justify and defend the methodology.
- *Qualitative-interpretive approach.* For those engaging with the subjective perceptions, lived experiences, felt needs, and personal interpretations of what they understand by WIGO, called the interpretive-constructivist tradition, it is often necessary to undertake more EJD work. It is just how it is.

You should imagine that you have to EJD your research methodology to a science-trained mind familiar with the rules of positivism-empiricism and rather sceptical about other methods, which are regarded as soft and too subjective to be treated as serious knowledge. Your task is to persuade this imagined sceptic that the data you have collected is worthwhile. What should you do? First, you need to EJD the case-study method. There are plenty of books on the subject. Second, you must work hard on getting to grips with the thinking behind what is often termed the qualitative-interpretive approach.

3. *Describe the limitations of your research methods.* By doing this, you should demonstrate that you are aware that no research methods are ideal and that they provide only a limited capacity to collect data.

Below are some tasks to help you if you are dealing with qualitative-interpretive research:

- A. Think of at least four main ways in which qualitative research differs from the quantitative method. This might mean that you distinguish between two versions of what is called reality. What is meant by claiming that reality is objective and singular or that it is subjective and multiple? Please explain. Another talking point is about the role of the researcher; one position being that researchers should be independent while the other argues that it is alright to interact with those being researched. How will you explain the second position? What about the data? One position is that only numbers count as evidence, whereas the opposite view is that words have real meaning and express WIGO through the subjective experiences and interpretations of those closely involved in the subject-matter of your research. What

would you say to the sceptic who argues that such knowing data is too soft to count as anything called knowledge?

- B. Some would be content to label their research as belonging to phenomenology, simply described as a way of understanding the conscious action of subjectively interpreting individual experiences. It takes these grounded interpretations as the foundations of knowing and how they eventually become received knowledge. The subject-matter of such inquiries is referred to as things, meaning anything ranging from the tangible through to abstract concepts. How would you explain phenomenological research to the ardent positivist?



- C. Another way to label research is to acknowledge that you are exploring, mostly through interviews, WIGO as understood by the respondents to your questions. As the subject-matter is close to the hearts of some respondents, you might find them being emotional, especially if you delve into authentic insights and feelings associated with success and failure (performance). So here is the last task for you to address: should your research be called social constructivist or should it use another name? Does it matter?

#### 4. Reporting Research Findings

We have deliberately left this blank, as it depends on the research methodology how data should be reported and analysed. For instance, there is a big difference between reporting empirical quantitative data and data derived by an interpretive/qualitative methodology.



## **5. Conclusion**

### ***Concluding PhD Research***

It is expected that you will provide more than a simple summary of your main research findings. If you do it well, then you have reason to celebrate the conclusion, not only of your research, but also the long march you had on the way. Here is a digest:

1. After providing a summary of your key findings (only the highlights, not everything), you should give your own view of what they mean.
2. After your overview of the main findings you should consider their implications in this order:
  - a practical implication;
  - a strategic implication (if applicable);
  - a policy-making implication (if applicable);
  - a theory-building implication, that is, your academic knowledge contribution to the literature on the subject matter.
3. Admit the limitations of your own research design and propose remedies.
4. Stand back from your thesis and think as an independent researcher. What has the research taught you about WIGO? Should you be satisfied with what you have discovered or should you seek more and better data? Be constructively critical without overdoing it.
5. You should also provide some ideas for further research on the topic.

A PhD thesis should amount to about 80K words. There is skill involved in ensuring that the research does not go far beyond these word limits.

### ***Other parts of a PhD thesis***

- References. This should include all the sources you have consulted in doing the research.
- Appendices. This might include additional material that provides useful explanation, if required.

Please note, the above is only a general guide to the structure and content of a PhD thesis. More detail should follow through discussions with your supervisors.

## 6. Defence

### **General guidance for a PhD presentation**

You should plan on a 30-40-minute presentation, which we estimate to be about 15-20 slides, no more. The ones named below are essentials. The others are your choice.

- Title of your topic. Add your name.
- Overview of what you want to know – research focus and objectives.
- Background context and anything else you consider nice to know.
- Briefly explain the problem or gap in the knowledge your research addresses.
- Identify some key need to know literature sources you used to design the research, especially any concepts, models and theories you found helpful to generalize and big picture your findings.
- Research questions.
- Briefly describe the particular methods you used to collect data.
- Research findings and how they were analysed.
- The most important findings arising from the research and their implications for practice, strategy, and policy making. Were you able to add to big picture theory-building and how did you do this?
- Further research directions and what you would improve on your own design.
- Standing back ask yourself, “what did I learn about my subject and its capacity for the kinds of improvements and innovations my research explored?”

Please feel free to add more slides up to the maximum number (20), but only if they add value to your presentation.



## **7. Writing a Paper for Journal Publication**

What follows are summary notes on writing a paper for publication after the PhD thesis has been examined and passed with minor amendments. It provides a useful example of a mid-range journal that takes an interest in a broad range of topics. It is a Thai university-based publication with a long history and an established reputation for academic quality. Every paper is peer-reviewed.

It is on “Integrated Pest Management as Sustainable Agricultural Practice: The Process of Innovation-Adoption by Durian Growers in Thailand and the Role of Agricultural Extension Workers as Change Management Agents”. It was published by Assumption University in Thailand, *ABAC Journal* 22, no. 1 (2002): 40-57.

I was the main author and my PhD student, Dr. Kittipong Sirichoti, was the second contributor. Nothing would have been published as a journal article (altogether four papers were published) if he had not produced the raw materials in his thesis from extensive research on the topic. My long experience of academic publication, English language, and writing skills were superior to his, so it was decided I would mainly write the paper. It was a sensible division of labour.

These notes focus on the structure of the paper, which I suggest you follow in converting your research project or mini-dissertation into a paper for journal publication. I suggest that you write no more than 3-5K depending on the richness of your dataset. How was it put together? Follow these steps.

1. *Abstract.* IPM is briefly explained, then the context of the research (durian growers in Eastern Thailand) followed by the focus on innovation-adoption theory leading to the adoption of IPM by the farmers, with their learning facilitated by Agricultural Extension Workers (AEWs). After explaining the key factors involved in IPM adoption, the paper explores the study as an illustration of change management theory and practice. In short, the Abstract explains the focus and content of the evidence produced by the research-based investigation.
2. *Introduction: the focus of the paper.* Four paragraphs introduce the topic, mentioning the core concept of IPM, the problem of pest control for durian growers, the location of the research fieldwork, the role of AEWs and finally the theory of innovation-adoption.
3. *Explaining IPM to durian growers.* One long paragraph explains how IPM as a philosophy and practice was communicated to durian growers through a participatory workplace learning program organised by AEWs. They were identified as key change management agents communicating with semi-literate durian growers living in a subsistence economy in rural locations. This section combines the contextual background with leading concepts and how things happened in practice (WIGO).

4. *Conceptual background: the innovation-adoption model and active principles of environmental management (EM)*. Seven paragraphs cover the content of this subsection. IPM is introduced as an important innovation in the eyes of AEWS and the Thai government generally, striving to reform agricultural practices in farming communities and to make the economy better geared to international markets. The key economic and socio-psychological benefits of innovation-adoption are noted as well as the importance of communication and learning in knowledge diffusion. Attention is drawn to the theory of innovation-adoption advanced by E. M. Rogers (1995). The key factors involved in the process of decision-making in adopting an innovation are identified and briefly explained, based on Rogers. The links between IPM and EM are noted as well as how together they reflect modern thinking about sustainable agricultural practices.
5. *Research design and methods*. A brief description of the population sample of durian growers and location is followed by an outline of the descriptive survey design, probability sampling, and other tricks of the trade in six paragraphs. Stick to being descriptive about how you gathered data. Note the research limitations.
6. *Highlights of the IPM research findings*. The reporting of the dataset comprised the core of the paper and comprised six subheadings dealing with the key factors associated with innovation-adoption of IPM by the durian growers over a period of time (embracing *early adopters* through to *laggards*).
7. *Relating change management theory to the IPM project (discussion)*. These eleven paragraphs cover important ground, such as linking IPM as an ideal illustration of leading ideas from change management theory and practice. This actually takes five paragraphs. The rest deals more with the application of these leading ideas to what happened in the durian orchards and the growers gathered around the AEWs. The theoretical reflections extend into the realm of sustainability as a long-term strategy for agricultural development.
8. *Conclusion*. The focus of the paper is repeated along with the main ideas that were regarded as applicable to the central argument, notably about the importance of a grass-roots approach to workplace learning as an empowering approach to managing change in farming practices. Special mention was made of the key role of AEWs in informing and persuading the durian growers to adopt IPM and to give it a proper trial over a period of time. Nature rarely produces results in a short time-span.

9. References. This is a select list of those works actually consulted in writing the paper, including the PhD thesis that provided the source material.

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**Editors' Notes:** Doctoral-level research is already underway within Kepler Space Institute (KSI) and will increase in the future. Doctoral-level educational standards will be integrated into all of KSI's programs. Dr. Barry Elsey has successfully supervised seventy PhD and DBA candidates to earning their degree. He and I shared the doctoral supervisory role throughout Asia between 1997 and 2007. Amina Amarova is one of Dr. Elsey's PhD successes in Australia. She also has aerospace credentials from Russia. This article will be permanently available to KSI people through the Space Library of Rob Godwin. We also look forward to having both Dr. Elsey and Dr. Amarova working with us. *Bob Krone.*