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Introduction to Business Research I

The Research Proposal

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Introduction to Business Research I

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Contents

Preface		viii
Module 1	Orientation	1/1
	1.1 Introduction	1/1
	1.2 Ten Questions about the Research Stage	1/2
	1.3 The IBR Courses Process Model	1/4
	1.4 The Research Process	1/8
	1.5 The Thesis	1/13
	1.6 Supervision and Assessment	1/22
	1.7 The IBR Courses in Detail	1/26
	1.8 Some Important Issues	1/29
	Learning Summary	1/32
	Review Questions	1/33
Module 2	Research Planning and Time Management	2/1
	2.1 Introduction	2/1
	2.2 Research Aims and Objectives	2/2
	2.3 The Research Work Breakdown Structure	2/10
	2.4 Estimating the Time Required to Complete a Research Work Package	2/17
	2.5 The Research Schedule	2/22
	2.6 Milestones and Checkpoints	2/27
	2.7 The Importance of Periodic Review	2/29
	2.8 Delays, Contingencies and Responses to Major Progress Problems	2/34
	Learning Summary	2/36
	Review Questions	2/37
Module 3	The Philosophical Basis of Research	3/1
	3.1 Introduction	3/1
	3.2 Research Paradigms	3/2
	3.3 Positivism	3/4
	3.4 The Verification and Falsification Issue	3/12
	3.5 Phenomenology	3/14
	3.6 Comparisons between Positivism and Phenomenology	3/20
	3.7 Deductive and Inductive Theory	3/26
	Learning Summary	3/37
	Review Questions	3/38

Module 4	Applied Business Research Aims and Objectives	4/1
	4.1 Introduction	4/1
	4.2 The Concept of Applied Business Research	4/2
	4.3 Identifying the Area of Interest	4/5
	4.4 Generating the Research Problem	4/21
	4.5 Generating the Hypotheses	4/37
	Learning Summary	4/41
	Review Questions	4/42
Module 5	Research Strategy and Methodology	5/1
	5.1 Introduction	5/1
	5.2 The Research Strategy	5/2
	5.3 Cross-Sectional Research	5/9
	5.4 Longitudinal Research	5/12
	5.5 Research Methods	5/16
	5.6 Reliability, Validity and Generalisability	5/37
	5.7 Structuring the Research	5/45
	5.8 Shaping the Methodology: A Summary	5/48
	5.9 The Pilot Study	5/52
	Learning Summary	5/55
	Review Questions	5/56
Module 6	Preparing the Research Proposal	6/1
	6.1 Introduction	6/1
	6.2 Problems of Access	6/2
	6.3 Research Ethics	6/6
	6.4 Writing the Research Proposal	6/12
	6.5 Evaluating the Research Proposal	6/23
	6.6 Research Proposal Submission and Outcomes	6/28
	6.7 Example Research Proposal	6/36
	Learning Summary	6/52
	Review Questions	6/53
Appendix I	Practice Final Examinations	A1/1
	Practice Final Examination 1	A1/1
	Practice Final Examination 2	A1/7

Appendix 2	Answers to Review Questions	A2/1
	Module 1	A2/1
	Module 2	A2/2
	Module 3	A2/4
	Module 4	A2/5
	Module 5	A2/6
	Module 6	A2/7
Index		I/I

Preface

Programme Rationale

The Edinburgh Business School (EBS) Doctorate in Business Administration (DBA) programme is designed to develop applied business skills that can be used to address and solve real-world issues. The programme is aimed primarily at experienced managers and business professionals who are looking to develop doctorate-level research skills that can be put to practical use.

Traditional doctorate-level research is performed as part of a programme leading to the award of a Doctor of Philosophy (PhD) degree. Many PhD holders move into academia and develop academic careers as professional researchers. The DBA is an equivalent standard alternative. Most EBS DBA graduates will probably remain in commerce and industry and will develop careers as research professionals.

Irrespective of how doctoral skills are used or applied, and whether a programme leads to the award of a PhD or a DBA, the overall level of attainment is the same. In both cases the researcher must contribute to the existing knowledge base in some way. This contribution could be made, for example, through the discovery of new facts. It could, alternatively, be made through the demonstration of high-level critical reasoning. Either way, the research process is based on finding out something new, using something in a new way or using an existing tool to fix a new problem.

Many people who enter doctoral programmes have little or no research experience. A significant proportion of entrants to the EBS DBA programme hold MBA degrees. However, MBAs are usually taught programmes. Even some entrants with an MSc that involved a research element have no research experience beyond that required to produce an MSc-level dissertation.

The EBS DBA programme attempts to address this issue by requiring all new entrants to complete a suite of three courses that prepare the student to work with a mentor and then a supervisor in developing doctoral research. The three courses are entitled *Introduction to Business Research* because that is what they do: provide an introduction to how to do business research. They are aimed primarily at people who have no previous experience of doctoral research.

Programme Structure

In the EBS DBA candidates are required to design and implement a programme of doctoral research. The research is written up in the form of a thesis that is presented for examination. The examination is a viva voce (a formal defence of the thesis) before internal and external examiners.

The DBA comprises two stages: the courses stage and the research stage. The courses stage prepares candidates for each phase of the research stage.

The Courses Stage

The courses stage comprises three courses. These are called the *Introduction to Business Research* (IBR) courses. They are referred to as IBR1, IBR2 and IBR3.

- IBR1 explains how to prepare a research proposal.
- IBR2 explains how to prepare an intermediate submission.
- IBR3 explains how to design and conduct the main study, generate results and write up the thesis.

The Research Stage

During the research stage the various elements of the thesis are put together. Three separate pieces of work have to be produced for assessment.

The **research proposal** is a comprehensive statement of what the candidate proposes to do and how he or she proposes to do it. This covers areas such as the aims and objectives of the research, the background literature review, the outline research methodology, the programme of works and ethical issues, etc. IBR1 explains how to prepare a research proposal.

The **intermediate submission** consists of a title page, an introduction and a series of final draft thesis chapters including a comprehensive and exhaustive critical review of the existing literature base in the proposed area of research, together with a literature synthesis, statement of research aims and objectives, hypotheses and an outline research methodology chapter. IBR2 explains how to prepare an intermediate submission.

The **final thesis** is a 45 000- to 50 000-word thesis that incorporates the chapters submitted in the intermediate submission together with a full research methodology chapter, results chapter, conclusions chapter and all other components of the final thesis, bound and submitted according to University regulations. The thesis is then examined by qualified examiners at a viva voce examination. The candidate is questioned, and all parts of the thesis are examined and a face-to-face oral defence is required. IBR3 explains how to design and conduct the main study, generate results and write up the thesis.

Assessment

Both stages involve assessment.

In the **courses stage** each of the IBR courses is examined in a three-hour written examination. Candidates must achieve a minimum mark of 50 per cent to pass, and all three examinations must be passed. A maximum of one resit per subject is allowed. If the candidate fails an examination twice, he or she is required to withdraw.

During the **research stage** the research proposal, intermediate submission and final thesis are submitted for formal review by the DBA Research Committee. The Committee is a panel of EBS and external academics chaired by the EBS DBA programme director. Submissions must be accepted by the Committee before the student can progress to the next phase. If a submission is rejected, the Committee will issue a schedule of further work required and the submission is returned to the

candidate. Candidates can normally make up to two resubmissions in each phase. If both resubmissions are rejected, the candidate is required to withdraw.

The thesis is examined at a **viva voce examination**. Most candidates attend EBS for the examination, although examinations can be arranged via video link if required. A typical viva voce lasts some two to three hours. The outcome can be anything from 'Recommend award of degree' to 'Fail'. The most likely outcome is 'Recommend award of degree with minor alterations'. In this case the candidate is required to make minor corrections to the thesis prior to being put forward for the award of the degree.

Orientation

Contents

1.1	Introduction.....	1/1
1.2	Ten Questions about the Research Stage.....	1/2
1.3	The IBR Courses Process Model.....	1/4
1.4	The Research Process	1/8
1.5	The Thesis	1/13
1.6	Supervision and Assessment	1/22
1.7	The IBR Courses in Detail	1/26
1.8	Some Important Issues	1/29
	Learning Summary.....	1/32
	Review Questions	1/33

Learning Objectives

By the time the candidate has completed this module, he or she should understand:

- the structure of the EBS DBA *Introduction to Business Research* courses;
- the relationships between the courses;
- the aims and objectives of the research stage of the EBS DBA programme;
- the structure of the research stage of the EBS DBA programme;
- the concept of a doctoral thesis;
- the stages in the development of a doctoral thesis;
- the roles of the people involved in mentoring, supervision and examination; and
- some important underlying concepts.

1.1 Introduction

The Edinburgh Business School (EBS) Doctorate in Business Administration (DBA) programme comprises a courses stage and a research stage. Candidates are required to complete the courses stage before progressing to the research stage, and both have to be successfully completed for the candidate to be eligible for the award of the degree of DBA.

The courses stage forms the foundation and explains the philosophy and structure of the research stage and the mechanics of the mentored and supervised phases within it. This module introduces the documents that have to be prepared and submitted for review during the research stage: the research proposal, the intermediate submission and the final draft thesis.

The courses stage usually comprises the three *Introduction to Business Research* (IBR) courses, which all candidates, except those with existing doctoral degrees, must study. Most EBS DBA candidates have little or no research experience when they enter the programme because most hold MBA and/or MSc degrees that involved no applied research. It is necessary, therefore, for the candidate to acquire basic research skills before progressing to the research stage. The courses develop generic knowledge and understanding of how to design and implement applied business research. In some cases, however, the courses stage may involve additional courses. For example, where there is a mismatch between a candidate's existing qualifications and his or her chosen area of specialisation, one or more additional courses may be prescribed. In such cases, the precise composition of the courses stage depends on the candidate's qualifications and experience.

On completion of IBR1 (The Research Proposal), the candidate will be equipped to design and write a fully structured and coherent research proposal that describes what the research is about, what it is designed to achieve and how it is to be executed to a standard that convinces the DBA Research Committee that the proposed research is viable. The Research Committee is a panel of applied research experts who critically review the proposal in great detail and identify any areas of ambiguity or weakness so they can be corrected before the candidate proceeds to the next phase. It is, of course, imperative that any weaknesses in the research proposal are identified and corrected before the candidate implements the research.

I.2 Ten Questions about the Research Stage

I.2.1 Introduction

A good way to achieve an overview of the DBA research stage is to consider 10 frequently asked questions. The various terms and processes discussed in the responses are developed in more detail later in this module.

I.2.2 Ten Questions

I.2.2.1 What Is the Point of the Research Stage?

The EBS DBA is a doctoral degree equivalent to a Heriot-Watt University PhD and, therefore, is examined in the same way and to the same standard. Under Heriot-Watt University regulations PhD and DBA degrees must contribute to the knowledge base in the relevant subject area. The research stage allows the candidate to either discover new facts or demonstrate sufficient high-level critical reasoning to make a contribution to the knowledge base.

I.2.2.2 What Is the Output of the Research Stage?

The output is a doctoral thesis that is put forward for examination. The thesis is developed through a series of stages and conforms to a specified structure. The candidate writes up his or her research as a thesis and then presents it to the

examiners and defends it against critical review. If accepted, and after any corrections are made, the thesis is stored in the University library and in national libraries.

1.2.2.3 What Do I Have to Do to Complete the Research Stage?

Once all courses and examinations have been completed and a credible three- to four-page outline research proposal submitted to the senior mentor, the candidate is assigned a mentor and progresses to the research stage, which consists of two phases and the examination.

1. **The mentored phase.** The candidate works with the mentor to produce a final research proposal that is submitted for formal review by the DBA Research Committee. The research proposal may be accepted or rejected. Once it has been accepted, the candidate progresses to the supervised phase.
2. **The supervised phase.** The candidate works with the supervisor to design and implement the research and write up the thesis. The thesis usually comprises two elements:
 - The intermediate submission, which includes the introduction, literature review, literature synthesis, pilot study report and outline methodology chapters.
 - The final draft thesis, which includes the intermediate submission plus the data collection and analysis, and results and conclusions.
3. **The examination.** This usually comprises a viva voce (oral) presentation before examiners appointed by the University.

1.2.2.4 What Is a Research Proposal and Why Do I Need One?

A research proposal is a formal document that sets out exactly what is intended to be achieved in the research and how it is to be done. The research proposal is considered by the DBA Research Committee, and the candidate can proceed only when the Committee is convinced of its viability.

1.2.2.5 What Is a Mentor and Why Do I Need One?

The mentor is a member of EBS faculty. He or she will guide the candidate through the development of the research proposal. The mentor is necessary because most EBS DBA candidates have little or no research experience and, consequently, need some expert help in writing the proposal and developing the research skills to be ready to work with a supervisor. The mentor provides generic advice on the proposal and prepares the candidate to work with a supervisor.

1.2.2.6 When Will I Be Allocated a Supervisor?

Candidates are allocated a supervisor as soon as possible after they produce a viable research proposal that is accepted by the DBA Research Committee.

1.2.2.7 What Is an Intermediate Submission and Why Do I Need One?

The intermediate submission is a formal document that comprises a series of draft chapters that will go on to form part of the final thesis. A typical intermediate

submission comprises an introduction chapter, a series of literature review chapters, a literature synthesis, a statement of research aims and objectives and a section on methodology. The candidate can proceed to the final stage of the research only when the Research Committee is convinced of its continued viability.

1.2.2.8 How Big Is the Final Thesis?

The final DBA thesis is normally around 45 000 to 50 000 words including references and appendices. This compares to a typical PhD thesis that is usually not less than 45 000 words and not more than 80 000 words.

Under University regulations doctoral theses (DBA and PhD) shall not normally exceed 80 000 words and shall not normally exceed 400 pages in length including appendices. If a DBA thesis is likely to exceed 80 000 words or 400 pages including references and appendices, a case has to be made to the University prior to submission.

1.2.2.9 How Long Will It Take to Complete the Research Stage?

The time required to complete the research stage depends on numerous factors, including the nature of the research, access to data and the time available to the candidate. As a rough guide an 'average' candidate with a demanding job and family commitments might expect to complete the research stage in three to four years. A candidate with no work or family commitments might be able to complete the research stage in two to three years.

1.2.2.10 How Is the Research Stage Examined and When Do I Get My DBA?

The research stage is examined by thesis and viva voce examination by internal and external examiners. Once any required corrections have been made to the satisfaction of the examiners, the candidate is recommended for the award of the degree of DBA and the degree is conferred at the next congregation.

1.3 The IBR Courses Process Model

1.3.1 Introduction

The underlying rationale of and fit between the three IBR courses is shown in the process model in Figure 1.1. A process model is a diagrammatic representation of a sequential process split up into its individual components.

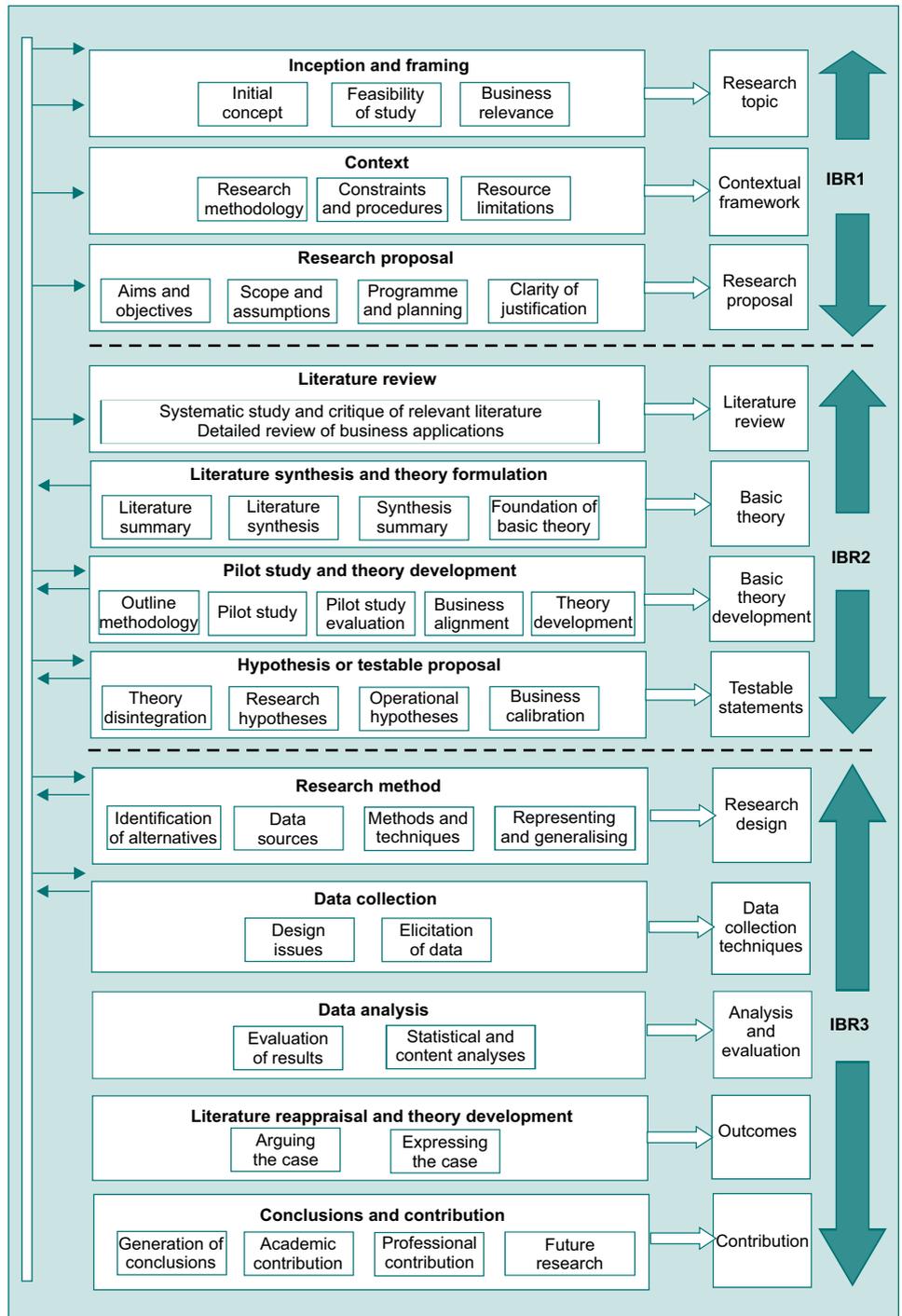


Figure I.1 The IBR process model

The sequence is described below.

- IBR1 explains the principles of research and how to prepare a viable research proposal.
- IBR2 explains how to design and conduct a review of the existing knowledge base and literature so that the proposed research can be located within the context of what is already known.
- IBR3 explains how to develop a research methodology that is both reliable and replicable, and how to collect and analyse data and present findings.

This sequence of progression matches that encountered in most academic and industrial research programmes. For example, a product developer working for a mobile phone manufacturer might be interested in developing a new type of handset that uses some kind of innovative touchscreen technology. The company has to be careful how it invests in the research and development of new products because the time and cost implications are considerable and the economic viability of the proposed new product can quickly change in a dynamic market.

The first step is to develop a presentation for review and (hopefully) approval by senior management. The presentation must contain sufficient information for senior management to make an informed analysis and decision on the technological and financial viability of the proposed new product. It must, however, contain only relevant information: irrelevant content will slow the evaluation process without adding value. In putting together the proposal, the product developer would identify the gap in the market, substantiate the case using market research results and support this with an indicative business case. The business case would detail likely development and production costs, research and development time estimates, and time to market, etc.

This presentation is effectively a research proposal (IBR1). Its purpose is to make a sufficiently strong case to convince senior management to commit to taking the proposal to the next stage. If the proposal is accepted, it does not mean the product will go on to be developed for full production or that it will be a commercial success. Acceptance of the research proposal simply means that senior managers think it has potential and are willing to allow more time and money to be committed to it so it can be developed in more detail at the next stage.

The next stage might be to develop the research proposal further by conducting a detailed analysis of the existing knowledge base on the proposed new product. The product developer might review a wide range of company and external information on touchscreen technology. This is effectively a literature review (IBR2): a wide-ranging and critical review of all that is known about what is likely to be involved in developing the proposed new product.

If this is approved, the researcher will be required to specify a detailed research method for developing the new product. The research method should be clear and reliable and should be evaluated before the company commits to it. It will have to say exactly how the research is to be carried out, what the phases of new product development will be, what evaluation milestones there will be, when the prototypes will be ready, how they will be evaluated and so on. This process approximates to the research methodology (IBR3).

This example of the early stages of new product development is illustrative of the general progression outlined in IBR1–3. The IBR courses work both individually and as part of a suite. Individually they describe parts of the overall process. Collectively they describe the process of research from first principles to detailed implementation.

1.3.2 The IBRI Sub-Process Model

The sub-process model relevant to IBR1 is shown in Figure 1.2. In IBR1 the candidate is provided with the information required to generate the research proposal.

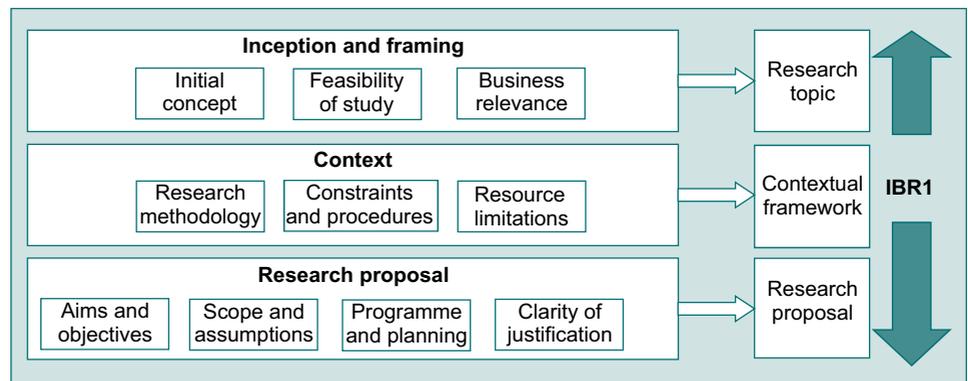


Figure 1.2 The IBRI sub-process model

1.3.2.1 Inception and Framing

The candidate develops an **initial concept** that may be suitable for further development, and then analyses the **feasibility** of the concept. In some cases it may be necessary to perform a formal feasibility study, in which the time required, resources available, deliverables and other practicalities are considered. The concept should be relevant to professional business practice (have **business relevance**).

1.3.2.2 Context

A **research methodology** is selected for the proposed research. The candidate may choose to use a quantitative or qualitative approach, or a combination of the two. The candidate considers time, cost and other **constraints** and **limitations** that could affect the outcomes of the research.

1.3.2.3 Research Proposal

The research proposal is the outcome of the framing and context sub-processes. It is a formal statement of the candidate's research intent that is evaluated by the DBA Research Committee. It is either accepted or rejected depending on its viability and potential.

The format and presentation of the research proposal is discussed in detail in Module 6. It has three main components that must be borne in mind at all times. The proposal must:

- identify the research question (i.e. what is to be found out);
- describe how the data will be collected; and
- show how the data will be analysed.

I.4 The Research Process

I.4.1 Introduction

The aim of the EBS DBA programme is to produce applied business research professionals who can use their doctorate-level skills to real effect at senior executive level in a business environment. This differs from the typical aim of a Doctor of Philosophy (PhD) degree, which is to produce professional researchers who use their research skills with more emphasis on theoretical and academic application.

The structure of the DBA differs from that of most PhD programmes in that it is composed of a courses stage and a research stage. A traditional PhD programme comprises little or no taught element, and the candidate focuses entirely on the research. This is because candidates typically enrol on a PhD programme after completing a first degree and MSc. Some universities run overlapping MSc and PhD programmes, in which PhD students are required to pursue a relevant MSc as part of the first year or first two years of the research programme.

The structure of the EBS DBA courses stage varies depending on the existing qualifications of the candidate. All candidates are required to complete IBR1–3 in sequence. Some candidates may be required to complete other subject-specific courses in addition to the IBR courses. By the time the candidate has completed the courses stage, he or she will have demonstrated a command of both the subject-specific and the research-oriented skills necessary for doctoral research (i.e. a basic working knowledge of how to prepare a viable research proposal, literature review and research methodology, and of how to write up the research in the form of a structured examinable thesis). This does not, of course, guarantee that the subsequent research will be successful.

I.4.2 The Concept of the Knowledge Base

Doctorate-level research is research that contributes to the knowledge base in the chosen research area. **Knowledge base** refers to everything that is known by researchers in the area, and this is expressed by means of published information in that area. **Published information** includes everything from website articles to peer-reviewed research journal articles.

For example, if a candidate performs a literature search in the field of strategic risk interdependency, he or she might identify 10 000 published pieces of work ranging from PhD theses to newspaper articles. This is the **literature base**. The literature base is not the same as the knowledge base. For example, the literature

base may contain two publications that say different things, and there may be two corresponding schools of thought within the knowledge base. In addition some published texts are more significant than others. For example, a published research paper in a top-ranking refereed research journal carries more knowledge base and research significance than an unsubstantiated newspaper article. Both, however, represent part of the literature base.

The knowledge base is all the knowledge generated by and contained within the literature base, including all current theories, schools of thought, original ideas under development, etc. In doctorate-level research, the candidate is required to add to this knowledge base. There are two widely recognised ways in which this can be done. The first is through the discovery of new facts. For example, a researcher might prove a causal relationship between two variables where no such relationship had been shown to exist before. The second is by independent critical reasoning. For example, a researcher might demonstrate a new application for a known tool or model by applying it to a specific case.

The size of the knowledge or literature base in the chosen research area is important. There are advantages and disadvantages associated with large and small literature bases. If the literature base is small, the candidate has plenty of scope for selecting a specific area that has not been researched before and it is easier to address the issue of **originality**. On the other hand, there is less literature on which to base the proposed research. There are fewer publications that can be cited in substantiation of the proposed research design. In addition, the fact that there are few publications in an area may be a clear warning that the candidate should be wary of it. In the case of a subject with a large literature base, the candidate may have more of a problem defining an area where an original contribution can be made, but a large literature base also means there is plenty of existing research upon which the proposed research can be based and is also indicative of the area itself being viable for research.

In other words, it is best to choose an area with a large literature base. An area with little or no literature base is likely to be non-viable. One of the first things the mentor will ask the candidate to demonstrate is that there is a viable literature base in the chosen research area. The Research Committee is likely to accept a research proposal for research in an area with a non-viable literature base only if the candidate is able to make a sufficiently strong and convincing case in support.

1.4.3 The Concept of the Doctoral Thesis

In order to complete the research stage and graduate with the degree of DBA, the candidate must design and implement the research programme and then write up an account of the research and the contribution to the knowledge base in a doctoral thesis. He or she must then defend the thesis before examiners. There are numerous definitions of the word 'thesis'. Some examples are listed below.

- A lengthy academic paper: a research dissertation based on original research, especially as part of the work towards a higher academic degree.

- A proposition: especially one used as an argument or as the basis for an argument.
- A statement: especially an unproved statement that serves as a premise in an argument.

Physically, the doctoral thesis is a bound volume written by the candidate and submitted to the University. Successful theses are retained by the University and stored in the University library. A copy is also retained by the British Library, the national library of the UK. The thesis is a permanent piece of work that is released into the public domain and is testament to the work of the candidate.

Some EBS DBA candidates, depending on their existing qualifications, may be familiar with the idea of a thesis and may have produced one as part of their earlier studies. In most MBA courses there is no requirement for a separate research thesis and there is often little or no direct research in the syllabus. Some master's degrees, such as Master of Science (MSc) or Master of Philosophy (MPhil), however, require the preparation of a formal dissertation as a standard component of the course of study. Most MSc courses comprise a taught element and a research element. In most cases, therefore, the dissertation is completed in partial fulfilment of the requirements for the award of the degree. In most full-time MSc courses the student effort hours required for the dissertation are about equal to the total student effort hours required for the completion of the taught courses.

In most MPhil courses, the dissertation or thesis is normally completed in fulfilment of the requirements for the award of the degree, and there is no taught element. Some universities offer MPhil courses as being effectively an MSc by pure research. In other cases doctoral candidates may be initially required to register for an MPhil and then transfer to full PhD registration upon successful completion of the first year. In some cases, the research that has been developed in this time may not be of an acceptable standard, and the doctoral candidate remains registered for an MPhil and eventually is awarded the degree of MPhil for research.

A doctoral thesis, whether PhD or DBA, is different from both the MSc dissertation and the MPhil thesis. The basic structure may be the same, but the level of rigour and standard of outcome is highest in the case of the doctoral thesis. It is possible to complete an MSc dissertation or MPhil thesis successfully without demonstrating the discovery of new facts or making a contribution to the knowledge base. For example, it may be possible for a candidate to receive an MPhil degree without conducting any original research. The research could, for example, be restricted to a critical analysis of an extensive literature review in order to show patterns or trends in the literature. A doctoral thesis must both contribute to the knowledge base and be original work.

Most theses are structured using a number of common elements. These are sometimes referred to by different names, but they generally contain the same basic components and contribute to the thesis in more or less the same way.

The starting point is the production of a research proposal. Once approved, the research proposal acts as the foundation for the research that follows, and each section is expanded as the final draft thesis is produced. The next stage is development of a critical literature review that demonstrates the candidate has acquired a

detailed understanding of the relevant literature and knowledge bases. The candidate then formulates a research problem or question, which is a simple expression of what the research is trying to achieve and is used to establish a research aim and a series of research objectives. The aim expresses what the research is trying to determine, while the objectives express the measurable components of the aim. In many cases a testable theory or hypothesis is developed directly from the literature review and synthesis. This often takes place after a pilot study in which the ideas suggested by the literature are investigated in a preliminary manner. In order to test the theory or hypothesis, the candidate has to devise a programme of empirical work, which is the process used to collect and analyse data. The results are then processed and collated to produce conclusions. A glossary of terminology relating to the empirical work is given in Table 1.1.

Table 1.1 Terminology for empirical work

Empirical work	The arrangements for, and the execution of, data collection in order to test a theory. (It is contrasted with the literature review and similar work, which are done to arrive at the theory in the first place.)
Research methodology	A rationale for each of the constituents of the empirical work (sometimes used as a generic term to include the constituents as well as the rationale). The constituents are as follows.
Approach	The fundamental assumptions under which research is done (see Module 3).
Method	One of several ways of turning data into information. The different methods tend to be associated with one or other approach (see Module 5).
Technique	One of a numerous range of procedures by which data are collected. Techniques tend not to be associated with particular methods (i.e. a given technique may be used to gather data for more than one sort of method). This is covered in more detail in IBR3.
Research design	The particular way in which data collection is arranged so that a research hypothesis can be properly tested.
When presenting plans for empirical work, the candidate must do more than <i>describe</i> the chosen approach, method, technique(s) and research design. It is essential that he or she provides a methodology for each, to explain <i>why</i> he or she has chosen them rather than some alternative.	

The stages in the development of any thesis (discussed in more detail in later modules and also in IBR2 and IBR3) can be summarised as follows.

- **The development of a research proposal:** the candidate defines in detail what the research is intended to achieve and how it is to be achieved.
- **The development of a literature review:** the candidate demonstrates that he or she is familiar with the relevant published literature.
- **The development of a research question, theory or hypothesis:** the candidate formulates his or her own testable research question, theory or hypothesis based on the literature review.
- **The choice of a research approach, research method and associated techniques:** the candidate establishes a reliable approach to the collection and analysis of research data.
- **Data collection and analysis:** the candidate uses the approach to collect and analyse research data.
- **The generation of results and conclusions:** the candidate then generates results and discusses them to arrive at conclusions.

As with virtually all US and EU doctoral theses, the DBA is assessed at a viva voce, or oral, examination. The candidate presents the thesis before an internal (Heriot-Watt University) and an external (non-Heriot-Watt University) examiner. The examiners have to satisfy themselves on a number of key issues, including the following:

- that the thesis is the candidate's own work;
- whether or not the thesis outcomes form a contribution to knowledge of the subject;
- whether or not the thesis affords evidence of originality;
- whether or not the originality element is supported by the discovery of new facts;
- whether or not the originality element is supported by the exercise of independent critical power; and
- the extent to which the candidate understands the complexities involved.

The examination concludes with a recommendation from the examiners, who may award the degree of DBA or recommend the award of the degree subject to minor or major alterations. In extreme cases a thesis may be failed and no resubmission allowed. The most frequent outcome is that minor alterations are required.

It should now be clear that a doctoral thesis is a considerable undertaking and represents a major challenge different from that presented by the examinations in the courses stage. The candidate will be required to develop entirely new points of view and approaches if the research stage is to be successfully completed.

I.5 The Thesis

I.5.1 Introduction

The EBS DBA thesis is a doctoral thesis and demands the same level of rigour as a Heriot-Watt PhD. The two are examined using the same system of examiners, and they require candidates to develop the same level of research ability. Both are required to make a contribution to the knowledge base.

Candidates should refer to the University regulations for confirmation of current thesis requirements. Some major considerations are given below.

I.5.2 Thesis Size and Originality

Candidates normally aim to produce a final thesis of around 45 000 to 50 000 words including references and appendices. The thesis is usually around 200 pages and should not normally exceed 400 pages. This target size is smaller than the University requirement for a PhD thesis, which is 45 000 to 80 000 words. Although the EBS DBA thesis typically contains fewer words than a PhD thesis, the requirements for contribution to the knowledge base are no less demanding.

All parts of the thesis must be the candidate's own work. Candidates must ensure that they comply in all respects with current University guidelines on the issue of plagiarism (*see* Section 1.8.4). The candidate is required to sign a declaration that he or she has read the University guidelines on plagiarism and that the thesis complies with them in all respects. A copy of the latest guidelines can be found at www.hw.ac.uk/registry/resources/PlagiarismGuide.pdf.

The DBA Research Committee carries out a plagiarism check and reviews the draft literature review and methodology sections of the intermediate submission before allowing the candidate to proceed to the main study (data collection, analysis, results and conclusions). The final draft thesis is approved by the Committee before submission for examination.

I.5.3 Thesis Contribution

University regulations require that the DBA thesis or dissertation 'shall form a contribution to the knowledge of the subject and afford evidence of originality, shown either by the discovery of new facts or by the exercise of independent critical power'. This requirement is important and is broken down into its components below.

- **Form a contribution to the knowledge of the subject.** As with the PhD, so with the DBA: the thesis must contribute to the relevant knowledge base as defined by the relevant publications. This requirement is one of the main reasons a detailed literature review is central to the thesis: in order to demonstrate that he or she has made a contribution to the knowledge base, the candidate must first define the knowledge base itself through the literature review. This requirement could be interpreted as the production of a piece of knowledge that has not been published before.

Unlike conventional doctorates, in which the knowledge contribution serves to develop scholarly understanding, the contribution of the DBA is twofold: to the world of professional practice and to the world of scholarship.

Doctoral contributions can be large or small. An example of a large-scale contribution is the 1996 discovery of the link between Bovine Spongiform Encephalopathy (BSE) in cattle and variant Creutzfeldt-Jakob disease (vCJD) in humans in the UK. This finding proved for the first time that prions (a form of protein) could cross the species divide between cattle and humans. Most research, however, makes a more modest contribution. As a result the knowledge base widens slowly as each researcher extends it at the margins, and this is certainly the case with DBA research, where the topic researched usually addresses issues taken from professional practice in a particular organisation or sector.

In a business context a typical contribution could be to show that there is a link between the competency profile of two merging organisations and the short-term success of the merger. The competency profile could be defined as the range and levels of individual competencies at senior management level. It is important to keep the research focused, and it is advisable to define a relatively limited data set where possible. For example, the research might be restricted to the senior management levels within the sample organisations. The candidate might then establish a method for defining the competency profile of the two merging organisations. This could involve the development of a competency matrix in which senior management competencies are portrayed in terms of range and level. When the profiles of the two organisations are transposed, the analysis may reveal overlaps in some areas and deficiencies in others. The candidate might then show in a detailed case study that, the better the fit between the profiles, the greater the short-term success of the merger. The 'success' could be defined by several measures, including increased shareholder value, integration speed, merger cost, etc. The candidate might then develop results and attempt to validate them by conducting smaller cross-sectional studies across a range of similar organisational types. The outcome may be a statistical analysis showing that, the better the competency profile fit, the more successful the merger, in a manner that is statistically significant.

The research should be designed so that it produces a contribution to the knowledge base regardless of the actual results. For example, a researcher might analyse a large sample and conclude that there is strong evidence for a causal link between variables A and B. Another researcher might conduct similar research and find there is no evidence of a causal link between B and C. Both researchers can use the results to contribute to the knowledge base. It is just as valid a contribution to demonstrate no association.

Another example could relate to cultural differences. A prediction model might be developed in the US and applied and tested over a long period with the result that it is regarded as reliable for use in the US. A researcher might then try to apply the same model in Europe. The US-applicable tool may or may not work in the same way in Europe. The researcher could make a contribution by showing that the tool works the same, works differently or does not work at all in

Europe. Any of these three outcomes would make a contribution to the knowledge base.

- **Afford evidence of originality.** This overlaps with the preceding component. The contribution made to the knowledge of the subject has to be original. Replicating existing research results (known as **corroboration**) can strengthen results but does not involve original thinking. It is not always possible to be truly original, and the examiners will make a trade-off between originality and the quality of the other aspects of the thesis.
- **Shown by the discovery of new facts.** This is similar to the requirement for originality and for the results to make a contribution to the knowledge of a particular subject. The discovery of new facts is, by definition, originality. As in the case of originality, the examiners make a trade-off between reinforcement of existing facts and the other aspects of the thesis.
- **Shown by the exercise of independent critical power.** This is likely to be the most important to many DBA candidates. Consider some possible definitions of the words ‘independent’, ‘critical’ and ‘power’. **Independent** in a research context means ‘not influenced’ or ‘not controlled’. This comes back to the requirement for originality and original work. In the same context **critical** means being able to offer opinions or judgements on both the literature and the research findings. **Power** refers to the ability to offer these independent and uncontrolled judgements. This part of the regulation is very important because it is likely to be the approach that a significant proportion of DBA candidates adopt. A candidate can evidence originality by developing independent opinions or judgements about, for example, a real business case; this forms a contribution to the knowledge base.

1.5.4 Thesis Development

Thesis development is discussed in more detail later in this course and in IBR2 and IBR3. The purpose of this introductory section is to provide a foundation for a more detailed understanding as the candidate progresses through the IBR courses. The research stage of the EBS DBA contains two phases and three checkpoints, given in Table 1.2.

Table 1.2 DBA checkpoints

Phase and checkpoint	Progress
<i>Mentored phase</i>	
Checkpoint 1	Working with the mentor to complete the research proposal .
<i>Supervised phase</i>	
Checkpoint 2	Working with the supervisor to complete the intermediate submission (comprising an introduction, literature review, literature synthesis, research hypothesis and design of the programme of empirical work).
Checkpoint 3	Working with the supervisor to complete the thesis (including data collection and analysis, presentation of results and write-up).

I.5.4.1 Checkpoint 1: The Research Proposal (Mentored Phase)

Before embarking on the mentored phase of the research stage, the candidate will have completed the courses stage. The candidate then begins work with an EBS mentor to develop a research proposal, which is submitted to the DBA Research Committee for consideration. If it is rejected, it will be returned to the candidate with a report or list of further works required. The candidate must continue to develop the research proposal until it is accepted by the Research Committee.

In developing the research proposal, the candidate is offered guidance by a mentor. The mentor is not empowered to impose direction. He or she can only read the research proposal as it develops and offer guidance and advice. The fact that the mentor has read a completed research proposal does not necessarily mean it will be accepted by the Research Committee.

The mentoring role is generic: the mentor might not be (and does not need to be) an expert in the specific research focus chosen by the candidate. The mentor provides advice on all aspects of the research proposal from finding and reviewing literature and developing a background literature review to formulating research aims and objectives, methodology options, etc.

EBS also offers specialist pre-mentoring or supplementary mentors in a selection of popular research specialisms including finance, human resource management, strategic planning and marketing. Specialists are available to offer subject-specific advice either before or after the mentor is appointed. For example, the generic mentor may be mentoring a research proposal based on some aspect of applied financial management. The mentor may feel sufficiently competent to offer help and advice on all aspects of the research proposal with the exception of one area that is highly specific. In such cases the mentor can call in the services of the supplementary mentor to offer subject-specific advice.

The mentor works with the candidate until there is agreement that the research proposal is ready to be submitted for formal review by the Research Committee. However, even if the research proposal is accepted by the Committee, this does not mean that it will necessarily be developed into a successful thesis. Acceptance simply means the Committee feels the proposal shows sufficient potential to be worth developing to the next stage.

I.5.4.2 Checkpoint 2: The Intermediate Submission (Supervised Phase)

Candidates should refer to subsequent sections of the IBR texts for further details on the roles and responsibilities of the supervisor. This section is intended to give a broad overview only.

Once the research proposal is accepted, the candidate is matched with a supervisor. Every effort will be made to match candidates with a supervisor who has related research interests and (if possible) is located in the same country or continent.

The candidate develops an intermediate submission, comprising a literature review; literature synthesis; research question, theory or hypothesis; and a research methodology. As with the research proposal, the intermediate submission must be developed to a standard that is accepted by the Research Committee. If the inter-

mediate submission is not acceptable, it will be returned to the candidate with an indication of further works required. With the assistance of the supervisor, the candidate must then continue to develop the intermediate submission until it is accepted by the Research Committee. The candidate can resubmit it a maximum of two times. If the document is rejected for a third time, the candidate will normally be required to withdraw from the DBA programme.

1.5.4.3 Checkpoint 3: The Thesis (Supervised Phase)

The candidate is required to implement the programme of empirical work designed during the first part of the supervised phase. This usually involves carrying out some kind of data collection and analysis. For example, the candidate might conduct a series of interviews and use the responses to provide data that are then processed and used as the basis for testing one or more stated hypotheses. The approach to analysis could be quantitative (numerical), qualitative (descriptive) or, ideally, a combination of the two. The research method must be scientifically credible and should be replicable. The analysis must be logical, investigate the data in the way intended and generate a clear set of research results. In most cases this will include a comparison between the actual results and the hypothesis. The candidate must also offer a clear set of conclusions and suggestions for further research. The final draft thesis is then formally submitted for examination when the supervisor considers the document to be of an acceptable standard.

Assessment is by formal viva voce examination comprising the candidate, the internal examiner, the external examiner and, possibly, the supervisor. There is no guarantee that the internal and external examiner will pass the final thesis. Success depends on the extent to which they consider the research aims and objectives have been achieved and the way in which this is carried out.

1.5.5 Thesis Structure

The recommended structure of the thesis is discussed in more detail later in this course and in IBR2 and IBR3. The purpose of this introductory section is to provide an overview that acts as a foundation for the development of a more detailed understanding as the candidate progresses through the IBR courses.

There is no international framework for a doctoral thesis. The format and balance between sections will vary depending on the research area. The candidate can elect to structure the thesis in more or less any way. The supervisor will, however, almost certainly suggest a format that includes the following sequence.

- Preliminaries.
- Introduction.
- Literature review.
- Literature synthesis and theory formulation.
- Initial statement of methodological assumptions.
- Pilot study and theory/hypothesis development.
- Finalised research design and methodology.
- Data collection and analysis.

- Results.
- Literature reappraisal and theory development.
- Discussion, conclusions and suggestions for further research.

In an ‘average’ doctoral thesis, the possible chapter headings might be as discussed below. Please note that the word counts are indicative only.

- **Preliminaries.** This section includes the title page, acknowledgements, table of contents, lists of figures and tables, and list of appendices. The preliminaries section includes an abstract that provides a summary of the research, including the primary findings. Abstracts are used by other researchers when they are conducting literature reviews. Abstracts should be no longer than a few hundred words and should give other researchers a ‘flavour’ of what is included in the thesis. There is a required format for the layout of the title page and the sequence of acknowledgements, table of contents, list of figures, etc. This format is defined in the DBA Handbook.
- **Introduction.** The introduction should typically be 1000 to 2000 words. It should contain a brief summary of the aims and objectives of the research, together with a summary of any assumptions and limitations that apply. The introduction should also clearly establish the scope of the research and identify any areas that have been omitted, with justifications. A reader should be able to gain a clear picture of the research areas from the introduction alone.
It is natural to assume that this chapter should be written first. In fact, doctoral research is highly fluid, and there may be several modifications to the development of the research. As a result the introduction chapter is often one of the last parts of the thesis to be written.
Modifications and minor changes in direction are permissible, but the supervisor will almost always advise against any major changes to aims and objectives as the research progresses. It is very important that the initial aims and objectives are carefully researched because they are central to the direction of the development of the research. If they are subsequently changed, the research already conducted may be aborted, and valuable time could be lost. The Research Committee also looks for any divergence in original aims and objectives as the candidate’s progress reports are submitted. The Committee will request a justification for a report that contains evidence of a significant shift in aims and objectives.
- **Literature review.** A literature review can comprise one or more chapters, and the layout and content of the chapters reflect the content of the thesis title. For example, a thesis might have the following title:

An investigation into the effectiveness of contemporary strategic planning implementation systems in the integration systems of large-scale merger and acquisition implementation processes in the UK financial sector.

This title includes the following important components:

- the effectiveness of contemporary strategic planning implementation systems;
- integration systems;
- large-scale merger and acquisition implementation processes;

– the UK financial sector.

The example title suggests that the structure of the literature review should be four chapters, as listed above. Each chapter should survey the literature in each of these areas, and, although each chapter addresses a different subject area within the title, it is important that they are linked. The objective of the literature review is to demonstrate a critical understanding of the existing knowledge base. This is likely to cross subject barriers, and it is important that the literature review also does this. The literature review also acts as the basis for the research question, theory or hypothesis. It is important to show that this question, theory or hypothesis has been developed through analysis of the literature, rather than having been ‘thought up’ independently by the candidate.

Linkage between literature review chapters can be achieved in a number of ways. The most obvious is to end each chapter with a brief summary and an overview of the subsequent chapter, explaining how it relates to the current chapter. In the example above, the summary of the first literature review chapter could include a section on how integration is an essential component of strategic planning implementation systems in mergers. Companies merge in order to fulfil strategic objectives. The success of the merger, and therefore its contribution to the achievement of the strategic objectives, is a function of how well the various stages of each company can actually be integrated. The wording should be appropriate to the link between these two areas.

Another way to achieve linkage is to cross-reference. This approach can be used increasingly as the literature review grows. Themes developed in one literature review chapter can be raised again in a subsequent chapter and expanded in the context of the subject matter. For example, a point on strategic planning integration linking the first two review chapters could be raised and developed further in the mergers and acquisitions chapter. The use of cross-referencing, especially if it is focused and related, can greatly assist in the development of a strong central theme running through the literature review. Ideally, this should evolve naturally from the literature review, including a combination of published facts and the candidate’s own deductions and observations, building up in a logical progression towards the eventual research question, theory or hypothesis.

Sometimes studies arrive at different conclusions. The candidate must be able to evaluate the studies in terms of their validity and statistical significance in order to assess their contribution to the research issue.

While the literature review may run to several chapters, it must not be so large that it cannot be contained within the standard word limits that apply for a DBA thesis. As outlined above, the normal size of the EBS DBA thesis is around 45 000 to 50 000 words. In many cases the literature review and synthesis make up about a third of the final thesis, depending on the size of the existing literature base, so an average literature review and synthesis might be 10 000 to 15 000 words. In cases where the existing relevant literature base is small, it could be considerably shorter.

- **Literature synthesis and theory formulation.** It is not sufficient simply to review and accept what other researchers have published. The candidate must demonstrate understanding of the literature, using his or her own reasoning and

deductive skills to evaluate critically both individual and collective publications. At this point it is worth recalling University regulation that calls for original work evidenced by ‘the exercise of independent critical power’. In the literature review the candidate should demonstrate an ability to compare sometimes contradictory theories or concepts and justify any decision as to their validity. This concept is discussed in more detail in IBR2.

This chapter synthesises the literature. **Synthesis** means identifying the main themes in the literature, combining them into a cohesive logical progression and identifying the current state of the art. Synthesis is essential because the chapters suggested by the thesis title typically cover different disciplines. The key to a successful literature review is to become familiar with each of the literature areas, summarise each in a critical manner and then draw out the connections between them in the synthesis chapter, in a way that identifies a gap in the knowledge that merits attention.

The outcome of the literature review and synthesis is a research theory, question or hypothesis suitable for testing and analysis. The linkage between the literature synthesis, the critical evaluation of the primary emergent points from the literature and the development of the research theory, question or hypothesis should be clear and logical.

- **Pilot study and theory/hypothesis development.** It is always advisable to test the research theory or hypothesis with a pilot study before embarking on the full research analysis. A pilot study, as the name suggests, is a short testing study for the main study. It could take a relatively small sample and focus on one or more of the central areas of the primary research hypotheses. If the main study is designed to be based on questionnaires and interviews carried out with 50 companies, the pilot study might include three or four such companies in a preliminary evaluation. The main purpose is to test the reliability of the chosen research method.

The pilot study fits into the development of a formal research question, theory or hypothesis as shown in the ordered list below. This is discussed in more detail in Module 3.

1. Literature review.
2. Literature synthesis.
3. Basic theory.
4. Pilot study.
5. Pilot study results.
6. Integration of the literature synthesis and pilot study results.
7. Formal theory.
8. Research question.
9. Research aims and objectives.
10. Research hypotheses or belief statements.
11. Operationalisation.

Having undertaken a literature review and provided a synthesis, the candidate develops the basic theory. The candidate then designs and implements a pilot study in order to evaluate the basic theory and the methodology to be used in the main study. This may well require an initial consideration of the basic methodol-

ogy that underpins the planned main study, in which the statement of assumptions is quite detailed.

The results of the pilot study are compared with the outcomes of the literature synthesis in order to evaluate the compatibility of the two. Depending on the compatibility, the basic theory is adopted or developed to become the formal theory. This development may involve several iterations of the literature synthesis and pilot results; indeed, it's important to continue reading as new publications become available even after a promising formal theory has been arrived at. The formal theory is then expressed in terms of a research question. The research programme is developed around this question and is specified in terms of formal aims and objectives. These are then stated in terms of research and operational hypotheses. This approach is considered in more detail and with examples in Module 3.

In many cases the pilot study (if properly designed and implemented) can suggest new areas of interest beyond what is supported in the literature.

- **Research design and methodology.** After refining the research hypothesis or theory through the results of the pilot study, the next stage is to finalise the statement of the basic assumptions and a research method with its associated data collection techniques, arguing for their suitability to the topic being researched by means of a methodology. This step is essentially the same as writing a recipe for baking a cake. The ingredients and actions are written down so that anybody reading the recipe can bake the cake provided they follow the instructions. In theory, if every cook uses the same recipe, and follows it exactly, all the cakes produced will be the same. The same philosophy applies to the research methodology. The research methodology chapter must contain sufficient detail so that any other researcher can use the same design to obtain the same results using the same data set. This concept gives rise to the research requirement of **replicability**. Most research is valueless without the replicability factor.

Replicability is a fundamental requirement in the physical sciences and engineering but is less important in the economic and social sciences. In the DBA thesis the examiners may or may not look for a degree of replicability, depending on the research topic. For example, in the case of a large sample analysed using a highly quantitative approach, it may be possible to achieve a high degree of replicability. In other cases, such as indicative applied research conducted on a single organisation, it may not be possible to achieve a significant degree of replicability because of the unique characteristics of that organisation.

Thus, while a degree of replicability is desirable in economics and social sciences research, it is not always essential. A candidate could produce an adequate DBA thesis with a low degree of replicability.

- **Data collection and analysis.** In applied business research, data are usually collected through structured observation, questionnaires or interviews, often associated with the abstraction of data from company files and records. The techniques used to analyse the data can range from relatively simple classification and counting to advanced statistical techniques. In the applied business field the most useful research often includes a combination of quantitative (numerical) and qualitative (descriptive) data.

- **Results.** The results are the outcome of the analysis. Results provide the basis on which the main research theory or hypothesis is either accepted or rejected. Straightforward hypothesis acceptance or rejection may not be the only approach to results and conclusions in business research. In some cases it might be appropriate to modify a theory and/or hypothesis.
- **Literature reappraisal and theory development.** The results of the research can be used to reappraise the literature and develop the main research theory or hypothesis. Given the research timescales involved, the initial literature review may have been conducted months or years before the final research results emerge. As a consequence, the initial review may become out of date as new publications emerge. In addition, the literature may actually support the results in ways that were not envisaged at the time the original review was conducted. Doctoral research often throws up new and unforeseen results. Some of these results may be suggested in the literature but have been overlooked when the review was conducted. It is necessary to go back through the literature, update the review and look for evidence supporting any new or unexpected findings. A validation study can be carried out at this stage, although it is not typically necessary for the DBA. A validation study strengthens the research by recourse to a different set of data sources. Qualitative validation can be particularly useful. The results of the research will be significantly reinforced if a validation study is carried out that shows that a high proportion of (for example) senior managers in the same field agree with them.
- **Discussion, conclusions and suggestions for further research.** The final stage of the thesis is to discuss the implications of the findings, to derive final conclusions and to identify suggestions for further research. The discussion would examine the implications for professional practice and for scholarly knowledge. The final conclusions would be developed from the analysis of the results as refined by the literature reappraisal and any validation studies, bearing the discussion in mind. The suggestions for further research should identify potential areas that are outside the scope and range of the current research but that are useful and promising areas for other researchers to develop. The candidate should be entirely honest about the limitations of the research. This will pre-empt potential criticisms from the examiners. For example, no methodology is ever perfect and there will always be aspects of the research design that could have been improved and areas of the data collection and analysis processes that could have been modified to improve effectiveness and efficiency.

1.6 Supervision and Assessment

1.6.1 Introduction

The design and implementation of a doctoral research programme is a major undertaking. Unlike the courses stage, candidates do not work through the research stage alone. DBA candidates who have little or no experience of research could not successfully complete a doctorate-level research programme without the assistance

of an experienced and qualified academic advisor. A doctoral research programme requires a high level of analysis, and the thesis is subjected to the most rigorous levels of scrutiny to ensure that it is of a sufficient standard for the degree to be awarded. Heriot-Watt University regulations, in common with those of most US and European universities, require a doctoral thesis to be examined by both internal and external examiners.

This section gives an overview of the people involved in supervising and examining a doctoral thesis. Candidates should refer to the DBA Handbook for a more detailed description of the roles of the individuals concerned.

1.6.2 The People Involved

The EBS DBA is an international programme with students all over the world. The programme is facilitated by a nucleus of EBS faculty, based in Edinburgh, who manage an international network of DBA candidates and research specialists acting as mentors, supervisors and examiners.

1.6.2.1 The DBA Research Committee

The DBA Research Committee oversees the management and development of the research stage of the DBA programme. The Committee has a wide range of responsibilities, including reviewing draft research proposals and intermediate submissions, and developing policy and procedures. The Committee meets as and when required by the demands of the programme. Meetings are held every eight weeks or so and more frequently during periods of heavy demand. Materials should be submitted at least two weeks before the meeting at which they are to be considered; a list of deadlines and meeting dates is provided in the DBA resources available on the Student Portal.

From the candidate's point of view the main duties of the Research Committee are the review and evaluation of the research proposal (checkpoint 1: *see* Section 1.5.4.1) and intermediate submission (checkpoint 2: *see* Section 1.5.4.2), which are submitted by the candidate for formal review by the Committee when they are completed. These submissions are evaluated in detail and discussed at a formal Committee meeting. Having discussed the reviews, the Committee either accepts or rejects the submission.

In the case of a rejection, the Committee provides a summary of the areas that still need to be addressed, and the research proposal or intermediate submission is returned to the candidate for further development.

The Research Committee comprises members of the EBS faculty and some external members. The members are all qualified to doctoral level and have all supervised at least one doctoral research programme to successful completion. Most hold professorial status.

The Research Committee acts as the primary quality control regulator in the DBA programme. While the Committee is responsible for appraising the standard of all research proposals and intermediate submissions, it does not have any authority over the award of the degree of DBA. The Committee is responsible for

considering research proposals and intermediate submissions and for expressing a non-legally binding opinion on whether or not sufficient progress has been made and on whether or not the research proposal contains sufficient potential for successful development.

The final decision as to whether or not the research element has been successfully completed lies with the examinations board (*see* Sections 1.6.2.5 and 1.6.2.6). The fact that a research proposal or intermediate submission has been accepted by the Committee does not imply that the candidate will necessarily go on to successfully complete the research stage and be awarded the degree of DBA.

1.6.2.2 The Mentor

The candidate cannot be matched to a supervisor until the research proposal has been completed and accepted, so it is necessary to have generic rather than subject-specific guidance at this point.

The mentor is an experienced researcher who provides generic advice on the structure and content of the research proposal and on a range of issues such as sources of literature, developing a critical review, basic research design, etc. The mentor effectively prepares both the candidate and the research for the supervised phase. The candidate is not allocated a supervisor until he or she has developed sufficient knowledge and understanding of applied research design and a viable research proposal. This system minimises student 'warm-up time' in the supervised phase and facilitates the early development of the candidate-supervisor relationship.

The mentor establishes contact with the candidate and then provides him or her with general guidance for the duration of the development of the research proposal. Most of the communication between the candidate and the mentor takes place using messages on the DBA Board within the Student Portal. In some cases mentors and candidates prefer to discuss the research by phone. This is acceptable provided a summary of each conversation is also recorded on the DBA Board.

The role of the mentor is advisory, and the candidate may disregard any advice that is offered if he or she so chooses – at his or her own risk. The mentor is a highly experienced researcher with considerable mentoring experience, so the candidate would be most unwise to disregard any advice received. If the candidate does refuse to accept the advice of the mentor, the DBA programme director may intervene. In extreme cases, if the candidate refuses to take the advice of the mentor and the DBA programme director, the Research Committee will intervene and may recommend termination of the research.

Some candidates prefer to work with minimal interaction, whereas others make extensive use of the mentor. The degree of interaction is largely the choice of the candidate.

While the mentor will make every effort to assist the candidate in the development of the research proposal, the involvement of the mentor does not guarantee that a proposal will achieve a standard acceptable to the Research Committee. Some candidates may not be capable of producing a suitable research proposal, irrespective of the degree of support offered by the mentor.

1.6.2.3 The Supervisor

The supervisor takes over from the mentor after the Research Committee approves the research proposal. Unlike the mentor, the supervisor is a subject expert in the chosen research field. He or she is also actively engaged in research in the field, which provides a contemporary view on what works, and what is less effective, in the conduct of research in the given topic.

Consequently, the supervisor is the main resource to draw on in researching the DBA. A text such as this, and the related courses IBR2 and IBR3, are an important mainstay, but as time moves on the approaches, methods and techniques to be adopted evolve. New emphases emerge as new techniques are developed. This has been particularly marked in the use of internet-based techniques for direct data collection and for accessing various social networking media for sampling, data collection and analysis. In the event of an apparent or actual inconsistency between the content of the courses and what the supervisor has to say, the candidate should be prepared to take the views of the latter very seriously indeed. There is more on this in IBR3.

Supervisors are drawn from EBS faculty, Heriot-Watt University faculty and faculty from business schools worldwide. Supervisors are qualified to PhD or DBA level, have published work and have supervised at PhD or DBA level to successful completion. The supervisor directs and advises the candidate through the literature review and the data collection and analysis, results and write-up.

Close geographical proximity between candidate and supervisor is not essential. Most candidates and supervisors work together effectively using the DBA Board and email exchanges backed up by occasional phone discussions.

1.6.2.4 The Senior Supervisor

The senior supervisor oversees the individual supervisors and acts as a moderator but usually has no direct contact with candidates. The senior supervisor monitors the DBA Board exchanges between the candidate and the supervisor, making sure that an adequate number and frequency of exchanges are taking place. The senior supervisor also provides a second informed opinion on the formal progress reports (*see* IBR2) that are completed by the candidate at regular intervals through the supervised phase of the research. All formal progress reports have to be signed off by both the supervisor and the senior supervisor. The Research Committee relies on the senior supervisor for quality assurance.

The senior supervisor is responsible for the identification and selection of new supervisors. When the candidate has progressed through mentoring, the senior supervisor matches the candidate with a potential supervisor. The senior supervisor evaluates potential new supervisors and inducts them into the EBS DBA system.

The senior supervisor is also responsible for the identification of both internal and external examiners, and their nomination to the University. Appointment is done by the University and not by EBS.

1.6.2.5 The Internal Examiner

Doctorate-level theses are examined by an examinations board that includes internal and external examiners. The internal examiner is a member of the EBS faculty or of another faculty within Heriot-Watt University.

The internal examiner is responsible for examining the doctoral thesis in order to ensure that it complies with University regulations relevant for the award of the degree. The internal examiner accompanies the external examiner (*see* Section 1.6.2.6) at the viva voce examination of the thesis. The internal examiner reads the thesis in detail prior to the examination and then, along with the external examiner, asks relevant questions about the thesis. When the oral defence is complete, the internal examiner discusses the thesis and the defence with the external examiner. The supervisor may be present but is not usually required to contribute. The supervisor is not permitted to argue in support of the thesis or the presentation but may be called upon by the examiners to clarify points.

If the thesis is not to the required standard, the examiners may require amendments. In the case of minor amendments the internal examiner may assume responsibility for ensuring that any such corrections are made without further recourse to the external examiner.

1.6.2.6 The External Examiner

The external examiner is a member of faculty of another university. The external examiner could be selected from a UK university or from a suitable university anywhere in the world, or may be a practitioner working in a company or other organisation provided he or she fulfils the requirements for appointment as an external examiner. All external examiners are subject to approval by the Senate of Heriot-Watt University.

The external examiner receives a copy of the thesis and reads it in detail before the examination. He or she normally assembles a list of questions or notes and uses these as a basis for the discussion that take place in the examination.

At the end of the examination, the external examiner discusses the thesis and presentation with the internal examiner. They agree on a decision and complete a report.

The concept of defence is central to doctoral thesis examinations. The viva voce examination is a demanding test, and the candidate must be properly prepared and ready to defend the thesis in front of an examiner he or she has never seen before. Defences where the candidate is not absolutely certain of the details of the methodology and existing literature can be disastrous.

1.7 The IBR Courses in Detail

1.7.1 Introduction

This section gives an overview of the three IBR courses. It is important that candidates understand how the courses work together to provide a generic founda-

tion for business research. The courses are designed to take the candidate from no knowledge of applied business research to a level at which he or she can work with a designated supervisor and develop a doctorate-level research programme.

The supervisor is responsible for assisting the candidate in developing the research method and provides direction on more advanced and specific aspects of research methodology applicable in each case. The courses do not attempt to explain advanced and specific methodologies because the choice of appropriate methodology will depend on the research problem being addressed.

1.7.2 Aims and Objectives of the Courses

There are three IBR courses:

- IBR1: The Research Proposal.
- IBR2: The Intermediate Submission.
- IBR3: Empirical Work, Thesis Presentation and Assessment.

The courses are self-contained, but they link together to provide the phased skills required for the development of the thesis. On completion of IBR1, candidates should be equipped to produce a fully detailed research proposal to the standard required by the Research Committee. On completion of IBR2, candidates should be equipped to produce an intermediate submission, including a fully detailed and comprehensive literature review that is of a sufficient standard to be accepted by the Research Committee. On completion of IBR3, candidates should be equipped to complete the research and develop the thesis to a standard acceptable for presentation and viva voce.

1.7.3 IBR1

This course takes the candidate from an assumed zero knowledge to understanding how to prepare a formal research proposal. It introduces the concept of research and the quantitative and qualitative research philosophies and gives advice on developing a research focus from business issues. The course also introduces the mechanics involved in preparing a formal research proposal from first principles, which includes development of the logistics of a research programme and timetable.

IBR1 includes some elements of literature review and research design: these are important in the development of the research proposal. The research proposal must contain references to the literature to outline what is already known, because the research objectives and method must be based on the existing literature, and the research hypothesis or theory must be an extension of this literature base. In order to avoid rejection by the Research Committee, the research proposal must show evidence of a potential to contribute to the knowledge base of the selected subject and offer potential to allow the discovery of new facts, or the potential for the candidate to exercise independent critical power.

1.7.4 IBR2

This course shows how to develop a literature review from the research proposal. The literature review enables a suitable research hypothesis or theory to be developed and an appropriate empirical approach to be identified.

Candidates must develop an understanding of the role of the literature review. Developing and submitting a doctoral thesis is similar to presenting a case in court. Assertions (apart from those directly provable by experimentation) are inadmissible. All statements must be supported by appropriate references to the literature. For example, a candidate might make the statement ‘Business productivity is a function of employee motivation.’ To some extent the statement is obviously true. However, the extent to which it is true is unclear because there are a number of other issues and functions involved. It is, therefore, necessary to substantiate any such comments with references to the literature. In a typical reference the information contained would comprise:

- the name of the author;
- the year of publication;
- the title of the article;
- the title of the journal or other type of publication involved;
- specific identification material such as the volume of publication and the page numbers concerned.

For example, the statement ‘Business productivity is a function of employee motivation’ may have been made by Dr Joe Bloggs in an article entitled ‘Banal statements in organisational behaviour’ published on pages 22–44 in Volume 27, Issue 1, of the *Journal of Applied Nomenclatures* in 2004. In the main body of the text, this quotation would be cited as:

Business productivity is a function of employee motivation (Bloggs, 2004).

The reference in the references section of the thesis would then provide the full details:

Bloggs, J. (2004) ‘Banal statements in organisational behaviour’. *Journal of Applied Nomenclatures* 27, 1, pp 22–44.

The use of a referencing system allows readers to see quickly that the course is reinforced by the literature. In addition, the reference identifies the exact location of the materials cited in support of the statement. If there is any doubt, readers can access the relevant publication and check it for themselves. Informed readers (such as supervisors and external examiners) will be familiar with the literature and will expect references to prominent researchers.

1.7.5 IBR3

This course takes candidates from the literature review and methodology to data collection and analysis, the generation of results and the write-up of the final thesis.

IBR3 details the procedural and analysis techniques necessary for data collection and interpretation of business data. It considers the nature of inference and interpretation, the concept of the pilot study and validation study, and literature reappraisal and theory development prior to the generation of final conclusions. The course offers advice on the writing-up process. Writing up may sound relatively straightforward, but it can be the most difficult part of the research. The thesis must contain a logical and methodical argument (whereby each section builds on the previous) and a central theme whose relevance is reinforced by each successive section and chapter.

IBR3 provides advice on presentation and techniques that may be useful in the viva voce examination and in the implementation of any amendments required by the examinations board.

1.7.6 Using the Courses

The difficulties associated with applied business research cannot be overemphasised. It is common for candidates to underestimate the effort involved and the degree of detail required. Candidates have to pass examinations in the three courses, and the examiners will not award a pass if the candidate does not demonstrate the required skills for each one. The courses provide a basic introduction to the field of applied business research. The specific application will vary depending on the organisation chosen as the basis for the research. More advanced and specific research methods and associated approaches are developed in conjunction with the supervisor.

The courses act as a bridge between the assumed zero research awareness of the candidate and the knowledge that can be provided by the experienced supervisor.

1.8 Some Important Issues

1.8.1 Introduction

These issues have emerged during the operation of the EBS DBA programme and are listed here so that new candidates can allow for them as they develop their own research programmes. They are not the only issues the candidate needs to be aware of, but they are particularly important as they have the potential, if not managed properly, to affect the research stage of the programme.

1.8.2 Managing Expectations

Candidates should always remember that the research stage involves high-level doctoral research. The IBR courses attempt to prepare the candidate for the research stage, and each candidate is offered the services of a mentor and, subject to completion of a viable research proposal, a supervisor. None of these sources of guidance and support, however, offers a guarantee that an individual candidate will be equal to the demands of doctoral research.

Doctoral research requires a candidate to think for himself or herself at the highest level. In many cases questions are posed to which there is no definitive answer

that can be found in a reference book. In doctoral research answers have to be forged for the first time. This is an entirely different learning experience for most DBA candidates. Some candidates who are good at studying and passing examinations also have an aptitude for research, but some do not have the level of creativity and innovation necessary to design and implement doctoral research. In some cases it is unlikely the candidate will ever be able to successfully complete the DBA.

While the courses are designed to develop basic research skills, they can go only so far in preparing the candidate for the rigours of the mentored and supervised phases. If a candidate successfully studies the courses and passes the examinations, this is an indication that he or she has developed the basic research skills required to progress to the mentored phase, but it does not guarantee that the candidate will be successful in research.

1.8.3 Thesis Size and Work Required

The thesis should normally have a final word count of around 45 000 to 50 000 words including references and appendices. This target size is smaller than the standard University requirement for a PhD thesis, which is 45 000 to 80 000 words. However, it is examined in the same way and to the same standard. The thesis must make a contribution to the knowledge base, and it has to be prepared and presented to a standard equal to that of a PhD.

It is, therefore, important to accept that there is a considerable amount of work involved in conducting DBA research and writing up the thesis. There are no standard timescales for completion, although current University regulations contain upper time limits. Candidates must be prepared to spend a great deal of time designing and implementing the research and drafting the thesis. As an outline guide a candidate with plenty of time to progress the research might expect to complete the DBA within three years. A candidate with limited time because of work and family commitments might expect to take four years to complete. The EBS DBA is not a 'quick PhD'.

1.8.4 Plagiarism

Plagiarism is the act of taking the work of a third party and presenting it as one's own. For example, a school student who is writing an essay might copy a similar essay from the internet and simply change the name on it before handing it in for assessment. In another case a student might cut and paste sections from several different existing essays to form a new essay that he or she then submits as his or her own work. Plagiarism can take different forms, from the direct copying of entire documents to the paraphrasing of individual paragraphs and sentences. It applies to figures and tables as well as to text. Plagiarism is a major problem in schools and universities around the world, and the incidence of plagiarism has increased with the growth of the internet.

It is important that candidates appreciate, from the very start of the research stage, that the research must be their own work. Where the work of others is included or cited, it must be attributed and referenced. This applies to all work

submitted during the research stage, including the research proposal, the intermediate submission and the final draft thesis.

1.8.5 Change Control

As discussed in Section 1.5.2, the research proposal, intermediate submission and final draft thesis are subject to formal review by the DBA Research Committee. The idea of this reviewing system is to ensure, as far as possible, that the research is progressing satisfactorily at each stage.

It is important to realise that individual mentors and supervisors have their own views on research design and implementation and that it is helpful for an overview to be applied that creates the possibility for change in the light of further reading and initial piloting of the empirical work. Thus, for example, a candidate may have a preference for designing research around a quantitative approach as this reflects his or her qualifications and experience. The candidate may subsequently discover that interesting observations that were not expected from the outset emerge from interviews. He or she may therefore decide to adopt a more qualitative approach during the course of the research.

The Research Committee takes a balanced view. If the Committee accepts a research proposal based on quantitative research methods, then it is very likely the research will be viable using that particular approach. For this reason, the focus of the research cannot be subsequently changed without the approval of the Committee. When the supervisor and candidate agree a change would be desirable, the change must be referred to the Committee, and Committee approval must be forthcoming before the change can be implemented.

It is, therefore, very important to ensure that the research proposal is an accurate representation of the intended research, because once approved it can be difficult to change.

1.8.6 Written Access Guarantees

EBS DBA research is applied research. Candidates are normally required to obtain research data from real organisations. In order to obtain this data, candidates may have to conduct semi-structured interviews, issue postal or email questionnaires or examine organisation files and records, etc. Research data obtained by the researcher directly from individuals or organisations are often referred to as **primary data** in that they are obtained directly and for the first time by the researcher. Data obtained from published results, such as financial performance characteristics taken from published profit and loss accounts that are already in the public domain, are often referred to as **secondary data**.

In most cases, to obtain primary data the candidate has to work closely with a given organisation, and this obviously requires the consent and agreement of that organisation. If the viability of the proposed research depends on that primary data, it follows that it depends equally on the consent and agreement of the organisations that are to provide it. It is vitally important, therefore, to understand that guaranteed access to the necessary data is a key aspect of DBA research design. Candidates

must demonstrate they have guaranteed and unrestricted access to all necessary data from the earliest stages in the research design process. In most cases, when assessing a research proposal, the Research Committee will require **written access guarantees** to be provided as part of the submission (*see* Section 6.2.4).

A written access guarantee is usually a signed letter on company headed paper that clearly states the company or organisation will allow the candidate access to all necessary data, whether this is people to interview or company documents and records. The written access guarantee has to be submitted along with the research proposal. Research proposals that do not contain adequate access guarantees will be rejected. It is worth noting that the Research Committee has previously rejected a number of otherwise promising research proposals simply because they were not supported by adequate written access guarantees.

1.8.7 Establishing a Viable Literature Base

It is important to remember that the candidate must be able to demonstrate a viable research base in the chosen research area. Research areas that have little or no published research should be considered as high risk and avoided. The mentor will ask the candidate to demonstrate that there is a viable literature base in the chosen research area. If the candidate is unable to demonstrate a viable literature base, the mentor will probably recommend that he or she choose an alternative research area. It is important to remember that the Committee is likely to accept a research proposal for research in an area with a non-viable literature base only if the candidate is able to make a sufficiently strong and convincing case in support.

Learning Summary

This module has provided an introduction to the research stage of the EBS DBA. The chief points to remember are as follows. The EBS DBA comprises a courses (taught) stage and a research stage. Unlike the conventional doctorate, the purpose is to train the candidate to make a contribution to professional business practice, rather than to business knowledge in general. As with any doctorate, the contribution has to be significant, original and show evidence of independent critical power, resulting from a coherent programme of work rather than an isolated study.

The candidate is guided by a mentor who assists in the development of a research proposal, a supervisor who provides subject expertise, and feedback from DBA Research Committee reviewers at the research proposal, intermediate submission and final draft thesis stage.

The outcome is a major document and viva voce examination, conducted to the same standards of rigour as any other doctorate.