

1: Introduction

Welcome to the microsite for postgraduate research. Within this site there are a number of units which address different elements of the research process. It is structured in such a way as to guide those with little or no previous research experience through the process. The skills that you need to undertake research may change with each project, so be prepared to revisit this material over and over again as each project develops.

2: Preparing for Research

Introduction

In this Unit we will be looking at our expectations for Master's Level study. What behaviours and activities are expected from you? How does this differ from undergraduate study? What skills and proficiencies will you need to develop? How do we expect you to engage with your studies at this level?

At the end of this unit you will:

- Have an appreciation of the standards and level of engagement expected of a Master's level student
- Have an overview of the skills and attributes that you will need (or need to develop) to be a successful student
- Know where to look for help, support and additional information

2.1: What is different about Master's Level study?

Learning Materials and Activities: The learning materials and activities that are available to you as a master's student are a framework upon which you will need to build your own knowledge. They help you make sense of the basic concepts and develop the skills to then develop and enhance your understanding of the subject matter.

Approach to Study: You are asked to not only understand the basics, but also to apply these to new/different situations or cases. You are also expected to be critical of the information that you consume, to question it and suggest alternative explanations.

Assessments: A level of critical evaluation and application is required at Master's level. Assessments will not ask you to describe a concept, or a case study, but to critically evaluate it.

These critical evaluation skills are essential if you wish to be a successful student at Master's level; it is worth spending some time to really understand what is meant by criticality.

Independent Scholarship Project (Dissertation): This is a significant research project which forms 1/3 of the credit value of your Master's degree. It has various uses as an academic exercise depending on where you see your future beyond this MSc; it could help you solve a professional problem; learn new skills to help you enhance your employment prospects and provide a stepping stone to future research or further study. Making the right choice of project is key and through this module you'll start to develop the skills that will allow you to do this.

What does a successful Master's Level Student look like? University of Derby Definition:

"Successful students should be able to display mastery of a complex and specialised area of knowledge and skills, employing advanced skills to conduct research, or advanced technical or professional activity, accepting [accountability](#) for related decision making including use of supervision; demonstrating a deep understanding of the field of enquiry through independent modes of learning? (Postgraduate Taught Programmes [Framework](#)).

2.2: What defines Master's Level Study

Four Key Criteria that provide the evidence required to demonstrate the masters level of learning

- Critical evaluation with confidence
- Demonstration of deep knowledge
- Independent Learning
- Identifying issues to address

Critical evaluation with confidence

- Giving a **personal** view
- **Substantiating** this view with **reference** to current knowledge
- Accepted mechanism is by referring to relevant literature
- Standard **protocol** for **citing references** is expected
- Use of clear English, combined with structured approach, giving rise to persuasive argument
- An **authoritative** style of writing similar to that found in **reputable** academic or professional journals or text books

Demonstration of deep knowledge

- **Comprehensive coverage** of the subject area
- Level of **understanding** demonstrated through **application** of knowledge and information in differing circumstances or situations.
- Deployment of **personal argument and persuasion** in order to achieve logical conclusion.

Independent Learning

- Some of the assessed material may demonstrate that the student has acquired knowledge from independent sources resulting from **directed reading** or by

independently seeking their own learning material.

Identifying issues to address

- **Identification** of issues or problems relevant to the subject area
- Ability to **interpret** and pose solutions to these issues or **further develop arguments**, thus shedding new light.
- An awareness of knowledge and information relating to the subject area and how research informs the subject area

2.3: Learning, Teaching and Assessment at Master's Level

You'll notice that there is a significant difference in the approach to learning, teaching and assessment at Master's level. The emphasis is on you being more independent and self directed. Below we have outlined how your learning experience may be different from that which you have encountered before.

Learning Materials: As this is a fully online course you will be replacing formal lectures with accessing Learning Materials online. These provide you with:

- Knowledge framework: the basic introduction to the topic/theme/technique as a result of this you are expected to engage in further reading/research to consolidate your understanding.
- Signpost to useful sources of knowledge: additional sources of information and further resources will be signposted to you, but you are expected to access them and make use of them to support your own understanding.

Optional and Formative Learning Activities: Within each of the units you'll find Optional (this means you may do them if you choose) learning activities that will help support your learning and understanding of the subject matter. There will also be Formative learning activities for which you will receive valuable feedback from your tutor to support your knowledge, understanding and development within this area. You should also use this feedback to improve your performance in future learning activities.

Summative Assessment: these are formal pieces of assessment that will result in a grade/mark which counts towards your final module result. You will receive feedback on your performance in these assessments, which you should also use to improve your work in the future.

Working with your Peers: learning with and from your peers is one of the most enjoyable parts of any educational experience. There will be opportunities for you to work collaboratively with your peers throughout many of the modules within this Master's programme. Some of these interactions will be informal (the opportunities to use discussion boards for social and informal interaction), some will be related to optional and formative learning activities. There will also be formal assessment activities that require you to work as part of a peer group and produce a tangible product or output.

Discussion Forums: depending on the nature of the module we will use discussion forums in a variety of ways. These can include; to support student social interaction, for the posting of FAQ's, the discussion of specific topics or themes where you will have a particular task, the facilitation of group collaboration and the evidence of your engagement with the learning materials.

Wikis: this technology will be used to help you evidence group collaborative work. Within this

module we will use a small group wiki for your first assessment task (the research abstract), each of you will work in a small group to develop a wiki to evidence your ability to write a research abstract. Wikis are a great way to help you demonstrate the development of a specific output or product and the process of development as it is possible to see each person's individual contribution.

Peer Review: within some modules we will also ask that you review and give constructive feedback to a peer on their work. This is a really valuable skill as it helps you review your own work with the same critical eye. The key element of this process is constructive feedback; that is feedback that helps the other person improve or enhance their work.

Opportunity to ask questions: dedicated online tutors are there to support you and to answer your questions, however, there are many other sources of information that you can use which may provide you with answers and solutions to problems, or even confidence that you're making progress in the right direction. Don't forget that your student orientation has a wealth of information, there's the "TrafficLight" system to also point you in the direction of help and support, your programme handbook and also the module handbook for each of your modules. You'll also often find FAQ's at the module and programme level.

Live Classroom Sessions: Within this module we will have up to three "virtual live classroom" sessions through the Blackboard Collaborate system. This allows us to all meet at the same time in an online classroom. The dates, times, and topics for these sessions will be advertised well in advance. If you're unable to attend the session it will be recorded and archived for you to access at a later date.

Assessments: The assessment approach for each module is likely to be very different, but how you will be assessed will always be clearly explained. Be sure that you fully understand what is required of you before you embark upon the assessment. Assessment briefs/guidelines are produced and are available at the beginning of the module to help you understand what is required. Look at these early so that you can plan your time.

Within this module the assessments are specifically designed to help you develop the skills that you will need for assessments in other modules and in preparation for the Independent Scholarship. Things to remember are; you must show the masterly skills (detailed earlier) and pure book knowledge without critical evaluation or application is a Fail grade.

2.4: Studying at Master's Level

What are you expected to do?

Each taught Module

For a 20 credit module we expect that you should be committing a total of 200 hours of your time over 12 weeks. That equates to approximately 17 hours of study per week. The Learning Materials and Learning Activities for each unit vary in size and demand on your time. Beyond these visible and tangible sources of content and activity you should also be considering your own research and preparation time. The following are an indication of how you might be spending your time:

- Private Study
- Wider reading
- Preparation for live classroom sessions
- Research for Assignments
- Writing Assignments
- Read Widely in each Module

In the first few weeks of the semester, why not spend all 17 hours reading and preparing for

the learning activities, discussion boards or virtual live classrooms. Use the Reading list as the start point. Read relevant Journals.

Tips for making the most out of your reaching, research and preparation time:

- Use the references in the Learning Materials, books and journals to find additional sources to read
- Find different viewpoints
- Make notes as you read and organise these notes in such a way as they help you prepare for learning activities and assessments
- Build your bibliography of useful sources as you go (consider using an online bibliography tool such as Zotero to help you collate, organise and record useful sources that you encounter online)
- Keep digital copies of useful materials

Assessment:

General assessment criteria for postgraduate students is available at** assessment criteria for individual assessment tasks are available alongside the assessment briefs.

Writing Assessments: Developing strong written communication skills is important at the Master's Level. In looking to develop your writing style you should:

- Read journal articles and professional publication to understand the appropriate academic style.
- Find sources with bibliographies that help you broaden your reading/research
- Ensure that you accurately reference ideas and materials that you take from your research materials.

As a result of your research you should be able to:

- Compare and contrast different authors and theories
- Form and justify your own views and conclusions
- Persuade the reader of your point of view accepting that often there is no single right answer, only your own argument

2.5: Conclusion

Conclusion:

In this introduction we have looked at the following:

- Our expectations for Master's Level Study
- An outline of what you can expect to encounter during your studies in terms of Learning Activities, Assessment, Interaction and Engagement
- Sources of information and help

To get you started in this module there are a number of learning activities within Blackboard to help you start thinking about your approach to your Master's degree. These learning activities are focused upon you thinking about your skills and your professional development needs. Being able to reflect on your current strengths and weaknesses will help you prepare for your studies and prepare for success in this module.

3: What is Research?

Since this module aims to develop your research knowledge and skills, we believe it is best to start with setting some boundaries as to what research is and is not. In doing so we aim to refresh and enhance some of the research knowledge you may already have and contribute to 'dismantle' some of the general misunderstanding and fears that novice researchers may have when undertaking new research enquiries whether regardless of your academic discipline.

Learning outcomes:

At the end of this session you will be able to:

1. Understand the nature and role of research
2. Distinguish between types of research
3. Understand how we produce valid and useful research

3.1: What is Research?

Broadly speaking, research is a systematic search for information about a topic or something of interest, i.e. a process of enquiry, discovery, revealing. Indeed, we carry out research almost everyday of our lives, even when we need to make simple choices like what to have for lunch!

Clearly, there is more in doing research than simply buying a sandwich for lunch. Research plays more complex roles in our everyday lives and as Veal (2011) points out there are a variety of people who are involved in research. Academics, Policy Makers, Non-for profit organisations, industry practitioners, managers, consultants, and students at various level are all involved in carrying out research projects, may these be small, large, paid or unpaid.

From an academic point of view, a straightforward definition of research is the one provided by Saunders, Lewis and Thornhill (2007, p. 5):

"Research can be defined as something that people undertake in order to find things out in a systematic way, thereby increasing their knowledge.

3.2: What is the Role of Research?

"The aim, as far as I can see, is the same in all sciences. Put simply and cursorily, the aim is to make known something previously unknown to human beings. It is to advance human knowledge; to make it more certain or better fitting . . . The aim is discovery. Elias (1986, quoted in Veal, 2011, p. 4)

This is a simple yet illuminating definition as it suggests that, irrespectively of the enquiries undertaken, research is always conducted with the intention of advancing knowledge on every aspect of our life. Whether to develop a vaccine against a disease (in the case of scientists) or modifying existing business models, and providing new applied solutions, research is about improving our knowledge and understanding of the complexities of human life and practices.

Doing research is not just collecting information with no clear purpose. Furthermore, research is not about reassembling and recording facts or information without interpretation. Research should be aimed at benefiting your community (many this be your organisation, or your university, other researchers like yourself), you and relevant society in general. In all instances, research should always be conducted in a professional and fair (ethical) manner that ensures no harm or discomfort is caused in the pursuing of knowledge.

In reviewing the definitions provided by Elias (1987) and Saunders et al (2007), two key points come to mind. Research is a systematic process and a practice that aims to advance knowledge. These are important ideas, as clearly research may have different purposes and roles. Research may be useful to understand earlier research projects or papers; to carry out academic or industry projects; to enhance, inform or change policy-making and other monitoring activities, to aid in decision making, etc.

Thus a good research is one where:

- There is a clear purpose and sense of direction
- Data has been collected systematically
- Data has been interpreted systematically
- There is potential for taking some form of action (whether modifying existing models/practices, or implementing new ones, etc.)

It must be noted that since research is useful for the advancement of knowledge; all researchers must show evidence of appropriate critical thinking, planning, executing and analysing skills. To this regard, both the research process and the research outcomes must withstand a rigorous scrutiny whether by academic, practitioners or employers.

3.3: The Research Process

Some people think of research as simply the collection of quantitative or qualitative data through interviewing, questionnaires or other methods. Primary data collection is an important part of most research studies, however there is much more involved before and after data collection. Whilst we will return to expand upon the research process; the model presented below shows the rigorous stages of critical thinking, planning, executing and analysing that researchers have to go through to provide outcomes that can withstand the scrutiny of peers and can be deemed as beneficial in advancing knowledge of a topic/subject, etc. This systematic approach to research is also known as the research process.

As you can see, before undertaking any form of primary data collection, researchers are asked to make particular choices in relation to how they will go about and do the research and later on reflect on these choices.

Some of these choices may be more practical than others (i.e. choosing a method vs. choosing a methodology etc.) but they are all fundamental in helping to produce valid and useful outcomes. Furthermore, they are all vital in helping researchers enjoying all stages of the process. It goes without saying that an ill-planned or badly formulated research, may lead to a considerable loss of time, loss of money and in serious cases to useless outcomes.

Interestingly, although the model shows a 'neat' step-by step process, in reality researchers soon find out that it is necessary to constantly move back and forth between stages and when needed repeat or refine them until they are satisfied with the decisions they are making in relation to the direction of their research. We will return to explore these concepts in depth later on in the course.

Finally, what the model also shows is that the term Methodology is not synonymous with the term methods. To use the two terms interchangeably is a common mistake that most undergraduate students do.

As Saunders et al (2007, p. 3) state: the term Methodology is used to refer to "the theory of how research should be undertaken"; whilst the term Methods generally refers to "the techniques and procedures used to obtain and analyse data". A critical discussion and justification of why one research method has been chosen over another is just one of the components of a methodology.

3.3.1: Methods v. Methodology

As Saunders et al (2007, p. 3) state: the term Methodology is used to refer to "the theory of how research should be undertaken"; whilst the term Methods generally refers to "the techniques and procedures used to obtain and analyse data". A critical discussion and justification of why one research method has been chosen over another is just one of the components of a methodology.

3.3.2: Control Measures & Criteria

Did you know? There are important mechanisms (also known as control measures or research criteria) that researchers can adopt to self check whether their research process and outcomes are both valid and useful. These measures may vary according to the type of research you are undertaking i.e. whether quantitative; a mix of quantitative and qualitative (commonly called mixed method research) or purely qualitative.

So for example if you were carrying out quantitative or mix-method research you would be generally expected to adopt the criteria of:

- Reliability criteria: Have you taken any steps to ensure your data collection techniques and analysis procedures will yield consistent results? And to what extent they will do so?
- Internal Validity criteria: Are your findings really what they appear to be about? Is there a causal relationship between your chosen variables and your findings?
- Generalisability criteria: (also known as external validity) can your findings be applied beyond the specific research setting? And to what extent? (**We would suggest reading Saunders, et al., 2009 for further information on this**)

Conversely, if you were doing qualitative research you may adopt the Research Trustworthiness criteria, (see Bryman, 2008 for a thorough discussion on this)

- Credibility criteria: How feasible and credible is your account (interpretation) when scrutinised by other researchers?

- Transferability criteria: Are your findings rich enough to allow the reader to make judgments as to their potential transferability to another research?
- Dependability criteria: Have you monitored and recorded all stages of research with a view on assessing findings reproducibility? And how?
- Confirmability criteria: Did you always act in a professional and ethical manner? This criterion asks researchers to reflect and comment about the need to act in good faith and demonstrate the steps they have taken to do so.

However, before we delve into these discussions further, it is important to refresh our knowledge on some key terms and concepts you will most likely encounter throughout your Research Methodologies studies. We will begin discussing the most common types of research.

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Types of Research:

At the risk of stating the obvious: there are different types of research. These are visually shown in the model below.

Type	Description	Example
Descriptive research	Describes a <u>phenomenon</u> , a situation or a problem by describing what is going on or what exists. As Veal (2011, p. 6) points out, descriptive studies are very common in service industries such as Tourism, Hospitality, Events and Spas because of "the relative newness of the field, and the changing nature of the <u>phenomena</u> being studied".	Imagine you wanted to find out how many people were at the Solstice Celebrations at Stonehenge this year, and in specific, how many males and females attended, how far they travelled, and whether they would attend again. Public opinion polls are used to describe the proportion of people who hold various opinions.
<u>Relational</u> research	Looks at the relationship between two or more variables. This type of research falls within the category of Explanatory studies. These are the ones that "move beyond description to seek to explain patterns and trends observed".	Imagine you were asked to conduct research at this festival to determine whether males or females attendees are more inclined to attend this event. In this case you would be studying relationship between two variables gender and attendance preference.
<u>Causal</u> research	Are studies that determine whether one or more variables cause or affect one or more outcome variables. This type of research also falls within the broader	Imagine you were asked to carry out an opinion poll to determine whether an event such as the one depicted above changed voter preferences. In this case you would be studying whether a

category of Explanatory studies.	particular event changed the proportion of voters who would vote for specific parties.
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(Source: Adapted from Saunders, et al, 2007)

Primary Vs Secondary Research:

It is also essential to remind ourselves that there is a difference between what are commonly known as:

Primary research activities:

Primary research refers to that type of research that involves the collection of original first-hand data (also known as primary data) specific to a research topic. In other words, it is research that you (or other researchers/companies, etc.) would go out and collect yourself.

Secondary research activities:

Secondary research is research which uses existing (hence secondary) sources of data. Examples of secondary sources include published works such as journal articles or books, but may also include radio or television documentaries, or conference proceedings. Secondary sources usually consist of information which has been "processed" in some way.

3.4: Quantitative v. Qualitative Research

The third distinction we must acknowledge is between [quantitative](#) and [qualitative](#) research. Whilst we will return to explore these concepts in greater details in the following sessions, for the time being it is important to acknowledge that:

Quantitative research generally provides you with a set of numerical data, which can be statistically analysed to determine whether a difference or relationship exist between variables of interest (e.g. gender and festival attendance; price and hotel booking, etc.). Both variables are normally measurable and can be converted into a numerical form.

Data collection using [quantitative](#) methods is sometimes seen as being a more precise method of data collection, however, other researchers may argue that it is not possible to be precise with humans and that the social situation is too complex for numerical description.

Qualitative research, on the other hand, captures qualities that are not [quantifiable](#) so cannot be reduced to numbers, i.e. feelings, thoughts, experiences etc. This type of research is associated with interpretive approaches to data collection and interpretation.

Where a [quantitative](#) researcher might seek to know what percentage of people do one thing or another, the [qualitative](#) researcher pays much greater attention to individual cases and the human understandings that feature in those cases. In addition to this, you would be more likely to see the use of words like "frequently" or "the majority of people" rather than precise figures.

Did you know? [Quantitative](#) research differs from qualitative research in the following ways:

- The data is usually gathered using more structured research instruments
- The results provide less detail on behaviour, attitudes and motivation
- The results are based on larger sample sizes that are representative of the population,
- The research can usually be replicated or repeated, given its high reliability
- The analysis of the results is more objective.

3.5: Conclusion

This session aimed to give you some initial grounding in research and begin unpacking some of the issues that researchers face when undertaking research enquiries. We hope it has stimulated some further thoughts and discussions.

Now return to the Blackboard course for this module. When you have marked this element of the unit as complete you'll find a quick quiz to test your understanding of the material that we've looked at in this unit.

References:

Both of these books are available as ebooks and accessible from the digital reading list within Blackboard.

Saunders, M., Lewis, P. and Thornhill, A. (2009) "The nature of Business and Management research" in Research Methods for Business Students. (3rd Ed) Harlow, Financial Times: Prentice Hall, pp. 2-19.

Veal, A.J. (2006) "Introduction to research: what, why and who?" in Research Methods for Leisure and Tourism. (3rd Ed) Harlow, Prentice Hall, pp. 1-18.

4: The Research Process

In the previous unit we had a brief look at the research process. As an example, we used a visual representation of the model produced by Gratton and Jones (2005). Amongst other things, the model nicely evidenced how a research methodology is just one aspect of the whole research process enabling researchers to move from topic formulation to the generation of new knowledge.

The research methodology is an essential research [component](#) and one that if not carefully designed and executed may lead researchers to gather data, which are not valid or useful (or both) among many other issues. However, in unit 1 we also stated that there is more involved before and after data collection.

This session aims to continue discussing some of the issues, which researchers face when they are attempting to define the scope of their research and how best to approach it.

Learning Outcomes:

By the end of this session you will be able to:

- Understand how to select and firm up your research topic
- Understand the role theory plays in the research question or [hypothesis](#) formulations
- Understand the basic [components](#) of a research methodology and how they fit in within the research process

4.1: Topic Selection

Selecting your topic is probably the most exciting and creative moment in the research process. However it is one that may take time as you need to refine your ideas with an aim of developing your working research question/s or your [hypothesis](#).

Topics may arise from different sources: from personal experience and personal interest; from something you have read in a newspaper, industry magazine or a journal article or from something you watched on TV or heard on the news. Topics may arise from a concern on broader [societal](#) and cultural issues or from specific industry problems. In some instances you may be tasked by an organisation or business to carry out research on a specific topic.

There is not such a thing as a good or bad research topic. As Veal (2011, p. 57) states it is all about "the way the research is [conceptualised](#) and how the research question/s are framed thereafter".

4.1.1: Building a Literature Review

A good way to firm up your topic, develop a tighter focus and begin to refine your research question/s or your research [hypothesis](#) is to start building a working literature review.

Students are sometimes confused when they are asked to build a literature review. This may be because the literature review is often not a task they would do in their jobs, or because they are unclear as to what the task [entails](#) and why it is worth doing it.

A literature review is a balanced and [impartial](#) critical evaluation of the literature relevant to a particular subject or research topic. This is a vital [component](#) of the research process and whilst it is eventually formally written up as part of the Independent Studies module's dissertation, you need to engage with it as soon as possible in order to understand the scope of your research topic.

A literature review is a critical assessment of recent and relevant literature published on a subject or research topic.

It follows that you need to engage with relevant reading, searching, sifting and sorting through a wide variety of up to date sources.

The more you read, the more you will be able to make informed judgments as to the usefulness of the sources you are accessing, their relevance to your topic and ultimately their relevance to the purpose of your research.

An obvious starting point in the search for relevant resources is the University Library. Books, journal articles, periodicals, electronic databases are just some examples of the resources you can access to begin building your literature review.

Mindmapping tips:

Building a literature (even as a working draft) may appear daunting and time consuming. We often find that going through processes of mind mapping it helps in refining your ideas and generate a tight research focus.

If you are unfamiliar with mind mapping techniques, it may be worth spending some minutes watching the following free video.

There are many applications that you can use to create a mindmap, the simplest being on

paper, or within a PowerPoint or word package. However, if you wish to create something using web tools, you may want to take a look at [Bubbl.us](#)

4.1.2: Assessing the "Do-ability" of your research

A further step that you can take towards the development of your research question/s or your research [hypothesis](#) is to begin assessing what we refer to as the "Do-ability" of your research. Is it possible both practically, and physically to undertake the project and can it make a simple contribution to knowledge? In other words: can you complete your research within the time you have available? Do you have the financial resources to support you throughout and will you be able to access the information you need from your research participants? In the "Do-ability" test we also include a question that is missed from many texts: "Am I really interested in the subject?"

Surprisingly, when we ask students why they are undertaking a particular piece of research, it is often because they could not think of anything else, or they felt they should be doing accountancy when they really wanted to undertake research into nightclubs.

It is important that you are passionate about your subject as you will be living with it for a considerable amount of time.

Developing the [Conceptual framework](#):

Once you have completed these stages you may be ready to develop a working [conceptual framework](#) for your enquiry.

A [conceptual framework](#) is defined by Miles and Huberman (1994, p. 18) as:

"a [framework](#) [that] explains, either graphically or in a [narrative](#) form, the main things to be studied- the key factors, constructs or variables- and the presumed relationship among them. [Frameworks](#) can be [rudimentary](#) or [elaborate](#), theory-driven or commonsensical, descriptive or [causal](#)."

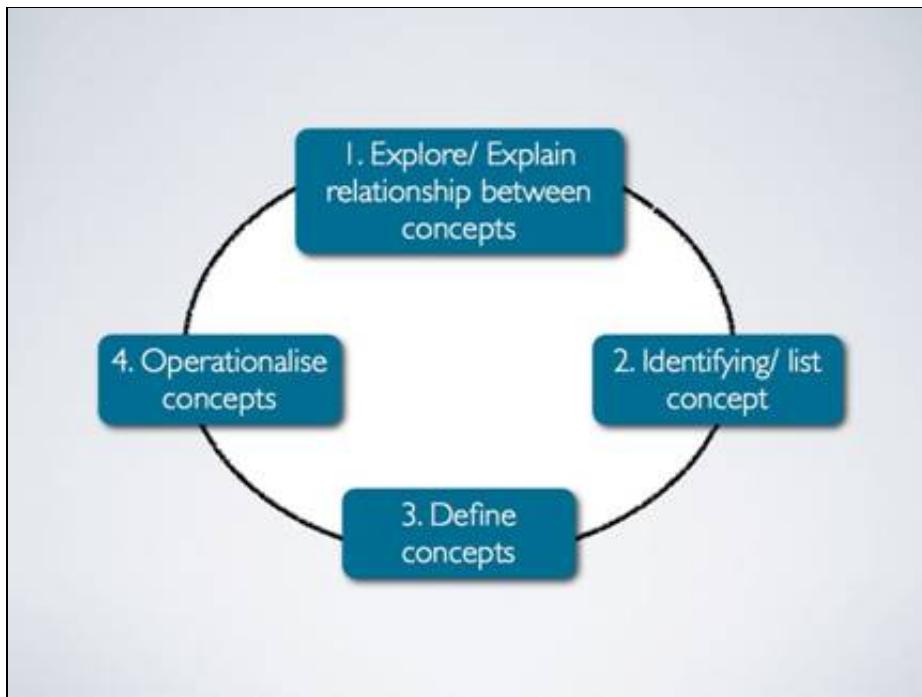
A [conceptual framework](#) is useful to summarise and [integrate](#) knowledge and concepts, provide explanation for [causal](#) linkages and generate research questions or [hypothesis](#).

It is important to note that at this formative stage the [conceptual framework](#) for your enquiry should only be conceived as temporary, and open to changes and amendments. As Veal (2011, p. 63) highlights "a conceptual [framework](#) need not be a straitjacket: it can be a flexible and evolving device."

A [conceptual framework](#) generally involves:

- An initial identification, and exploration of how a set of concepts (believed to be related to a particular topic) may link together
- A formal recognition of which concepts may form the "building blocks" of your enquiry
- A search for and provision of a definition for each of these concepts (for the research purpose)
- An identification of how these concepts may be measured, described or assessed (i.e. thinking in practice how you will gather information on these concepts)

This is shown in the model below:



The Development of a [conceptual framework](#) (Adapted from Veal, 2011, p. 64)

Once more, we find mind-mapping to be very useful at this stage as it helps you develop your ideas, identify variables, concepts relationships and other factors that may inform the development of your [conceptual framework](#). There are plenty of examples of how to develop a [conceptual framework](#), which are available in research methods books. For a good discussion we recommend you spend some time reading chapter 3 in Veal (2011) Research Methods for Leisure and Tourism. (4th Ed) Harlow, Financial Times: Prentice Hall, pp. 51- 100.

Theory and Research:

The single element that distinguishes academic enquiry or research from any other type of research is the relationship between theory and research. The way theory is generated and used varies significantly across academic subjects and disciplines and we will return to explore these issues further in the next session. However, what we can do at this stage is begin thinking about how we want to [utilise](#) theory in the design and structure of our research as the way in which you use theory directs the work and the subsequent design of the project methodology.

The most common view of the relationship between theory and research is reflected in the debates that surround inductive and deductive approaches to research.

4.1.3: Inductive and Deductive Theory

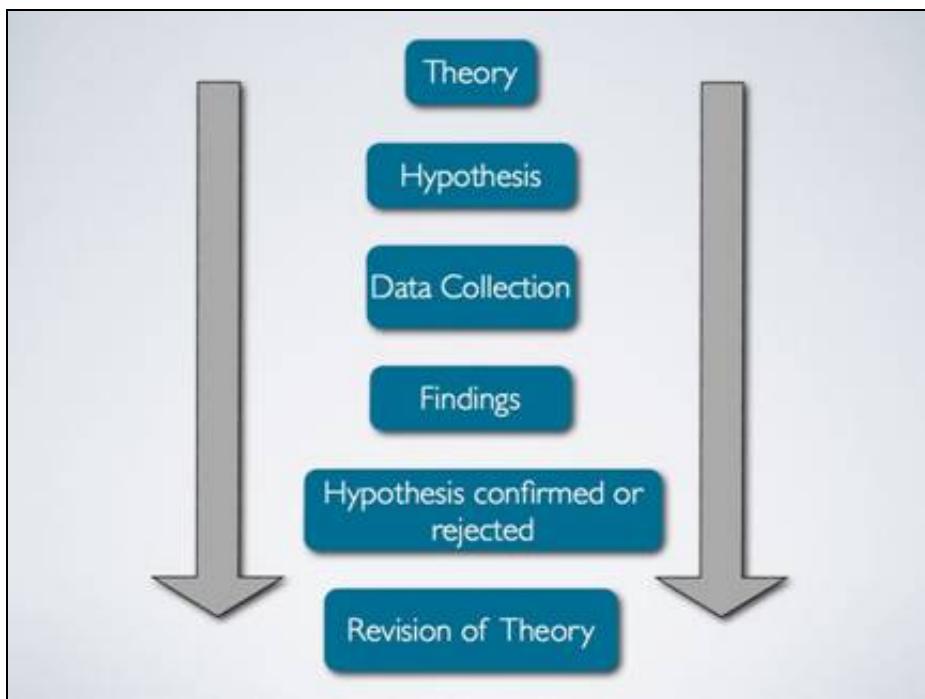
The process of deduction utilises existing theory to generate the hypothesis. Bryman (2004, p. 8) goes on to describe this process as follows:

The researcher, on the basis of what is known about in a particular domain and of theoretical considerations in relation to that domain, deduces a hypothesis (or hypotheses) that must then be subjected to empirical scrutiny.

An hypothesis is defined by Veal (2011, p. 72) as:

An informed assumption/speculation "expressed as a statement, which must be proved "true" (consistent with the evidence), or "false" (non consistent with the evidence).

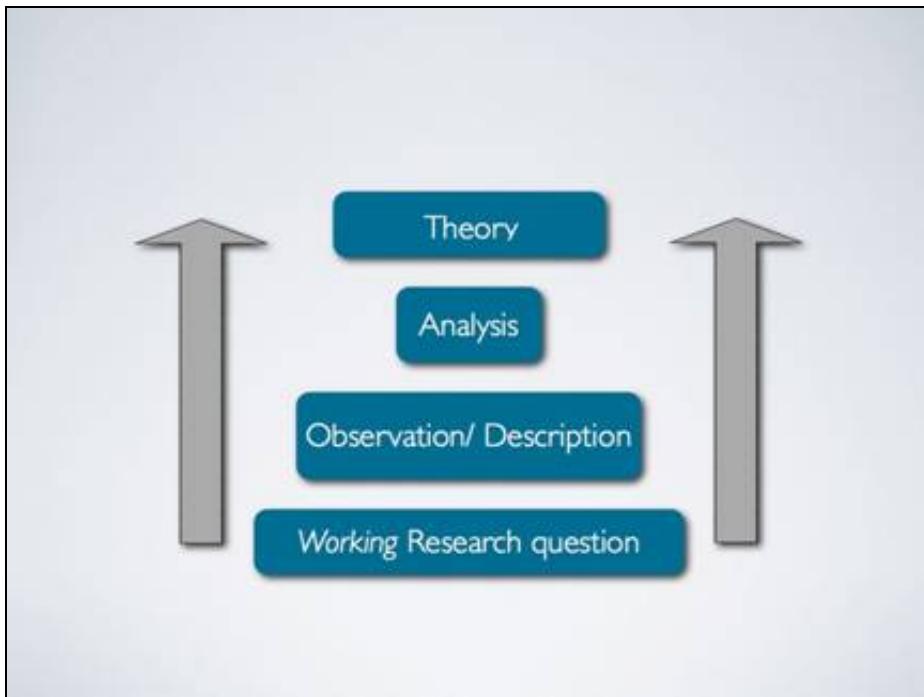
Embedded within the hypothesis will be concepts that will need to be translated into researchable entities.



The Process of Deduction (Adapted from Bryman, 2004, p. 9)

Conversely, inductive research recognises that theory will emerge from the data gathering and analysis process. As such rather than producing hypothesis, researchers will generate a working research question (or many), which will be open to amendments as the study progresses.

The research process is a dynamic one and as such the research question often develops as the project becomes more focused or wider in its approach. Indeed it may be argued that the research process itself generates questions.



The Process of Induction (Adapted from Bryman, 2004, p. 9)

Therefore, the first research approach is aimed at testing existing theories and is generally associated to quantitative research. The other is aimed at generating theory for a particular instance or circumstance in time by drawing general conclusions from empirical observation. This latter is typically associated to Qualitative research (Bryman and Bell, 2003).

4.1.4: Developing the Research Question or Hypothesis

Bryman (2004, p. 33) identifies the following considerations that should be utilised when developing research questions or hypothesis:

- Be clear
- Be researchable
- Connect with established theory and research
- Be linked to each other
- Have potential for making a contribution to knowledge
- Be neither too broad or too narrow

Re-assessing the viability of your research:

Once you have generated your research question/s you need to re-assess the viability and applicability of your research project. Denscome (2003) fortunately provides us with a more formal assessment of the key decisions that should inform the viability of your research. He states that you should be able to provide answers to each of the questions shown in the table below. If you cannot, you need to return to the early stages and continue refining your enquiry.

Once you have answered these questions, you can then move on to begin to design your research methodology which allows you to complete your enquiry.

4.1.5: Next Steps

The remaining topics in this module are specifically developed to help you in this process, it is worth spending a few minutes introducing some of the steps you will need to undertake after you have set a research question or a hypothesis. You may think of this section as a "sneak preview" of what is to follow. We prefer to think of it as a preparatory section and one that should help you contextualise some of the key concepts we have been discussing so far.

In simple terms, a research methodology design entails thinking about which strategies, research designs and methods you will use to undertake your enquiry and to make sure the outcomes are valid, useful, reliable and fair towards all of the people that have been involved in your research.

The way in which you design your research methodology is key to the success of your research and should reflect the decisions and priorities identified in the earlier stages.

We already provided a definition of what a research methodology is, so you should now be familiar with the thought that a research methodology is not synonymous with the term method.

We want to present here one more definition that we hope will further enhance your understanding of the term.

According to Collis and Hussey (2003, p. 113) a methodology is:

"The science and art of planning procedures for conducting studies so as to get the most valid findings"

The reason as to why we like this definition is because in the authors' eyes a methodology is both a rigorous (scientific) process and a unique, creative (and artistic) one.

Although there are specific components of a methodology you need to be familiar with and use, no research methodology design is the same. Three researchers researching the same subject will probably design different methodological approaches.

What matters is that the research methodology you design should be able to withstand scrutiny by other researchers or examiners. This means providing justifications for the choices you make and having the ability to "defend" your findings as legitimate.

The research methodology components:

In choosing and designing a methodology there are a few choices to consider and make. Some of them may be more practical than others but they are all needed to support your research completion.

Broadly speaking, these decisions will involve an ability to:

- Position and justify your research within a philosophical tradition
- Choose and justify your research strategy and approach from the range of strategies and approaches available
- Choose and justify your research design from the range of designs available
- Choose and justify your methods selection from the range of methods available
- Justify the criteria for your participants' selection
- Explain the ethical choices you have made to ensure the welfare of all those involved in your research
- Rigorously present and interpret the data collected and defend the validity and usefulness of your subsequent analysis

These choices will be clearly guided by your research question or hypothesis and the subsequent aim and objectives of your enquiry.

4.2: Research Strategy & Approach

In general, the research strategy you incorporate within your project will depend upon your academic discipline's philosophical orientations. We will discuss this in the next unit.

At the most simplistic level it is a matter of deciding to adopt a qualitative or quantitative research strategy or a mixture of the two and whether you will be adopting an inductive or deductive approach to theory generation.

The decision making process should be guided by how well the strategies and approaches meet the focus of the research project. Simplistically the characteristic distinction between Quantitative and Qualitative research strategies may be defined as:

Quantitative research:

- Emphasises quantification in the collection and analysis of data
- Utilises a deductive approach where the emphasis is placed on the testing of theories.
- Incorporates the practices and accepted norms of the natural scientific model and of positivism
- Social reality is viewed as an external and objective reality.

Qualitative Research:

- The emphasis when collecting and analysing data is placed upon words rather than quantification.
- An inductive approach is adopted where the emphasis is placed on the generation of theories
- Rejects the practices and norms of the natural scientific model and places the emphasis on the way in which individuals interpret their social world.
- Each of these strategies is explored in some depth later in the module.

4.2.1: Research Design

Once you have located your research within the strategies and approaches it will be possible to further define and scope your research methodology.

There exists numerous established types of research design, and deciding to utilise an inductive or deductive approach and a qualitative, quantitative or mixed method research strategy will help you to identify the correct design to adopt.

However, choosing a research design is not as simplistic as this, as you need to examine other

factors that may be involved in the design of your methodology. These include practical considerations such as time, money, your research skills, and the easiness of accessing research participants amongst many others; as well as considering how you ground your work philosophically.

For the time being, the available approaches may be simplistically placed in into five categories:

1. Experimental designs
2. Cross sectional designs
3. Longitudinal designs
4. Case study design
5. Comparative designs

However, please note that each of these categories have numerous sub-categories within them, each supporting different approaches and outputs. We will return to discuss research designs in more detail later on in the module.

4.2.2: Research Ethics

We would like to end this session by briefly discussing the importance of Ethics in research. Whilst we will return to examine Ethics in more detail later, it is important at this stage to understand that the research process and the final outcomes produced should not only be useful and valid, but also ethical.

What is Ethics?

Ethics is about a set of norms, principles and procedures for code of conduct that help us distinguish between what is right and what is wrong. The following of these norms should rationally guide individuals (and researchers) in deciding what to do and how to behave in particular situations (i.e. not lying, stealing, cheating, killing, etc).

As Saunders et al (2009, p. 183-184) point out "Ethics refers to the appropriateness of researchers' behaviour in relation to the rights of those who become the subject of the researcher's work or are affected by it".

How we:

- Formulate the research topic
- Clarify the research topic
- Design the research questions
- Collect Data
- Process and store data
- Analyse data
- Write up research outcomes

It is important to remember that the entire research process should be governed by ethical considerations.

Conclusions:

These two sessions have been designed to help you familiarising with some of the issues, which researchers face when they are attempting to define the scope of their research and how best to approach it. Additionally, we have made the first steps towards understanding how to build a research methodology and the issues to consider. **The next unit will develop your understanding of the philosophical elements that inform and underpin the research methodology. This will enable you to locate your work within a particular philosophical tradition.**

Recommended Reading:

Veal, A. J. (2011) "Starting out, research plans and proposals" in Research Methods for Leisure and Tourism, a practical guide. (4th Ed) Harlow, Prentice Hall, Financial Times, pp. 51-100.

Saunders, M., Lewis, P. and Thornhill, A. (2009) "Formulating and clarifying the research topic" in Research Methods for Business Students. (3rd Ed) Harlow, Financial Times: Prentice Hall, pp. 20-56.

4.3: Conclusion

Within this unit we have started to look at the process of research and given some thought to how we might want to start to plan our own research. There are a number of activities that you can undertake that will help you to start thinking about a possible research topic for Assessment 1B and 1D (the research proposal and research paper).

4.3.1: End of Unit Activities

What are research questions?

- Research questions are questions that you would like to address or try to answer during your research. They highlight exactly what it is you want to find out.
- Good research questions show your ability to identify appropriate issues to investigate. They guide your research and help you to write your questionnaire. In your conclusion you should reflect on the extent to which you have been able to answer these questions.
- In a research project, you may have one or two main research questions with one or two minor ones.
- Research questions focus on what you want to find out from your research.

Where should you present your research questions?

Your research questions may be included in the text of your report. Alternatively, they may be rephrased as statements which express the aims of your research. It is important that you include research questions or a statement of your aims in your introduction so that your reader has a clear idea of the focus of your work at an early stage.

Task:

Look at the following extracts from an introduction to an authentic research report and try to identify the research question. (Skim read the extracts first to understand the gist and then go back and read more closely).

Project Title: Using a shared workspace and wireless laptops to improve collaborative project learning in an engineering design class

Authors: David J. Nicol and Iain A. MacLeod

Centre for Academic Practice, University of Strathclyde,
Scotland, UK

Department of Civil Engineering, University of Strathclyde,
Scotland, UK

1. Introduction

Across most disciplines in higher education there has been a growing interest in collaborative learning using group projects. Group projects normally involve students working together over a period of time in order to complete a complex and open-ended task. This requires that members of the group plan, negotiate and co-ordinate their activities and share information and resources. Research has shown that such collaborative activities can be beneficial to individual learning.

In recent years, computer-based systems have been harnessed to support collaborative learning in higher education. There is also research interest in the different ways that computer technologies might mediate and support collaborative learning. For example.

The study reported in this paper extends this body of research by investigating how the application of two different computer technologies, groupware and shared laptops with wireless access, might be used to support resource sharing and group collaboration in a Civil Engineering project design class in higher education. The paper begins with an explanation of why the department decided to introduce these supportive technologies into the project design class.

Narrowing down research questions

It is likely that you will start with quite general questions which you may need to refine as a result of thinking and discussing with your peers. You could use the module discussion forum as a place to exchange ideas.

Reflecting on your own research question(s)

Now reflect on your own research topic and try to write down a few sentences in response to each of these questions or instructions.

What general area are you interested in?

Write down an overall research question you would like to address in your research.

Identify ways in which you may need to narrow this down.

Write a more specific research question with some subsidiary questions if necessary.

You have now got the beginnings of a research proposal.

5: Qualitative Research Methods

This unit considers qualitative research as a methodology for studies at post-graduate level. It begins with a discussion and critical examination of issues of Context, Philosophy, Approach, and Design, necessary for writing a methodology chapter and in preparing to undertake research at this level.

Learning outcome:

At the end of this session you will be able to:

Design, and critically evaluate the theoretical underpinnings of a qualitative research methodology specifically to deal with issues of context, philosophy, approach and design.

A word of caution: We argue that if conducted in a rigorous and robust way, qualitative research can make a meaningful contribution to knowledge in the sciences. However, we should acknowledge up front that there are some risks and challenges facing the researcher adopting this methodology. Some positivistic researchers are dismissive of the methodology, mostly on grounds of the validity of the approach and consequently the reliability of the findings. There are arguments that the methods are non-scientific, open to personal opinions, biases, and subjective interpretations. These are all challenges that the qualitative researcher will have to face as well as developing ways to counter such issues.

5.1: The context of qualitative research

"Not everything that counts can be counted. Not everything that can be counted, counts"
(Albert Einstein, 1879-1955)

There has been a major growth in qualitative inquiry within social sciences over the past two decades. Phillimore and Goodson (2004) suggest a tripling of papers and find evidence of significant growth in academic texts and across disciplines.

The characteristics of qualitative research are:

- Social context, that is this type of research which is interested in people, behaviour, organisations, and the environment
- Depth, meaning, in social settings
- Not conducive to experiments within controlled environments
- Not conducive to testing of pre-determined hypothesis

Qualitative Research Philosophy:

A discussion on the research philosophy usually commences with a consideration of two opposite research perspectives (or sometimes referred to as paradigms), positivism and interpretativism. These two philosophical paradigms can be conceived as two contrasting extremes, visualised as a sort of a continuum with positivism at one extreme and phenomenology at the other. Saunders et al (2009) illustrate these concepts in the form of a Research Onion model, where choosing a research philosophy represents the first important stage in constructing a research design (before peeling back further layers of the onion to construct the research). The model clearly implies that although there are two extreme philosophies there may also be positions inbetween, and it may be that individuals have a research perspective somewhere within the scale (rather than at the extremes).

Positivism is based on the assumption that there is an objective truth (a reality) existing in the world which can be revealed through the scientific method where the focus is on measuring relationships between variables systematically and statistically. As quantification lies at the heart of scientific methods, the key concerns are that measurement is reliable, valid and generalisable. Within this reasoning, positivism is the underpinning philosophical paradigm of quantitative research.

In contrast, interpretativism is largely concerned with words and meaning arising in social contexts. There is an assumption that there is no single objective truth or reality, rather that relationships are socially constructed, and rely on the subjective interpretations of the actors. Or as Fryer (1991, p. 3) presents:

"Qualitative researchers are characteristically concerned in their research with attempting to accurately describe, decode, and interpret the precise meanings to persons of phenomena occurring in their normal social contexts and are typically pre-occupied with complexity, authenticity, contextualisation, shared subjectivity of researchers and researched and minimisation of illusion". Thus, interpretativism is the underlying philosophical paradigm of qualitative research.

The following model shows you the differences between the two types of research and in relation to the paradigm.

Differences between quantitative and qualitative research:

	Quantitative	Qualitative
Principal orientation to the role of theory in relation to research	Deductive, discovering, testing and verification of theory through application of criteria. <i>Etic</i>	Inductive, generation of theory through observation, exploration and description of phenomena; alternative criteria. <i>Emic</i>
Ontological orientation	Objectivism	Constructionism
Epistemological orientation	Natural science model, positivism and detached researcher	Interpretativism, value-laden researcher
Methods used	Structured interviewing; self completion questionnaires; structured observation; content analysis; secondary analysis of official statistics.	Bricolage, arrays of different methods to fit the research

(Adapted from Bryman, 2004, p. 40)

5.2: Subjectivity & Social Construction

We can see from the table on the previous page that designing a qualitative methodology will present some issues and challenges for the researcher. With quantitative techniques there are clear rules and statistical procedures which can be followed to produce objective and generalisable findings. Qualitative research however, has to tackle issues of 'subjectivity', and 'social construction', which are concepts far more difficult to pin down with simple rules and procedures, and where results may be more open to 'interpretation'. As Miles (1979, p. 591) writes:

"The most serious and central difficulty in the use of qualitative data is that methods of analysis are not well formulated. For quantitative data there are clear conventions the researcher can use. But the analyst faced with a bank of qualitative data has very few guidelines for protection against self delusion, let alone the presentation of unreliable or invalid conclusions to scientific or policy making audiences. How can we be sure that our findings are not in fact wrong?"

These issues lead us to the important areas that qualitative researchers must tackle, namely validity and reliability. According to Miles et al (1994) the task for the qualitative researcher is to build in robustness (will the design stand up in different and difficult situations) and rigour (will the design demonstrate comprehensive attention to detail) into the research design. This will involve careful attention to planning, data collection, data analysis and presentation.

In quantitative based studies a key objective is often to design the study to precise statistical rules so that results from samples can be generalised to a wider population. In qualitative research this can not be claimed. Results are subject to interpretation. The real value of qualitative research according to Thomas (2004: 131) lies not in generalisation but in particularisation. In other words the richness and knowledge derives from understanding a particular situation or case, in greater depth.

Earlier we have already addressed the measures (trustworthiness criteria) that qualitative researchers can adopt to counteract these issues. Here we want to momentarily focus on the issue of Bias.

Bias refers to the extent to which the researcher or researched may seek to influence the process of data collection, analysis, and findings. So questions for the qualitative researcher must also be concerned with:

- How do we make and demonstrate that the results are credible and valid (to what extent do our findings present a true picture of the situation)?
- How can we be sure that if the same research was carried out independently by different researchers, similar results would be achieved?
- How do we identify and eliminate our own and others personal agendas, preferences, and biases, to find the truth?

So far we have presented that qualitative research is broadly aligned with the philosophy of interpretativism, that this follows epistemological principles such as social construction, inductivism, and subjectivism. Furthermore is based on the ontological assumptions that there is no single reality. The implications for the research process are now examined with a look at the approaches to research.

5.3: Inductive v. Deductive Approach

The table below illustrates the two contrasting approaches of deductive (sometimes described as theory then research) and inductive (research then theory).

Stage	Deductive process	Inductive process
1	Theory	Theory
2	Hypothesis	Themes and factors
3	Data collection	Data collection
4	Findings	Analysis and findings
5	Accept or reject hypothesis	Conclusions
6	Generalise findings / theory	Develop theory / not generalisable

(Source: adapted from Saunders et al, 2009)

Both processes normally begin with a review of current theory. In the context of developing a post-graduate research, this is the review of literature and other data, with a view to determining current theory but also to identify trends and importantly gaps in knowledge. Within the deductive approach research will flow from developing a single hypothesis or multiple hypotheses. Often such studies will seek to establish cause and effect relationships between data variables. Statistical tests or controlled experiments follow, with a view to confirming or rejecting the hypothesis. Following statistical protocols enables the researcher to present conclusions which claim to be predictive, or generalisable to a wider population (from the results of the sample).

Within the inductive approach the process assumes that the outcomes from the theory review will provide a focus on the nature and understanding of the subject. Themes and factors may emerge that are identified as important (often referred to as critical factors) and these form the basis for the research. The emphasis is on depth and understanding in social contexts, not statistical measurement of relationships. Data collection often proceeds in the form of interview and observation techniques (structured or semi-structured around emerging themes and critical factors).

We have presented that in qualitative research the research objectives and research questions emerge from a detailed review of literature and secondary data, in the form of themes and critical factors, and an awareness of gaps in knowledge. Research questions in qualitative studies will be concerned with depth, meaning and understanding in social contexts and will follow an inductive approach, within an interpretive philosophy.

5.4: Research Designs

To begin with, it is important to remember that whilst the choice of a particular philosophical orientation and approach is the key driver for the overall methodology; this decision alone will not get you very far!

As Guba and Lincoln (1998) remind us your methodology needs to be further clarified in relation to the research design and the research methods or techniques you will use to collect empirical data.

Research designing is about choice:

- To determine an appropriate strategy
- And select appropriate instruments (methods) to answer the research questions.

Sometimes referred to as research strategy (Saunders et al. 2009); a research design is: "the framework or structure that guides the collection and analysis of data" Bryman, 2004, p. 27)

A research design will:

- Demonstrate that the research will produce valid and credible conclusions that flow logically from the evidence gathered;
- Clarify the framework for the benefit of the audience;
- Ensure that the research will be of value in terms of intellectual credibility, external accountability, coherence and rigour;
- Become an operational plan for the execution of the research, (adapted from Davies, 2006 p. 265-266).

Research designs typically encountered in research:

Remember that it is possible to broadly identify five research designs, which are available to both quantitative and qualitative researchers (Bryman, 2004).

These are:

- Experimental designs (as to include quasi-experiment and correlational studies)
- Cross-sectional designs
- Longitudinal designs
- Case study design
- Comparative designs

Before we move on to examine each of these research designs in more detail, it is important to remember that:

These research designs should not be thought of as mutually exclusive (Creswell, 2006 and Saunders et al. 2009).

Each of them have specific advantages and disadvantages.

As Denzin and Lincoln (1998) point out the features of each design should be carefully weighted and considered in relation to:

- The research question
- The paradigmatic stances taken by the researcher
- And by who and what will be studied

What follows is an introduction to the basic characteristics of the different research designs.

Within this framework, it is important to note that there exist many more designs not included in this list and in real life, many studies may combine the use of several research designs or they may contain elements not included below.

5.4.1: Designs in Detail

Experimental designs:

Experimental designs are typically encountered in quantitative social research. As such they will be discussed in greater detail later in the course.

Cross-sectional design:

Typically encountered in quantitative and qualitative social research enquiries; A cross-sectional design measures some aspect or behaviour of groups or many individuals and at a single point in time (i.e. data are collected simultaneously and provide a snapshot).

Researchers who use this design are generally interested in examining variation between variables. So for example it might examine groups of different people who belong to different age groups as a means of studying their behaviour towards drinking. These studies can usually be done more easily, quickly and cheaply than longitudinal studies but the resulting data may be of lower quality. With a cross-sectional design it is only possible to observe relationships between variables (not causal relationship) and it is not possible to measure change of behaviour over time.

Longitudinal design:

Typically encountered in quantitative and qualitative social research enquiries. A longitudinal study is one that follows a group of the same people across a long period time, e.g. over the life span. The behaviour of these individuals is observed and/or measured at several intervals over time in order to study the changes that may occur in their behaviour as they age or change. Longitudinal studies may cover a short time, such as a few weeks, or a long time, such as the entire life span. Longitudinal studies may be combined with other approaches such as correlational studies (e.g. in work related contact dermatitis), but the defining characteristic is that the same people are studied repeatedly across time.

Case Study design:

Typically encountered in quantitative and qualitative social research enquiries. A case study is a research design that involves extensive study of one or more (only a few normally) individuals or cases (i.e. organisation; event; community). The data that is collected may include: watching aspects of their behaviour or of the setting; interviews with participants and record searching. Case studies may be retrospective (looking for existing information) and/or prospective (collecting data looking for the outcome). Saunders et al (2009) provide a very good discussion on this design and the various types of case studies that a researcher can design.

Comparative designs:

This design is useful when examining two contrasting cases. This design is useful when examining two contrasting cases using more or less identical methods. It embodies the logic of comparison in that it implies that we can understand social phenomena better when they are compared in relation to two or more meaningfully contrasting cases or situations.

5.5: Conclusion

This unit has presented the main underpinning theory for composing a research methodology based on qualitative methods, in particular dealing with issues of context, philosophy, approach and strategy. It has been argued that qualitative research is relevant and important and growing within social sciences which are largely concerned with people and institutions in social contexts.

We have presented that qualitative research aligns with a philosophy of interpretativism; epistemologically it is interpretive in nature, socially constructed,

inductive and subjective, and ontologically it implies that there is no single truth or reality. This presents the qualitative researcher with challenges in dealing with issues of reliability, validity, and bias within the research design.

We discuss the inductive approach associated with qualitative research and finish with some suggested research designs. Session 5 and 9 will go on to consider practical application of qualitative research designs looking further to issues of data collection, analysis, and presentation.

Recommended Reading:

Some useful readings that support this unit are identified here.

Lapan, Quartaroli & Riemer. **Qualitative Research** (accessible from the digital reading list) Chapter 4 will provide you with a good overview.

Saunders, Lewis & Thornhill. **Research Methods for Business Students** (accessible from the digital reading list). Chapter 4 provides a good discussion of deciding on a research approach and choosing a research strategy.

6: Quantitative Research Methods

Introduction:

This unit considers quantitative research as a methodology for studies at post-graduate level. Similarly to session 4, this unit begins with a discussion and critical examination of issues of Context, Philosophy, Approach, and Design necessary for writing a quantitative methodology chapter and in preparing to undertake quantitative research at this level. Furthermore, questionnaires are also discussed here as the most commonly used research techniques (methods/ tools) within quantitative research.

Learning outcome:

At the end of this session you will be able to:

- Design, and critically evaluate the theoretical underpinnings of a quantitative research methodology specifically to deal with issues of context, philosophy, approach and design.
- Appreciate key issues in questionnaire design.

Quantitative Research:

Quantitative research concentrates on measurements. It involves collecting and analysing objective data that is normally numerical and can be organised into statistics.

Quantitative research is simply research that involves numbers so is thus concerned with the quantity or measurement of some phenomenon by quantifying (measuring or counting) the phenomena into numbers. It is a more positivistic or post positivistic approach that subscribes to an empirical approach to knowledge, thus if things/aspects/phenomena are measured

accurately enough scientists are able to make claims, with certainty. Quantitative research uses the hypothetic-deductive approach to acquiring knowledge.

This type of research tends to be conducted under controlled conditions, often in climate-controlled laboratories, in order to produce results that are as objective and unaffected by external factors as possible. Quantitative research is predictive rather than descriptive and uses experimental methods and/or structured questionnaires or observations with large sample sizes.

Differences between Qualitative and Quantitative research:

The purposes of quantitative research can be categorised as:

Qualitative Research		Quantitative Research
Also known as	interpretative / responsive (usually) inductive	positivist /hypothetico-deductive (usually) deductive
Type of reasoning	identifies concepts	identified concepts and investigates relationships
Link with concepts	sometimes only describes a situation BUT in action-research openly intervenes	tests relationships between concepts
Action	illuminates the situation	accepts or rejects proposed theory
Outcome	truth seen as context bound (socially constructed)	truth seen as objective
Approach to validity		

1. Description (which is *fact finding*)
2. Exploration (*looks for patterns in data*)
3. Analysis (*tries to explain why or how*)
4. Prediction (*forecasts the likelihood of particular events occurring*)
5. Problem Solving (*improvements in current practices*)

6.1: Key Elements of Quantitative Research

Before moving on to discuss the research designs available to quantitative researchers, it is worth spending some time defining some of the terminology and concepts used in quantitative research.

Hypothesis:

A hypothesis is a specific testable statement that predicts what you expect will happen in a study. It is derived from a theory. You need to formulate two hypothesis statements:

Experimental (alternative) hypothesis (H1)

This is a statement made by theory of your prediction, i.e. variable A will affect variable B.

E.g. there will be an effect of training technique on performance.

The Null Hypothesis (H_0)

This is a negation of the theory, and states that there will be no effect, i.e. A will not affect B.

E.g. there will be no effect of training technique on performance.

Hypotheses may/may not indicate a direction you expect the effect to occur.

One tailed

Your prediction specifies a direction so there will be an effect... and it will be in a particular direction.

E.g. "There will be an effect of training technique on performance such that participants who receive training technique A will have a higher score than those who receive training B".

Two tailed

Your prediction does not specify a direction so there will be an effect but it does not state the direction of the effect.

E.g. "There will be an effect of training technique on performance scores".

Variables and attributes:

A variable is any entity, property or characteristic of some event, object or person that may have different values at different times depending on the experimental conditions. Anything that can vary can be considered a variable. For example:

Age can have different values for different people or for one person at different times.

Country as this can be different and be assigned a value.

Variables are not always quantities, i.e. numerical, they could be categorical, i.e. gender of male and female. We can assign values to categorical variables in order to analyse them statistically.

An attribute is a specific value for a variable. E.g. the variable gender has 2 attributes, male and female. Even a variable like 'agreement' has attributes: strongly agree, agree, no opinion, disagree, strongly disagree. These can be assigned values:

1 = strongly disagree; 2 = disagree; 3 = no opinion; 4 = agree; 5 = strongly agree

Experiments involve controlling, measuring or recording things that vary, variables and attributes.

There are 3 different types of variables:

Independent variable is what you manipulate, so could be a treatment, program, or cause. It is something that is systematically varied by the researcher to determine the effect it/they may have on another variable. It is called independent as it is manipulated independently from changes in the other variables.

Dependent variable is what is affected by the independent variable and is something that is measured or recorded by the researcher. The amount it varies is dependent on variations in the independent variable.

Example:

Listening to classical music improves performance in maths.

Independent variable: Music or no music

Dependent variable: Performance in maths

Confounding variables occur when there is a simultaneous variable to the independent variable that could be causing the effect seen in the dependent variable. CVs are unwelcome as they cause problems when the researcher is trying to draw conclusions about the findings as the research cannot be sure that any effect observed on the DV is attributable to the IV (because it might be attributable to the CV).

There may be more than 1 Independent Variable: the researcher may want to manipulate more than one variable.

The researcher may want to measure more than one dependent variable.

Confounding Variables

There may be other factors besides those you are testing that could also affect the outcome of the study. Factors the researcher did not take into account but that may affect the end result are called Confounding Variables.

Whenever you are designing a research study you should not only think about the Independent and Dependent variables but also think about what else could potentially have an affect and cause the result obtained. If you overlook these confounding variables the conclusions drawn may be unreliable.

Many studies are done under laboratory conditions in order to control for the confounding variables as much as possible, however, not all studies can be done under strict laboratory conditions. For this reason, we need to find some other ways of reducing the effects of the confounding variables.

Potential confounding variables can be controlled for by using one or more different techniques that should reduce the influence an extraneous variable may have.

McNicholas and Collis (2002, cited in Dancey and Reidy, 2004) compared the number of social encounters people had while walking a dog with those without a dog and found that people with a dog had significantly more social encounters than those without a dog. After thinking about this for a while, can you think of anything else that may affect the result besides the presence of the dog?

Answer:

Other factors may have affected the results, such as the shyness of the walker, attractiveness of the walker, the gender of the walker, the breed of dog and probably a lot more.

Example:

If one group is mostly female participants and the other group mostly male participants, gender may have a differential effect on the result. So you may not know whether the difference seen was due to the treatment or the effect of gender.

6.2: Quantitative Design

Research design is very important as it provides the structure of the research showing all the main parts of the study: samples (groups), measures (DV), treatments (IV) and the methods that will address the research question(s). You need to understand the relationships between different research designs as this will help you choose which design will work for your hypothesis. This involves thinking about the advantages and disadvantages of the different designs. This section will only deal with the quantitative research designs.

The main quantitative designs are:

- Experimental (True)
- Quasi-experimental
- Non-experimental
- Main types of quantitative research designs

Experimental Research	The causal effects of phenomena are tested on one group by comparison with a control group which is otherwise similar but upon which the phenomena is not allowed to act.
Quasi-Experimental Research	Causal effects of phenomena are investigated in a way similar to experimental research BUT full control are not possible
Non-Experimental Research	The investigation of conditions as they really are without an attempt to change any of them - at least while the research is in progress.

(Adapted from Trochim and Donnelly, 2008).

As stated in our unit on qualitative research, these can be combined with other research designs (i.e. longitudinal, cross-sectional, case study, comparative).

The main factor that will influence the choice of research design is the type of effect you are trying to measure, i.e. whether there is a difference of a particular between the groups or you might be trying to see if there is a relationship between two variables.

Experimental design:

An experimental research study it is used to determine cause and effect. The causal variable is the independent variable (IV) and the effect/outcome variable is the dependent variable. This type of research allows the researcher to identify a causal relationship as the result is observed after systematically changing one or more variables under controlled conditions.

Quasi-experiment design:

This type of research is similar to an experimental design but the participants are not randomly assigned to the groups. This normally occurs when it is impossible to randomly assign participants to the comparison groups. Like true experimental research there is manipulation of the independent variable. They are also used when it is not possible to control for all the potentially confounding variables.

Non-experimental design:

In this type of research the independent variable is not manipulated as it is in experimental and quasi-experimental groups, the independent variable has already occurred and the researcher has no control over it or due to ethical reasons.

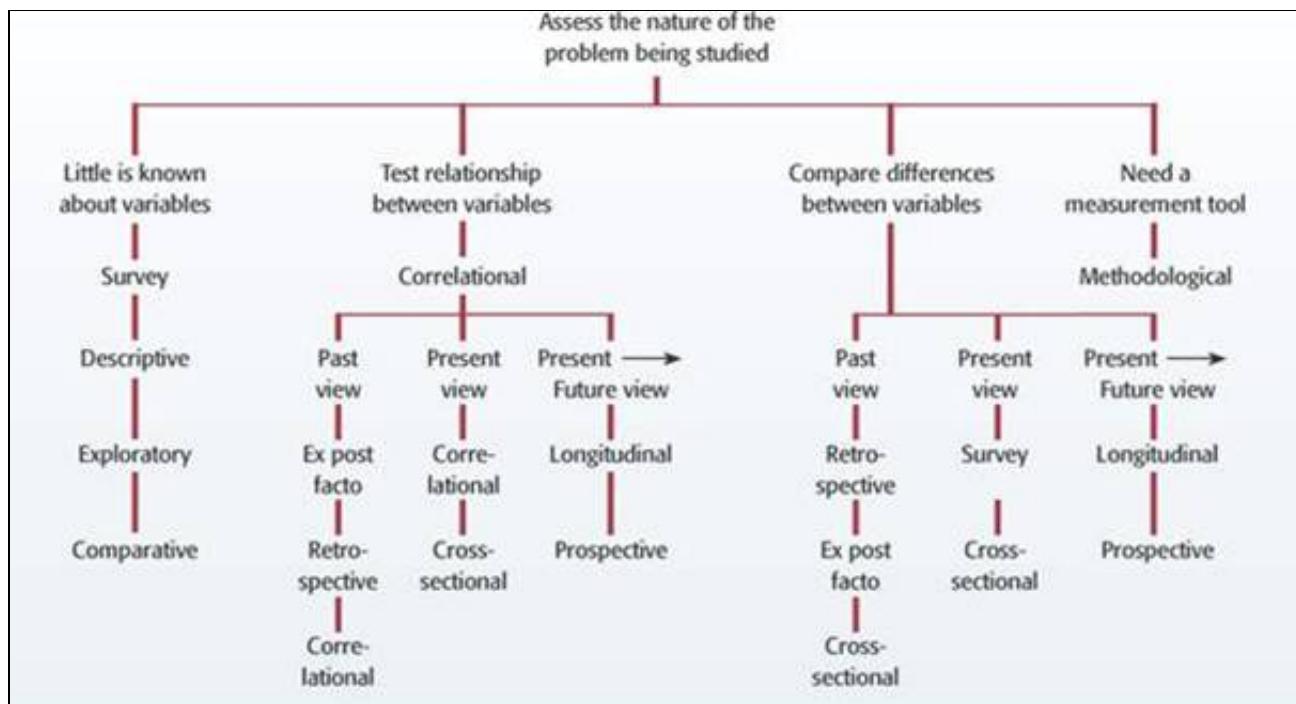
The classic experiment is that the participants are selected and then one group has the treatment applied. In non-experimental design no treatment is 'applied' to an untreated group and then a difference observed, rather two existing groups are measured for differences in a

particular phenomena.

It may be that the variable to be tested cannot be applied due to ethical reasons, or just not possible to carry out. It may be that it is more realistic to explore the phenomena in a more natural manner. In most texts this type of study is not covered even though in practise it is very common.

The main non-experimental research designs are classified as either descriptive or correlational.

Different types of non-experimental research studies:



(Source: LoBiondo-Wood and Haber, 1994).

Descriptive studies:

This is the broadest category and is carried out through detailed observations, descriptions and documentation of existing variables through questionnaires. Little is normally known about the phenomenon and this method is used as an initial 'trawling' to find possible answers.

Descriptive studies attempt to describe what actually exists, determine the frequency with which it occurs, and categorize the information. The variables of interest may not be concise, such as opinions, and attitudes, and this method will attempt to determine the differences between variables or groups.

Data is normally collected through questionnaires or interviews. Researchers should only use this method to relate one variable to another, no attempt is made to determine causation.

The two most common types of quantitative descriptive designs are: case control and comparative.

Case Control Studies - describe cases with and without a pre-existing condition or exposure. The cases or subjects of the study may be an individual, a family, or a group. Case control studies are more feasible than experiments in cases especially when the outcome is rare or may take years to develop. Also known as a case report or case study.

Comparative Studies - also called ex post facto or causal-comparative studies. These studies describe the differences in variables that occur naturally between two or more cases, subjects, or units of study. Although similar to quasi-experimental studies as the researcher using a

comparative design normally pose hypotheses about the differences in variables between or among two or more units, however, the researcher does not control the variables.

Correlational studies:

These studies are used to measure the relationship between 2 variables and quantify the strength of the relationship between the variables; it is not cause and effect. Each score on one variable is matched up to a score on the other variable. They are very useful when proper experimental conditions are unavailable.

Correlational data can be plotted as a scatterplot with one variable on the X-axis and one on the Y-axis. The scatterplot shows the direction, the form and the strength of the correlation. It can be a positive or negative correlation. A positive correlation is where as the score of one variable increases so does the other, while a negative correlation is one where as the one variable increases, the other decreases.

Cross Sectional study designs:

A cross-sectional study compares groups at one point in time, e.g. age groups, ethnic groups, disease groups. It takes a cross-sectional sample from the overall population and is normally done through questionnaires or interviews.

An advantage is that it is an efficient way to identify possible group differences because you can study them at one point in time, however you cannot rule out cohort effects.

Longitudinal Study designs:

In a longitudinal study the same sample group is used and measured a number of times over an extended period of time. The advantage is that you can see the time course of the development or change in the variables, however, it is costly and time consuming.

Observational studies:

Observational studies are used in monitoring and systematically recording behaviour of participants. They are often used by Social or Developmental psychologists but may be used in a wide range of research areas as a basis of surveys or to validate findings of surveys.

Naturalistic observational studies aim to unobtrusively observe behaviour in the natural setting as this enables one to minimize or eliminate the problem of artificial behaviour in response to being studied.

Non-participant observation is the easiest form where the researcher will observe the phenomenon 'from outside' with no engagement with either the activity or the subjects, for example observing how many people used a particular spa facility at a particular time. Various techniques can be used, such as video, photography, or watching with naked eye and recording the data.

A variation to this is being a participant observer where the researcher takes part in the phenomenon to get 'insiders' understanding. For example, a researcher investigates issues of customer care and use the sports facility to collect data about his/her own experience as a user, this will help them get an 'insiders' understanding of the issue. Data would be in the form of field notes.

This is not strictly a unobtrusive method as the researcher may have some effect on the social environment, but hopefully it is only minimal. The researcher should not set out to alter the behaviour of others.

The advantages of this type of study is that the researcher can observe the natural phenomena (not artificial), however there may be observer bias and reactivity in subjects as the presence of the researcher may affect the behaviour of the subjects. Covert observations can be used so subjects are unaware they are being observed. However this raises some serious ethical issues.

6.2.1: Questionnaires

There are many quantitative methods of data collection. These are normally amply covered in textbooks and you are invited to make use of the reading list at the end of this session to enhance your understanding of these techniques.

Within this session we will look at questionnaires.

Questionnaires are the most common method of collecting non-experimental research data. According to Gratton & Jones (2005, p. 115): 'a questionnaire is a standardised set of questions to gain information from a subject.'

Questionnaires can be both quantitative and qualitative depending on the type of questions asked. There are 3 types of questionnaires:

- Postal questionnaires - Given, posted or emailed to a participant who will complete it when they can and send it back to the researcher.
- Telephone - Researcher will ask the participant questions over the phone and the researcher fills in the questionnaire.
- Face to face - Researcher asks the participant the questions face to face and fills in the questionnaire. These are the same as structured interviews to a large extent.

The advantages of questionnaires are:

- Accessibility - postal questionnaires collect data from a wide geographical area more cheaply than an interview. You also do not need to be present to ask the questions. You will also get a larger sample.
- Reduction in bias - if they are well-designed. The researcher will not introduce bias as they will not respond to the answers, through their body language or their presence as it is in the case of observations.
- Anonymity - this is especially important when asking questions about sensitive issues as the researcher's presence may inhibit the respondent's answers.
- Structured data- produces highly structured quantitative data that can easily be compared between subjects or within the same group over a period of time.
- Increased time for respondents to fill in the questionnaire.

Disadvantages of questionnaires are:

- Complex questions may confuse the participants.
- The researcher has no control over participants.
- The researcher cannot ask for an expansion of the answers to questions.
- Low response rate. Postal questionnaires have a well known poor return rate, as low as 5% and this can seriously affect the reliability of study so the researcher needs to look for ways to improve return rate.

Issues to consider in questionnaire design:

Good questionnaires are difficult to design as it must fulfil the research questions. When designing the questionnaire there are 3 questions to ask:

1. What information do you need to answer the research question?
2. What questions will give me the data that will, when analysed, give me this information?
3. How will I analyse the data in order to answer my research question?

The questionnaire should be kept as short as possible avoiding questions that may not be needed. The researcher will need to justify why the questions were included and this is done in

the methodology (research design). The way in which the questions will be analysed will influence the type of data collected (ordinal or ratio).

Whether you ask open or closed questions there are several things to be considered when writing questionnaires:

- Clarity - questions must be clear and unambiguous & avoid using complex language so check that the question does not mean one thing to some people and a different thing to others. Quite often they will make sense to the researcher but may not be clear to respondent. You should try and use simple language rather than technical or academic language especially if you are targeting a broad cross-section of the population.
- Leading questions - be wary of leading questions which force or imply a certain type of answer is needed, as these can be the down fall of the accuracy of the questionnaire. E.g. 'do you agree that potentially dangerous performance enhancing drugs should be banned?' Most respondents will answer 'yes' due to the wording of the question as they would feel that to answer no would be silly or make them look silly. To solve this problem you need to get someone to read through your questionnaire and maybe even try and answer some of the questions.
- Hypothetical questions - 'If you were prime minister, what would you do to improve conditions for disabled children at school?' Try not to influence the participants answers.
- Threatening questions - difficult to get valid answers if the respondents feel threatened. E.g. violence in sport, or performance enhancing drugs - the respondents may under-report or even deny such activity. You would need to carefully word these questions to reduce bias.
- Double-barrelled questions - try not ask respondents their views of 2 issues in the same question. E.g. 'Do you agree that rugby is a dangerous sport and should be banned?' Ask these in 2 separate questions.

6.3: Reliability & Validity

Reliability is the consistency of the results obtained from multiple samples of the same methodology. 'Is it consistent? Does it produce the same readings in the same circumstance?' (Coolican, 2004).

So, for example, if you were researching the brand usage of a product and you asked one group on one day whether they used a particular product, 70% of the respondents said yes. Then the following day you asked a different sample of people the same question, 55% of them said yes.

Which of the answers is correct? To be sure, it would have been preferable they gave a similar answer on both days. So was the method reliable?

There are 3 types of reliability:

- Inter-observer reliability - measures the extent to which the scores from several observers is similar for the same methodology. So if there were 2 researchers measuring a particular behaviour at the same time, would they give the same/similar score/s. This is important if there are a number of people collecting the data for a study.
- Test-retest reliability - is a measure of the extent to which a study if repeated at a different time, would give the same score, over and over again using the exact same

methodology. So, for example, if an athlete's ability at a particular sports task was measured and then repeated a week later, then what is the athlete's true score for that task? As covered already there are other factors that could affect the second score and it is the researcher that would need to identify this and take it into account.

- Internal consistency reliability - is the extent each question in a measure is actually measuring the same phenomena. If, for example, a set of 5 questions was used to measure the commitment a member of the team had to the team, are all 5 questions measuring commitment. This is important when using scales as measurements.

There are aspects that could potentially threaten the reliability of a study:

- Subject error - subjects may answer/act differently depending on when they are asked, thus choose a neutral time to question/observe them.
- Researcher error - different researchers may collect the data differently, thus resulting in different responses/observations. If more than one researcher is used it is important to ensure that the same procedures are followed by each.
- Subject bias - participants may give a response they think the researcher wants, or try to give the 'correct' answer rather than answering truthfully.

Validity:

Validity is the confidence that the chosen method actually measures what the researcher wants it to measure, so are the conclusions valid conclusions? There are a number of aspects to validity which should be considered before carrying out the data collection:

- Face validity: - does the chosen method appear appropriate to measure what it needs to at a first glance? Carry out a pilot study to assess this.
- Content validity: - similar to above, however, an expert does the initial assessment to critically assess whether the more subtle issues have been accounted for.
- Predictive validity: - can the researcher predict future behaviour from the findings?
- Construct validity: - does the data correlate with other measurements? Are there other variables that may affect the measurement, such as age, gender, weight, diet, fitness levels, attendance at a particular place/session?

7: Research Ethics

Ethical problems are a feature of everyday life. Whenever you ask yourself a question like "What should I do?" there is a good chance this may pose an ethical dilemma. By asking yourself this question you have to go through the process of arriving at a decision. This means making judgements about what is right for you and what is wrong. You will make ethical decisions when you make choices to do with different interests and commitments, e.g. work, family, society and money. In a similar vein, researchers face ethical problems whenever they plan and carry out a research enquiry.

Building upon the discussion presented in Session 2, this session aims to give you further grounding in research ethics and raise awareness of your responsibilities and obligations towards conducting ethical enquiries. Whilst this session is delivered within the context of this module, you may want to return to this material at a later stage in your studies, especially when you are ready to undertake your independent studies research.

Learning Outcomes:

By the end of this session you will:

- Develop an understanding of Ethics and its place within the research process
- Appreciate which measures exist to enable and support ethical research.

7.1: Ethics within the Research Context

Scott and Marshall (2005, p. 197) point out: "ethics is the branch of philosophy that deals with moral behaviour".

In simpler words, Ethics is about a set of norms for conduct; often a codified framework that helps us distinguish between what is right and what is wrong, what is an acceptable or unacceptable behaviour.

The following of these norms should rationally guide individuals in deciding what to do and what is morally right: e.g. not stealing; not lying; not killing; not being racists, etc. or thinking about broad (and often difficult) moral social issues and practices: e.g. euthanasia; abortion; war; poverty; cheating; drinking; breaking confidentiality; human rights exploitation and abuse, etc.

There is a fine difference between ethics and law and although these two normative practices often overlap, they are not synonymous to each other. Laws are a consistent, written set of rules that society at large accepts and are normally enforced by a society's policing and governing structures. Conversely, ethical principles are not necessarily legally binding, and whilst in general what is perceived as unethical behaviour is also illegal for most societies (i.e. stealing; but also workforce exploitation, or discrimination, etc.) this is not always the case.

In many instances what is perceived as unethical behaviour, is perfectly legal (i.e. hotels having air-conditioned environments, even if it contributes to global warming). Vice versa what is illegal may still be perceived by some communities as ethical.

Ethics and Research

In the context of research: "ethics refers to the appropriateness of your behaviour in relation to the rights of those who become the subject of your work or are affected by it" (Saunders et al, 2007, p. 178).

The university business is knowledge. Academics are expected to be involved in research, as are students (like yourself) whether undertaking an independent study for Postgraduate (Taught) awards or in the context of meeting the learning outcomes of their modules. Research ethics applies to all, and staff and students need to be aware of and comply with legal and ethical procedural requirements.

Much research is about gathering data from people, thus whatever research topic, methodology design and sampling techniques used, doing research is about:

- Making decisions about what is morally right and wrong, e.g. is my research socially and morally acceptable?
- Making decisions to do with different interests, commitments and responsibilities, e.g. is my work going to involve vulnerable groups in society for example children, people with some form of disability, etc.

Within this reasoning, the underpinning standards that guide all research ethics are:

- "Do not harm": also known as the principle of non-malfeasance, permitting no official misconduct.
- "Do good": also known as the principle of beneficence, indicating a systematic regard for the rights and interests of others in the full range of academic relationships and activities.

What do researchers need to be aware of?

As a student you will not be fully aware of what ethical issues to take into consideration.

In general, researchers have an obligation to conform to the ethical standards of the society and organisation in which they conduct their work.

Researchers also have an obligation to be informed about the appropriate legislation of the country in which they are conducting research and how that legislation might affect the conduct of their research. Researchers should not knowingly contravene such legislation.

Furthermore, Researchers have an obligation to uphold standards and safety and maintain a professional behaviour throughout the conduction of their studies. Most importantly, researchers should ensure that their study does not involve any of the following:

- Invasion of privacy
- Causing participants to lose dignity
- Causing participants to think less of themselves
- Deception that causes resentment or hostility
- Unnecessary withholding of information
- Pain or discomfort
- Breaking local prohibitions (e.g. drinking alcohol, taking drugs, etc.)
- Anything that may make participants feel uncomfortable

7.1.1: Obligations of Researchers

These obligations are discussed in the Ethical Guidelines produced by the [Social Research Association \(2003\)](#), but we have abridged them below to provide you with the highlights.

1. Obligations to Society:

"If social research is to remain of benefit to society and the groups and individuals within it, then social researchers must conduct their work responsibly and in light of the moral and legal order of the society in which they practice. They have a responsibility to maintain high scientific standards in the methods employed in the collection and analysis of data and the impartial assessment and dissemination of findings." (SRA, 2003, p.13-14).

2. Obligations to Funders and Employers:

"Researcher's relationship with and commitments to Funders and/or employers should be clear and balanced. These should not compromise a commitment to morality and to the law and to the maintenance of standards commensurate with professional integrity." (SRA, 2003, p.13-14).

3. Obligations to other researchers:

"Social research depends upon the maintenance of standards and of appropriate professional behaviour that is shared amongst the professional research community. Without compromising obligations to Funders/ employers, subjects or society at large, this requires methods, procedures and findings to be open to collegial review. It also requires concern for the safety and security of the researcher and other colleagues when conducting field research." (SRA, 2003, p.13-14).

4. Obligations to Participants:

"Social researchers must strive to protect subjects from undue harm arising as a consequence of their Participation in research. This requires that subjects' participation should be voluntary and as fully informed as possible and no group should be disadvantaged by routinely being excluded from consideration." (SRA, 2003, p.13-14).

UOD researchers (including you) need to be aware of and comply with both legal and ethical procedural requirements of the country and organisations they are doing research with.

7.1.2: University Requirements

Furthermore, researchers have to comply with the University Policy on Health, Safety and Equal Opportunities, and the [University of Derby Code of Practice on Research Ethics](#). Whilst the first two documents can be easily accessed from the main University website, however, you can follow the link to the research code of practice.

Most importantly, anyone who is planning to carry out research must obtain approval from the University Ethical Committee. For this to happen, researchers must complete and submit a Request for Ethical Approval Form.

Request for Ethical Approval Form

Whilst at this stage you may not be required to apply for an Ethical approval, the remaining part of this session provides you with guidance on how to fill in the Ethical Approval Form. You are recommended to revisit this session when you are ready to begin your independent scholarship research.

Fulfilling the obligations through the Ethical Approval Form

Approval forms help you to fulfill your obligations by addressing the ethical nature of your work, and highlighting any areas that need care.

"Poor design and trivial or foolish studies can waste people's time and can contaminate the field for future research." (SRA, 2003, p. 25)

It is undeniable that there are some research topics that are more likely to cause stress or a high emotional response (e.g. religion, politics, etc.) However, irrespectively of whether your research is going to involve such stressors, researchers (including yourself) need to consider what strategies will be employed to ensure that the researcher, the participants, society and the organisation are protected.

In other words, which strategies need to be employed to:

- Do good
- Do not harm any of the research stakeholders?

Therefore the form asks you to reflect and identify how you will protect the people who

participate in your research, e.g. will they have an opportunity to give you their voluntary consent, or will they be unaware that they are involved? Furthermore, how will you deal with confidentiality and protection of identity concerns and what will happen to any data collected?

7.2: Ethical Issues

We will look briefly at the issues involved.

Informed Consent:

Anyone involved in research has a right to be protected from physical and psychological harm (i.e. this is your responsibility).

It is the responsibility of the person conducting the research to make sure that people understand the nature and the purpose of the study.

This is especially critical if there are any aspects which might affect people's decision to take part. If this is your research you need to:

- Describe the overall purpose of the research
- Tell the participant what their role is to be and what is expected of them
- Give reasons for their selection
- Give an explanation of the procedures
- Give an indication of the time span of the research
- Tell people about any possible risk or discomfort
- Always ask if there are any questions
- Tell people they have the right to change their mind and withdraw
- Tell people when they can see the report or the findings of the research
- If children are involved permission must be sought from their legal guardian. This may be their parent or someone acting in loco parentis, for example the head teacher when the child is in school.

Remember, it is unethical to put pressure on people to take part

Deception:

Sometimes it is necessary to carry out research without the person, or group being aware of what is happening.

Why this might be?

Many researchers argue that due to the sensitivity of the issues they are researching, openly disclosing that research is being conducted might affect the behaviour of the research participants. However, please be aware that any form of deception is generally strongly discouraged and it is always best to explore every possible alternative method of research before looking at misleading people.

"To withhold material information from, or to misinform subjects involves a deceit, whether by omission or commission, temporarily or permanently. Such manipulation will face legitimate censure and must not be contemplated unless it can be justified" (SRA, 2003, p.32).

If you are going to involve deception you will have to convince the ethics committee that there is no other way.

Withdrawal of Consent:

Participants in research have the right to withdraw their consent at any stage. This includes removal of any collected data from your final report.

Confidentiality:

All information must be treated as confidential unless agreed otherwise in advance.

If research is to be published it should not be possible to identify those individuals who took part. This is quite difficult in some instances therefore this aspect of research needs careful attention. You can use numbers or false names, and remember not to give the name or address of any institution in the report. Any data must be stored safely and your work is subject to the Data Protection Act.

Protecting People:

Anyone taking part in research has a right to be protected from physical and psychological harm. This is your responsibility. There are topics and areas of research that may cause stress or a high emotional response such as different viewpoints, religion, politics, cultures etc. If your research is going to involve such stressors, you need to consider what strategies will be employed to protect those taking part.

Writing up your research and putting together the report.

Researchers do not make up data!

Researchers do not present data or ideas from others as their own.

They should make all efforts to ensure their analysis is representative of the views of the participants. Within this framework, researchers should make all efforts to ensure participants can view the findings.

Remember the basic principles of research:

- Do not harm = non-maleficence, permitting no official misconduct.
- Do good = beneficence, indicating a systematic regard for the rights and interests of others in the full range of academic relationships and activities

7.3: Conclusion

Conclusion

This session aimed to give you some grounding in ethics and raise awareness of your responsibilities when undertaking research. Research ethics do not just apply to those who use people or animals in their research, there can be an ethical dimension to all research. It is important that you challenge yourself to prove that there is no need for an ethical review.

For a further exploration of ethical issues in research you should read chapter 8 in *Essentials of research design and methodology* by Geoffrey R. Marczyk, David DeMatteo and David Festinger (available from the digital reading list).

7.3.1: End of Unit Activity

Return to your personal blog. Now that you're probably certain about the topic of your research for this module, and most likely your independent scholarship project, what ethical considerations are there with your research? Look at the research proposal form that you've been provided with. There's a large section on ethics that you don't need to consider for this module, as you are undertaking your research are there any areas that you need to consider? Write some reflections on ethics as they apply to your project.

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