# CONCEPTUALISING YOUR RESEARCH

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The focus of this workshop is the research process, in particular how to analyse and present data after the data collection phase and how to draw conclusions which address your research question or hypothesis. The aim is to assist those who have made inroads in a PhD project but are presently unsure as to how to present and interpret the data they have. The workshop will also assist those struggling to connect the research process with the writing of the thesis. We will begin by revisiting the initial steps that you may have already achieved in your doctoral project. However, before doing so, it is important we establish the ‘standard’ structure of the PhD thesis so that we can understand the conventional framework, or format, for the communication of research to your examiners.

This workshop booklet is organised in such a way as to be a useful reference for your future writing. In addition to the instructional material, it provides practical exercises, many of which we will attempt in the workshop.

1. The ‘standard’ thesis structure

The standard thesis structure in the physical, biological and social sciences consists of four parts: the introduction to the research, the background, your ‘own work’ and the ‘synthesis’. Some of these parts will generally contain more than one chapter. The diagram below illustrates the logical arrangement of these parts and the possible chapters that may be incorporated into them.

**Standard Structure of a Thesis**

![Diagram showing the standard structure of a thesis]

Before describing in more detail these parts, it is important to remember that a thesis should never be ‘top heavy’. That is, the introduction and background chapters – where the focus is primarily on the work of others – should not be
greater in volume compared to your own work, which incorporates the methods, analysis, discussion and conclusion chapters. A reader/examiner will not want to labour through huge (i.e. 40+ page) early chapters to finally arrive at your contribution to the field! What follows is a brief description of the four essential parts to a conventional thesis structure.

Part 1 is the introduction. Don’t mess around in it. Quite literally the only purpose is to introduce the research. For this reason it is always the shortest chapter in the thesis.

Part 2 is the background required before you can describe your own research. In these chapters you can set the context for your research (history, geography, culture); present a literature review; review current theory and/or practice.

Part 3 concerns your own work. It will contain a chapter on methods, research design and specific data collection instruments. It will also contain an ‘analysis’ chapter in which you systematically present the results of your investigations (i.e. data that has been categorised, coded and presented in the form of charts, tables, graphs and so forth).

Part 4, the synthesis, relates to the chapters where you develop your own contribution to the state of knowledge and understanding of the topic. It will usually contain a discussion in which you examine your own results in light of previous research (linked here to literature review). This may lead to the development of new theory.

If you stick to this four-part structure you will write a clear and comprehensible thesis. Above all, you should not neglect any of these four sections, and you should develop them in the order given in the above diagram. Most theses will have between six and nine chapters (if you have more than nine you should expect that some are really only sections of chapters and you should look for some consolidation).

**Exercise:** Can you readily identify the chapters in your own thesis? Quickly jot down your ‘thesis outline’ from introduction to conclusion chapter.

### 2. THE INTRODUCTION CHAPTER

It is important to recognise that the standard thesis structure reflects the research process in its entirety, from inception to conclusion. And, each chapter of the thesis has a specific function; it demonstrates to the reader exactly what occurred at that particular stage of the research. For example, the
introduction chapter must address the following elements, generally in the order given here:

![Figure 1](image)

One of the most successful strategies for moving forward with your doctoral project is to connect the research process to the writing of the thesis. This means that researchers must begin the writing of the thesis as soon as the project commences and continue throughout it; altering, adding and amending drafts continuously. Don’t wait until the data has been collected and analysed! Writing is a non-linear, constant process of producing and revising with the possibility of ideas emerging at all stages.

**Exercise:** Even if you are at the earliest stage of your doctoral study, can you identify the chapters in your thesis that you can begin to write now, even before you have begun to collect data? Highlight these on the 'thesis outline' you have produced from the previous exercise.

**Essential first steps in research**

The first phase of the research (and writing) process involves selecting a research problem, narrowing the focus of the research question, selecting a research design, defining and measuring variables, constructing an investigating
instrument and drawing a sample. In other words, this phase is one of decision making, sorting, narrowing and clarifying. It requires clear thinking and a more precise development of ideas. These tasks will feed into the first three chapters of your thesis: the introduction, literature review and methods chapters.

**Figure 2.**

- **Introduction**
  Communication of the research problem

- **Literature review**
  Refine the focus of the study (highlight original contribution to knowledge)

- **Methods**
  Reporting of research design
  - Define variable
  - Drawing a sample
  - Formulate data collection instruments

**The beginning of research**

The research process begins when we come to the conclusion we want to know something. An observation, something we read, a claim someone makes - these may serve as a stimulus to begin the research process. Here is an example of a simple observation that might lead a researcher to engage in research:
Some students get better marks than others.

An observation like this may prompt someone to ask questions such as why? Which students? Is it the way the papers are marked? And so forth. In other words, an observation may trigger the enquiring mind to ask questions and the research process has begun. Once you have tacitly identified a broad problem, the next step is to narrow the focus and clarify the issues involved in the problem. The problem above is clearly NOT sufficiently refined to provide a useful research question. The task now is to move from this starting point to create a researchable question through a process of narrowing and clarifying.

Defining the scope of your research: narrowing and clarifying

It is vitally important that you set adequate limits on your research, as over ambitiousness in topic selection can be a major problem in a PhD project. Why?:

- Because you have limited time and resources
- Your study needs to be focused to achieve its aim of originality
- Your supervisor will feel more secure knowing that you know where your research niche lies.
- Most importantly, if you clearly set the limits to your study you are more likely to finish the thesis in a timely manner.

Don’t forget, defining and limiting the scope of your study also extends to other aspects of your work, such as in the case of the key concepts you are intending to use, especially if they are in some way contentious.

Of course reading the relevant literature focusing on your topic is an obvious process for identifying the limit of knowledge surrounding your research problem. That is, you discovered what is unknown and then create a niche for your own work so that you are contributing something original and significant. However, even before this we can engage in a process to narrow the scope of our research.

Exercise: To illustrate better the importance of defining the scope of your research, I want to put to you a hypothetical research question: "What is the best restaurant in Kuala Lumpur?" How feasible is it to answer this question? In the space below think of some related questions that would narrow the scope of the study.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
In the exercise above we have ‘unpacked’ the many issues that are tied up in a stated topic or problem. We have begun to isolate factors and identify possible explanations. When we do this, we reveal many different avenues of research. We are then in a position to choose from that list a question that will focus our attention on a narrowed problem.

Let’s apply this principle to our original research problem: ‘Why do some students get better marks than others?’ We see there are many possible explanations or hypotheses (a hypothesis can be defined as a proposition made as a starting point for further investigation):

![Diagram](image)

**Figure 3**

Each one of these factors (or hypotheses) could serve as the basis for a research project. It would be impossible to include them all, and in selecting one (or perhaps two) you are narrowing the focus of your research project.

Of course you are unlikely to be the first person to have explored this area, so you need to find out what others have found by consulting the published literature on the topic. Writing a literature review is an important part of narrowing the focus of your research and ensuring that the work you do is original and significant! You may find that one of these possible factors has not been researched (whilst the others have) and that you have found yourself a gap in knowledge that you can fill:

- Some students go to better schools
- Some students eat better meals than others
- Some students have a higher IQ than others
Some students work harder than others ✓

**Formulating a hypothesis**

A hypothesis is a statement which asserts a causal relationship between concepts (or ideas). If we return to the example we have been using, selecting one of the possible factors which might determine why 'some students get better marks than others' we can diagram a simple hypothesis:

![Diagram showing causal relationship between amount of study and academic performance](image)

**Figure 4**

The arrow in this diagram indicates that one concept (amount of study) does something to the other concept (academic performance). The plus sign indicates that the relationship is a positive one, that is, the more of the one will lead to the more of the other. The concept that does the causing is called the independent concept - it is the thing that acts upon something else. Given this, we are in a position to write a hypothesis to guide our research, for example:

*The more a student studies, the better will be the student's academic performance.*

**Exercise:** can you provide an example of a negative relationship for the hypothesis given above? Give an example. How might it be represented in a diagram?

What we have discovered to this point forms the basis for the first two chapters of the thesis: the introduction and the literature review. Of course the final draft of these chapters will be much more sophisticated than at this early stage of you research (as we saw earlier when we identified all the elements in an introduction chapter - see figure 1). However we must start somewhere and explaining to the reader exactly how we arrive at our researchable question/problem is a good start!

**Question:** What is the difference between a hypothesis and a research question? Provide an example of each.
3. THE LITERATURE REVIEW CHAPTER

When to start writing the literature review

In the following section I want to talk about the development of a research design, however, before doing so I want to emphasise that this should not be attempted until after the literature review is written (in fact one cannot design the research instruments, finalise the research questions or start collecting the data until after the first draft of the literature review is written!). The process for writing a literature review is:

Survey ➔ Record ➔ Summarise ➔ Critique ➔ Integrate

Survey the literature to identify the most critical sources relevant to your study.
Record the bibliographic details as meticulously as you can (learn to use EndNote)
Summarise the work to capture the essence of the sources you have selected and identify their relationship to your work.
Critique the source to discover its strengths and weaknesses. You may want to develop a checklist to evaluate the work. For instance some of the questions you may want to ask while you read could include:

- What is the stated research problem?
- Are the identified research aims likely to lead to some resolution of the research problem?
- Has an appropriate methodology been chosen and is it properly applied?
- What is your evaluation of the interpretation of the data presented by the author of the paper?
- Are you convinced by the argument(s) presented? On what basis?
- What do other papers on this research topic say? Is there a difference of opinion? What might account for these differences?
- What assumptions underlie the theoretical framework employed in different papers?
- What’s new/what’s especially valuable about what is contained in this article (ie what is its contribution?)
- How well does the book or article fulfil the promises set out in the title, abstract/preface and introduction?
- How effective is the methodology?
- In summary, how effectively is the argument made? How persuasive is the evidence?
Integration requires that each source should be **collated into categories or themes** with other related literature so that you can deal with (write) more coherently with the material in the literature review chapter.

### 4. THE METHODS CHAPTER

#### 1. Paradigms
This refers to the dominant or overarching philosophy or theory which has influenced the way in which your research has been undertaken. We are talking here of the ‘general stance’ or perspective of the researcher. Of course these stances are determined by the discipline in which you are working. For instance, if you were pursuing a sociological study, you will first want to identify whether yours is a qualitative and quantitative analyses. In addition, you will want to make it known if you are adopting a constructivist, postmodern, neo-Marxist or poststructural theoretical framework. This has a significant bearing on the character and outcomes of your research. Above all, the paradigm you choose will have a significant influence on your choice of methodology.

#### 2. Methodologies
This refers to the approach you have taken for your data collection and analysis. For instance you might adopt an **ethnographic approach** if you are working in the discipline of anthropology, or a phenomenological approach if you are working in the discipline of sociology. Each methodology has its own set of techniques for the collection and analysis of data.

#### 3. Techniques
In this section of your methods/research design chapter you should take the time to describe very concisely the techniques you have selected for data collection. These are to some extent dictated by the methodology you chose (see above). For instance, if you have chosen an ethnographic approach you will more than likely be employing interviews, focus groups, observation, perhaps questionnaires and so forth.

#### 4. Specific instruments
Finally, it is important to include details of the specific instruments you have developed to collect data. For instance, you may have chosen to implement a questionnaire as one of your data collection instruments. Take the opportunity to outline the format of the questionnaire, whether it was self-administered or administered by the researcher, describe the nature of the questions asked, whether it was made available on-line and so on. A copy of the questionnaire could be included in the appendix of your thesis so it is available for scrutinizing by the examiner and future readers.
I am a firm believer in templates. The reason is that as a researcher you are faced with turning chaos into order. By this I mean you must present what is an inherently messy, creative and often ad hoc process into something that appears as a calm, linear and orderly. Again, the structure of the methods chapter is dictated by academic conventions relating to an acceptable thesis structure. When think about the way that you will organise the information in your own methods chapter you might like to consider the following:

*Note: it is important that you justify why you have decided to use a particular paradigm and methodology from the many competing viewpoints. You can do this by citing methodology literature in other research projects in the same area as yours. You must also explain why you have rejected other possibilities!*

**Exercise:** Can you identify, in relation to your own study, the paradigm, methodology and data collection techniques you will or have employed for your own research project? Make a plan for your own methods chapter using this formula.

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**Finding variables to measure causal relationships**

Once you have developed a hypothesis, you are ready to formulate a research design that will allow you to test the hypothesis. The process requires we find ways to **measure** the concepts we have identified. This process is called ‘operationalisation’. In other words, we have to define the concepts we are working with in **empirical terms** (the term ‘empirical’ is given to those tangible things in the world we can touch, observe and ultimately measure). For instance, heat or hotness is a concept, an idea. But heat is able to be measured via a measuring device called a thermometer. The thermometer offers a scale of temperatures (either in Fahrenheit or Celsius) which are variable. Temperature is the operational definition of the concept heat.

Our task then is to look at the concepts we are working with and ask ‘how is it possible to measure this’? In relation to our example, the question we need to ask is how do we measure study and academic performance? If we take academic performance first, we might consider:

- **Test results**
- **Essay marks**
- **Examiners’ reports**
- **Project assessments**

These measures are known as **variables**; they vary in amount and/or kind.
What about study? How do we measure study? What variables can be used to measure study? The obvious one is amount of time (hours & minutes) spent in revision. So, an operational form of our initial hypothesis asserts that:

**The more time a student spends in revision, the better will be the student’s academic performance**

**The question of validity**

We have moved now from the abstract theoretical level to the empirical and measurable level. However, not everyone will agree with our selection of variables, and in fact there may be severe shortcomings in the variables and we should be critical of those we select to measure our concepts. When we question the usefulness of our variables, we are coming to some conclusions about the adequacy of our measurable indicators. Here we are referring to the issue of validity. For instance:

1) Is attendance at the mosque or church an indicator of depth of spirituality or simply an indicator of conformity, or both something else?
2) Can the absence of divorce be taken as an indicator of family happiness?

This is the problem of validity. Validity refers to the soundness of persuasiveness of the measurable indicators we are proposing to use to test our hypothesis. One of the things that need to be stated in a thesis under the heading of ‘limitations to the research’ is any problem you feel about the degree to which your theoretical concept is adequately covered by the variable you have selected. In other words, be honest in your reporting of possible shortcomings in the validity of your variables.

**The logic of measurement**

In doing research we try to measure systematically some aspect of the world around us. To measure a variable we need both a measuring instrument and units of measure in order to report variations.

Define concepts  
Heat  
Growth

Select variables  
Temperature  
Weight

Devise measuring instrument  
Thermometer  
Scale

Devise units of measurement  
Degrees Celsius  
Grams

The simple examples above are drawn from the physical sciences, where the logic of measurement is less problematic than in the social and behavioural
sciences, where standardised measures and scales are less readily available\(^1\). However, because research does not deal with vague impressions but with systematically measured and recorded observations, the challenge for social scientists is to develop their own measuring instruments and scales for reporting on issues as diverse as:

<table>
<thead>
<tr>
<th>Social class</th>
<th>Political attitudes</th>
<th>Marital happiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of life</td>
<td>Academic performance</td>
<td>Learning</td>
</tr>
<tr>
<td>Racial prejudice</td>
<td>Motivation</td>
<td>Social adjustment</td>
</tr>
</tbody>
</table>

**Using surveys to measure variables**

Surveys can be divided into two broad categories: the *questionnaire* and the *interview*. Questionnaires are usually paper-and-pencil instruments that the respondent completes. Interviews are completed by the interviewer based on what the respondent says. Both the interview and the questionnaire are devices for measuring the variables under investigation. Therefore, each question asked must have some intended bearing on the variables you are studying (any questions that are superfluous to this are simply a waste of your and the participants' time).

If we return to the operationalized original hypothesis of - ‘The more time a student spends in revision, the better will be the student’s academic performance’ we can devise a questionnaire to measure the variable *hours spent in revision*, by asking each student to keep a record.

<table>
<thead>
<tr>
<th>Questionnaire on Time Spent in Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student name (or identification number)</td>
</tr>
<tr>
<td>I would be most grateful if you could help me with my research project. It will not take much time. We are to have an examination on May 8. During the month between now and then please keep an account of the time you spend in revision</td>
</tr>
<tr>
<td>April</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>12</td>
</tr>
<tr>
<td>14</td>
</tr>
<tr>
<td>16</td>
</tr>
<tr>
<td>18</td>
</tr>
<tr>
<td>20</td>
</tr>
</tbody>
</table>

\(^1\) There are, however, some tools that are universal. For instance there are a number of measures of personality and intelligence, such as the Intelligence Quotient (IQ) Test.
Once you have collected all the questionnaires you may wish to construct a table to summarise your data.

<table>
<thead>
<tr>
<th>Suggested data Summarization Form</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student name or number</strong></td>
</tr>
<tr>
<td>--------------------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
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<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
</tr>
</tbody>
</table>

To this point you have collected your data. The very simple example above has illustrated the process in relation to a questionnaire. However, once data have been collected it is necessary to decide how they are to be summarized and presented. To summarize and to organise your data involves three steps. First, **categories** must be selected in which the raw data can be summarised. Second, once the categories are selected the data are **coded**, that is they are sorted into the categories. Finally, the data are **presented** in a form which facilitates the drawing of conclusions.

**5. THE ANALYSIS CHAPTER**

**Categories**

While data are collected in detail, they usually cannot be reported or presented in the same degree of detail. This applies to both numerical and textual data. In order to summarize the detailed data we must first construct inclusive categories and then sort the data into these categories.

In the instance of our working hypothesis measuring the relationship between hours spent in revision and examination results; it is possible to determine what the extremes were and what the average was. For example:
In doing this we create inclusive categories into which data can be sorted. For instance, the students could be classified into those who studied more than the average and those who studied less than the average. Similarly, the students could be classified into those whose results were above or below the average. Whatever categories are decided on, the aim is to reduce the raw data to a more manageable set of categories.

In doing this we create inclusive categories into which data can be sorted. For instance, the students could be classified into those who studied more than the average and those who studied less than the average. Similarly, the students could be classified into those whose results were above or below the average. Whatever categories are decided on, the aim is to reduce the raw data to a more manageable set of categories.

Exercise: In relation to the example above can you think of other categories which may be useful in the sorting of raw data?

Coding
Once the categories are selected the data are coded. That is, the raw data are reclassified into the more inclusive categories. In this way, the data can be more readily analysed. It is at this point that patterns begin to emerge. For instance, you may be able to establish the frequency of students appearing in each category.

Presenting data
Only after the first two steps have been achieved is it possible to present the data in its more manageable and meaningful form. The way you present your data needs to show the relationship between the two operationalized concepts in the hypothesis: time spent in revision and examination result.

Tables
Tabular presentation of data is a useful first step in communicating processed information to a reader. Tables generally present data that has been cross-tabulated. A cross-tabulation gives you a basic picture of how two variables inter-relate. It helps you search for patterns of interaction. Obviously, if
certain cells contain disproportionately large (or small) numbers of cases, then this suggests that there might be a pattern of interaction. For example:

<table>
<thead>
<tr>
<th>Amount of time spent in revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examination result</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Above average</td>
</tr>
<tr>
<td>Below average</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

N= Number of students

How can this table be interpreted? It shows a very clear, straight forward relation between the two operationalised concepts; time in revision and examination result. That is, the more there is of one (study time), the more there is of the other (examination result).

Sometimes it is better to present the tabular results as percentages. The following table shows the percentage of students spending above or below average amounts if time in revision who scored above or below average in the examination.

<table>
<thead>
<tr>
<th>Amount of time spent in revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examination result</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Above average</td>
</tr>
<tr>
<td>Below average</td>
</tr>
<tr>
<td>Sum</td>
</tr>
</tbody>
</table>

Among those students who spent an above average amount of time in revision, 68.7% received above average examination results, while 31.3% received below average results. By contrast, among those students who spent less than average amount of time in revising, 14.3% received an above average result in the examination and 85.7% received a below average result. Therefore, the conclusion is that:

The amount of time spent in revision had a definite and positive effect on the examination results of this particular group of students.

Bar graphs can also be used to present cross tabulated data, as in the example below. However, not all data is suitable for presentation in this manner. The selection of tables, graphs and charts is based on their appropriateness for the type of data that needs to be presented.
Supporting explanations

Tables should be made comprehensible even without reference to any explanatory text. Readers should therefore be able to understand your findings just by looking at figures and tables. Nevertheless, it is always advisable to give clear explanations (or interpretations) to the data that you are presenting in the form of graphs, tables and diagrams. The general aim is to enable non-statisticians to understand the implications of the figures being presented.

Here is your opportunity to emphasise the importance of those issues which are at the heart of your research. Take it as an opportunity to highlight your argument and persuade the reader of its validity. The rule here is that the text should be focused on what the researcher wants the reader to notice, not because he or she thinks the readers will have difficulty in understanding the figures (if that is the case then improvements to the quality of the table or graph should be made).

Applying these principles to qualitative data

Quantitative research is designed to give numerical results, as has been the focus of the previous section. These results can lend themselves to being reported in tables, graphs and charts. The strength of quantitative research is that it can tell us about frequencies. However, qualitative research has a different strength, that is, it can tell us about attitudes, beliefs and values. The emphasis is not on quantification in this case, but on understanding why people and social groups think and behave in certain ways. It is often asserted that qualitative research involves the use of words rather than numbers, and this is quite true when we think of the type of data being generated.

The nature of qualitative research

Many of the requirements of quantitative research are also necessary for qualitative research. For instance, many of the steps outlined earlier apply to both methodologies (that is both quantitative and qualitative research). These include the need to:

- Select, narrow and formulate a problem/question to be answered
Choose, formulate an appropriate research design
Select methods for data collection

However, one of the major differences is that quantitative research produces a relatively small amount of highly focused data, whereas qualitative research tends to produce large amounts of information that can only really be focused after data collection.

Another difference is that in quantitative research there is little ability or opportunity to alter the early decisions about the direction of the research. For instance once a questionnaire is designed and sent it is out of the researchers’ hands; once an experiment has been carried out, it is over. Qualitative research, on the other hand, allows more continuous reflection on the research in progress, more interaction with the participants in the research, and there is usually more room for ongoing alteration and changes in direction as the research proceeds.

**Common methods in qualitative research**
Qualitative research usually involves one of the following methods or data-gathering techniques:

- Participation observation
- Interviewing
- Focus groups
- Life history and oral history
- Documentary research
- Conversation and discourse analysis

All of which generate large volumes of textual data

Just looking at the type of data we are likely to collect we can see that qualitative researchers must manage (or synthesis) multiple voices and sources. I think this is a crucial difference to quantitative research which tends to reduce the data to one voice.

Qualitative researchers also recognise that the researcher is a significant voice within the research. Your presence, as a PhD researcher, should be openly confessed since it has a significant bearing on the nature and outcomes of the research. This is called **self-reflexivity**; that is, admitting that the beliefs, values and experiences of the researcher have a significant impact on the study. The
purpose self-reflection is to locate the writer in the text by openly exploring personal, emotional and cultural issues experienced throughout the research process. The multiple voices (whose voice and how will they be represented?) of qualitative research must be given space and analysis, we will discuss the ways that this can be achieved momentarily.

Finally, one of the most striking differences between quantitative and qualitative research is the latter's legitimation of narrative and literary styles for the writing of social research; styles which dissolve the binary between the imaginative act of fiction writing and the social scientific act.

Summarising qualitative data
Once you have made your observations, recorded and transcribed your interviews and focus group material, what do you do with all that data? Qualitative data tends to produce vast amounts of information, which then needs to be summarised.

As in the case of quantitative research, the textual data produced through qualitative research must be codified, classified and thematised. This is necessary because you initially conducted the research to answer a particular question. Now it is time to relate the evidence you have collected to the question you are asking.

**Step one** is to systematically read the transcripts of interviews, observations or focus groups to identify key issues, concepts and/or opinions.

**Step two** takes place after these key themes have been identified. Now it is necessary to go back through the transcripts and codify the various responses. The most efficient way of doing this is through CAQDAS (Computer Assisted Qualitative Data Analysis Software). One popular product is NVivo.
Step three occurs after the data has been thematized and codified. Once this has been done it is now possible to make sense of what is occurring, often through comparison. For instance are there significant differences in young and old peoples response to a particular issue?; or between men and women?. Again, the analysis of qualitative data can be assisted by several computer software packages.
6. **Questions for review**

- How do the questions asked in qualitative research differ from those asked in quantitative research?

- What are the basic data gathering techniques in qualitative research?

- What is involved in the summarization of qualitative data?

- In qualitative research the subject participates more in the project than in quantitative research. Discuss.