RESEARCH METHODS IN ENGLISH
BBI 3422

BBI 3422 (Units 1-6) of 9
BA English

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MODUL PEMBELAJARAN : BBI 3422 RESEARCH METHODS IN ENGLISH disediakan dalam bentuk bahan pengajaran dan pembelajaran kendiri di bawah program Pendidikan Jarak Jauh, Universiti Putra Malaysia. Sebarang pertanyaan dan cadangan untuk memperbaiki gaya penyampaian dan isi kandungan modul ini bolehlah dikemukakan kepada penulis dengan menggunakan alamat Pusat Pendidikan Luar.

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43400 UPM Serdang
## PENGENALAN KURSUS

### a. Maklumat Kursus

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<td>Research Methods in English</td>
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### b. Maklumat Penulis

<table>
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<th>Nama</th>
<th>Prof Dr Chan Swee Heng</th>
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<td>Nama</td>
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c. Objektif Penawaran
   Student are able to:
   1. develop a critical and practical understanding of the methods employed in
      language research (C5)
   2. integrate appropriate research methods and techniques to a research
      project (A4)
   3. construct a clear and comprehensive research proposal (P4)
   4. adopt new ideas and become autonomous learners (LL)

d. Sinopsis Kursus
   RESEARCH METHODS IN ENGLISH covers current research methodology
   in language-related fields, types of research methods, research design and
   procedures, basic statistics, and statistical analysis, and preparing research
   proposals.

e. Kandungan Kursus

   Jadual 1: Tajuk Unit dan Cadangan Jam Kuliah Diperuntukkan

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**Perhatian:** Kesemua laporan hendaklah ditaip selang dua baris (double spacing) pada kertas berukuran A4, menggunakan font Arial saiz 12. Laporan yang hendak disajikan, digalak menggunakan penjilid plastik.

Nama dan No. matrik hendaklah di tulis dengan lengkap dan jelas.

### f. Penilaian Kursus

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<td>Final Examination</td>
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<td><strong>Total</strong></td>
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**g. Assignment**

2 assignment questions will be handed to you during the first face-to-face meeting.

**Deadlines for handing up assignment:**
- Assignment 1 - Week 5
- Assignment 1 - Week 14
h. Ujian Mid Semester dan Peperiksaan Akhir
The Mid semester Test will cover the first three topics.
The final examination will cover the rest of the topics.

i. Test Questions
The format is the same for both the Mid Semester Test and the Final Exam. They may be objective questions (including Multiple choice questions or short subjective questions. Some sample questions are provided below.

Sample Questions
1. The diagram shows how research can be classified. Fill in the missing information indicated by the numbers. (10 marks)

```
RESEARCH

(1) ____________________ (2) ____________________
```

- Qualitative Research
- Survey Research
- Statistical Research

```
Library Research
Literature Reviews
Qualitative Technique
Interview (3)
Descriptive (4)
Exploratory (5)
```

Broad categories of research

2. What level of measurement – nominal, ordinal, interval, or ratio – describes each of the following variables? (5 marks)
3. Why is representativeness important in sampling? (5 marks)

4. What is the difference between random sampling and stratified sampling? (7 marks)

5. a. What is field research? (5 marks)
b. Describe one form of field research. (5 marks)

6. The paragraph below is part of a literature review. The first sentence is given to you and the rest are in the form of notes. Use the notes to complete the paragraph using a variety of ways to show how in-text citation can be done. Beside each of the variety, indicate in brackets, the method used. (15 marks)

Most individuals seem to agree that microcomputers will continue to hold an important role in education.

Gubser and Hunter (1980) - near future - phenomenal increases in number of computers used in home and school

Schmidt (1982) – three types of microcomputer use in classrooms - object of course, support tool, provide instruction

Foster and Kleene (1982) - four uses of microcomputers – drill and practice, tutorial, simulation and problem-solving

7. Read the following abstract and answer the questions that follow.

Although microcomputers are now common in classrooms throughout the United States, it is not clear what their most effective role is in the teaching-learning process. This study compared the effects of microcomputer-assisted instruction and traditional lecture-discussion on the performance of graduate students enrolled in an agricultural education course. Students in the control group performed significantly better on a written test than either of the two treatment groups. Students having previous experience with computers did not perform significantly better than those new to computer-assisted instruction. Further research needs to be conducted to determine the most appropriate place for computer-assisted instruction in agricultural education.

a. Formulate a research question based on the abstract. (5 marks)
b. Identify an independent and a dependent variable in the research. (5 marks)
c. What is the research design? (5 marks)
### J. Rujukan Utama


### k. Rujukan Tambahan

1. Penerangan mengenai ikon dalam modul

   Untuk menolong pelajar memahami dengan lebih mudah kandungan modul ini beberapa icon telah digunakan. Icon-icon ini bertujuan untuk memudahkan ingatan pelajar mengenai struktur modul. Di bawah disenaraikan icon-icon tersebut berserta dengan maksudnya.

   a) ![Objekif](image) ➔ Objekif modul, unit atau topik

   b) ![Pengenalan](image) ➔ Sama ada pengenalan unit, topik atau sub topik

   c) ![Isi-isi penting](image) ➔ Kumpulan isi-isi penting yang terdapat dalam unit, atau topik

   d) ![Pemerhatian/Pandangan](image) ➔ Mengenai topik yang telah di kaji oleh beberapa sarjana atau maklumat daripada hasil kajian

   e) ![Kesimpulan](image) ➔ Kesimpulan yang boleh dibuat berdasarkan unit atau topik yang telah dipelajari

   f) ![Soalan dalam teks](image) ➔ Soalan-soalan yang disisipkan oleh penulis semasa membincangkan sesuatu topik

   g) ![Soalan Penilaian kendi](image) ➔ Soalan yang disediakan oleh penulis untuk menolong pelajar mengetahui tahap kefahaman terhadap topik yang dibincangkan

   h) ![Semak Jawapan Latihan](image) ➔ Jawapan berdasarkan latihan-latihan yang telah disediakan di setiap unit

   i) ![Rujukan](image) ➔ Bahan rujukan yang boleh dijadikan panduan tambahan dalam kursus tersebut

   j) ![Perhatian](image) ➔ Simbol ini akan digunakan bagi perkara-perkara yang perlu diberikan perhatian oleh pelajar
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<td>Topik 1: what is a literature review</td>
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<td>Quantitative data</td>
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<td>Topik 3: specifying variables</td>
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<td>Topik 1: audience awareness</td>
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UNIT 1
INTRODUCTION TO RESEARCH

Introduction
This unit has been written for students who are new to research and are faced with the prospect of having to critically read research papers or carry out a small-scale research investigation.

Topics of this unit:
1. What is research
2. Basic steps in the research process

The objectives of this unit are to:
1. Introduce you the concept of research
2. Examine basic steps in the research process

1.1 What is Research?
Research is often generally defined as a scholarly or scientific investigation or inquiry.

The word research can be described according to the following:

a. Function: noun, verb transitive

b. Etymology: Middle French recerche, from recercher to investigate thoroughly, from Old French, from re- + chercher to search

According to the Merriam-Webster Collegiate Dictionary (2007), the word research means:
a) to search or investigate exhaustively
b) studious inquiry or examination; especially: investigation or experimentation
   aimed at the discovery and interpretation of facts, revision of accepted
   theories or laws in the light of new facts, or practical application of such new
   or revised theories or laws
c) the collecting of information about a particular subject

Research is an entire process.

Research is the systematic process of collecting and analyzing information to
increase our understanding of the phenomenon we are studying. The researcher
aims to contribute to the understanding of the phenomenon and to communicate that
understanding to others. The aim of research is to perform and conduct a close and
careful study to find out (new) facts or information. Research also aims to study
(something) thoroughly so as to present information in a detailed and accurate
manner.

How can research benefit you?

Research may also help you to develop characteristics such as self-discipline,
commitment and determination in order to get a result in a short span of time. The
research process helps you develop life of skills that will be of assistance throughout
your career such as time management, IT skills, and understanding statistics to
name a few. By carrying out research work, you can contribute and make a
difference however small it may be.

1.2 Basic Steps in the Research Process

There are some basic steps that should be taken in the research process. The list of
steps presented below is a guideline for you to use. Not everyone will do these steps
in the same order and you may go back and forth between them.
1. Select a general topic that interests you in some way.
2. List key words to help you look up information about the topic.
3. Go to an encyclopedia, or other reference source, to get an overview of the topic.
4. Make source cards for whatever sources you will use for information.
5. Using the general overview, begin to focus the topic into something you can cover well.
6. Write a statement of purpose about the focused topic.
7. Brainstorm questions about the focused topic.
8. Write your research.
9. Write your works cited (it is similar to a bibliography).

The rest of this unit will briefly introduce you to the above basic steps in the research process.

1.2.1 Selecting a Research Topic

How do you select a research topic?

There are three possible ways for you to get a topic to research:

1. Your instructor assigns a topic to you.
   If this happens, you no longer have to worry about selecting a topic; just start listing key words.
2. Your instructor gives you some guidelines for choosing a topic.
   If this happens, you will then have to do some reading on the general topic in order to get an overview on the topic. Only then can you focus your topic into a reasonable size that you can handle for the research project.
3. Your instructor gives you complete freedom to choose whatever topic you want.
   If this happens, it can be a challenge. Choose a topic that interests you and learn more about it. Otherwise it will be boring and a torture to get through the research project.

1.2.2 Key Words
Make a list of the words that will help you find the information you need about your research topic. These words are called "key words" because they can "unlock" the doors that will lead you to useful information. Use these key words when searching through books (using indexes) and through electronic sources (using search tools such as search engines or directories). If you have good key words, you'll find the kind of information you want faster. If you don't have good key words, you may waste a lot of time not finding the information you need. Therefore it is important to have 'good' key words. Good key words are the important words or short phrases that specifically describe your topic and closely related topics. They are not long sentences. Start as soon as you have a general topic. You will be able to add more key words to your list as you focus and learn more about your topic.

Follow these basic steps:

1. First, write one or two sentences about your topic.
2. Next, underline all of the specific words that describe your topic.
3. Make a separate list of these specific words.
4. Add to your list any other words that mean the same thing (synonyms) or are related terms.
5. Think of more words or phrases that describe the larger topic, of which your topic is a part. Add those to the list.
6. Think of more words or phrases that are subtopics of your topic which might help you find you useful information. Add those to the list.

Now you should have a pretty long list of words and phrases that you can use to search for information. If one word isn't in a book's index or doesn't turn up any results on an electronic search, try another word or a combination of words.

Below is an example
Say you were assigned a project about language policy in Malaysia. You will have to focus your topic later, but right now, all you know is that you want to do something about language policy.

1. Write a sentence about your topic:

   *I want to do my project about a language policy. The policy is the use of English to teach Mathematics and Science.*

2. Pull out the key words and phrases in the sentences above and list them separately:

   Language policy
   Use of English
   Teaching mathematics and science

3. Now start expanding the list with related terms and synonyms:

   Language policy → language planning → language education
   Using English → language proficiency → ability
   Teaching Mathematics and Science → technology

4. Now you have a beginning list of key words and phrases to begin searching for information.

5. Leave yourself room on the chart to add more key words and phrases as you discover them in your searching.

1.2.3 Getting an Overview

When getting an overview of the research topic, it is often recommended that you ask yourself some of these questions:

*Why do an overview?*
*How do I find one?*
*What do I look for in an overview?*

Getting an overview is finding a source of information that gives you a simple understanding about a topic without telling you all about it in great detail. An overview should have some basic facts and be in clear enough language for you to
understand. It should answer the questions; "who", "what", "when" and "where", and only briefly some of the "why" and "how" questions. Think of an overview as a picture taken from a distance where all of the details are not in focus.

Why do an overview?

Basically, getting an overview will help you begin to

- to get a general understanding of your topic.
- to know what kinds of subtopics are within the general topic.
- to ask some questions that you will answer later in the research process.
- to focus your topic into one you can handle in your project.

How do I find sources for an overview?

Encyclopedias are one of the best sources of overviews. They organize information into subtopics and don't go into too much detail.

Encyclopedias are available in print and on the computer. Some articles are very long, so if you are using one on the computer, don't just print the whole article. Select the sections that you need and just print those. Ask a library staff person for instruction if you are not familiar with using encyclopedias.

You can also find some good overviews on websites, but you need to be able to evaluate the information you find to make sure it is accurate information. It is better to use an encyclopedia first, get some basic information, and then search for a website. You can compare the website information to that in the encyclopedia to make sure it is accurate. Books and journal can also be very good overview sources. They often provide review of literature, charts, and graphs, as well as time lines and glossaries to aid your understanding of a topic. They can provide a good foundation for understanding your research topic better.

What do I look for in an overview?
Notice the way the information has been organized within the overview. Take notes on the headings and subheadings that are used to subdivide the information. These can give you some possible ways to help focus the topic of your research to look at the table of contents for possible sub-topics. From the overview, select a subtopic that interests you. Once you have an understanding of the general subject and a particular subtopic, you will be able to narrow your topic.

1.2.4 Making Source Cards

Source cards are index cards (you can also use notebook pages, a word processing document or database document) on which you put all of the information you will need about all the sources you use.

Why will I need them?

Source cards will help you to:
- identify the sources of quotations and ideas for citing your sources later (giving credit to your sources).
- find sources again if you need them.
- make your works cited (a list of the sources from which you used borrowed material in your research).

1.2.5 Focusing a Research Topic

When you focus on a research topic, it means you are narrowing (or sometimes broadening) a topic so that you can demonstrate a good understanding of it, including enough examples and important details, within the size limits of the research project you are required to produce. You need to satisfy both yourself and your instructor that you know what you are talking about. If your instructor gives you no limits, make them for yourself.
This is often the number one pitfall in the research process. If you pick a topic that is too broad, you will not only have trouble selecting what to include from a huge selection of material available, you will also probably leave out some critical information that will make it apparent that you don’t really know what you are researching about.

On the other hand, if you pick a topic that is too narrow, you won’t find enough to write about and end up repeating yourself.

The process of focusing a topic takes practice, so be patient with yourself. It is challenging when you don’t know too much about a topic. It will get easier as your knowledge base increases. Remember that the research process is a recursive one which means that you may need to revisit your topic choice more than once if you find it doesn’t work out.

There are different ways to focus your topic. Whichever method you choose (and you may do a combination of them) try to pick something that interests you in some way. Even if the overall subject doesn’t seem interesting, you can pick an interesting angle on it.

For example:

Say you have to do a research project about how children learn English grammar, and you don’t know a thing about it, nor are you at all interested in it. Try to find a subtopic that connects to your interests.

If you like children, try comparing young Malay children and Chinese children.

If you like grammar, look how children learn grammar and how their learning can be influenced by teachers

If you like grammar, find out what elements of grammar young children learn first.
1.2.6 Writing a Statement of Purpose

A Statement of Purpose is a sentence that you write, which states, in some detail, what you want to learn about in your research project. The statement guides you as you work so that you will read and take notes only on what’s needed for your project.

Writing a statement of purpose will do 3 things to help you:

- get more interested in your project.
- keep you from getting overwhelmed and panicky at all the information you may find.
- help you develop a Thesis Statement, which comes later on in the research process.

After you focus your topic, after some overview reading, write a sentence that says what you want to learn about. Don't worry if you're not totally sure, your Statement of Purpose may change 3 or 4 times before you're done. To write the sentence, first answer these questions for yourself as best as you can:

1. What is my interest in the topic?
   (There will always be something that can interest you)

2. What do I specifically want to learn about my topic?
   (Don't overwhelm yourself with too many things. Two or three are plenty.)

Start your Statement of Purpose with words like "I want to learn about..."

For example:

A student was very concerned about the declining proficiency in English among secondary school students and wanted to know if the government is doing anything to arrest it.
Her Statement of Purpose was this: I want to learn about what is being done by our government to arrest the declining proficiency in English among secondary school students.

This Statement of Purpose will lead her to eventually write a Thesis Statement in which she will be able to make an assertion (a statement she can defend) and support with the evidence she has gathered in her research.

Her Thesis Statement may sound something like this: "In Malaysia, government language planning plays an important role in arresting the declining proficiency in English among secondary school students." Or, conversely, "The Malaysian government language planning and policy has little effect in the fight against declining English language proficiency among secondary students."

Whichever the case, she will use the evidence she has gathered in her research to prove her Thesis Statement.

Make sure your Statement of Purpose is specific enough.

<table>
<thead>
<tr>
<th>A Bit Too General</th>
<th>Much Better, More Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;I want to learn about English language planning and policy.&quot;</td>
<td>&quot;I want to know what role the government plays in language education planning.&quot;</td>
</tr>
<tr>
<td>&quot;I want to know about the decline in English language proficiency in Malaysia.&quot;</td>
<td>&quot;I want to know some ways to arrest the decline in English Language proficiency in Malaysia.&quot;</td>
</tr>
</tbody>
</table>
1.2.7 Writing a Thesis Statement

A thesis statement is a statement that you can prove with evidence. It is not a simple statement of fact. A thesis statement should be the product of your own critical thinking after you have done some research. Your thesis statement will be the main idea of your entire project. It can also be thought of as the angle or point of view from which you present your material.

You will develop a thesis statement about your research topic after you have written a Statement of Purpose and done some actual research into the topic. You will then present your thesis statement in your introduction, prove it with evidence in the body of your paper, project, or presentation, and finally restate it along with a summary of your evidence in your conclusion.

How do I write the thesis statement?

- Look again at your Statement of Purpose
- Look at the kinds of information you have been finding while taking notes.
- Decide what kind of statement you have enough evidence to prove. (Be sure that you have done enough research to make a strong argument. You could be challenged.)
- Write that as your thesis statement.

There are many ways to approach writing a thesis statement. Just make sure that you can support it with good evidence from reliable sources.

Here are some ways to approach it:

- Define a problem and state your opinion about it
- Discuss the current state of an issue or problem and predict how it might resolve
• Put forth a possible solution to a problem
• Look at an issue/topic from a new, interesting perspective
• Put out your ideas about how something was influenced to be the way it is or was (language learning, language policy, learning strategies)

<table>
<thead>
<tr>
<th>Statement of Purpose</th>
<th>Possible thesis statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;I want to learn about the learning strategies students at UPM use.&quot;</td>
<td>The learning strategies of UPM students have been heavily influenced by library faculties available.</td>
</tr>
<tr>
<td>&quot;I want to find out some ways to enhance English language learning.&quot;</td>
<td>English language learning can be enhanced with early English language education in the public school system.</td>
</tr>
</tbody>
</table>

### 1.2.8 Writing up the research

Writing up the research entails putting all of your research together in a format that you can present to people. This will be discussed in later units.

• Before you begin writing, take some time to put all of your source note cards and borrowed material (pictures, etc.) in the order they will appear in your project. You can use an outline as a guide for this important step. You don't want to be searching for these things as you are writing.
• Use your note cards to get borrowed material (quotes, statistics, etc) to use as evidence. You may also include pictures here from other sources. Remember that you need to cite all borrowed material immediately after you use it.

1.2.9 Citing Sources

Citing your sources is way to let people know where your information comes from. Whenever you use material that you got from another source in your research project, you must let your audience know immediately where it came from, right after you use it. It lets your reader know that you want to make clear to them which are your ideas/words/pictures, etc. and which are someone else's. If you do not cite your sources, you are committing plagiarism (Plagiarism is an unlawful act in which you use someone else's work as if it is your own. It can get you in big trouble. Avoid it).

Citing your sources also gives your research a lot more credibility because you obviously didn't just make up what you are claiming. You did your research! Your reader can also check the original source for more information or for accuracy if they want to challenge you.

You must cite your sources when using the following kinds of materials, in whole or in part:

• Direct quotations whether in written or oral formats (includes stories, speeches, fiction and nonfiction)
• Paraphrased quotations (these are quotes whose words you have changed somewhat)
• Statistical Data (numbers about things)
• Images that are attributed to someone (includes cartoons, photos, maps, artwork, computer graphics—but not free “clip art”)
• Song lyrics
• Original ideas that are attributed to someone else, even if you put them in your own words
Important details discussed in this unit

This unit highlighted the important details that are part of the research process. It suggests that for most research assignments, you will want to follow these basic steps:

1. select and narrow a topic
2. gather background information
3. locate in-depth information
4. get current information

Some comments

I would like to make some comments that would be helpful for you when you begin the research process.

First think of yourself—is the research you want to conduct something you believe in? Is it something that you sincerely want to learn more about? Does it intrigue you? Even when you’re given a set topic in advance, you can always frame it to suit your needs and style.

Then think of the audience - will other people familiar with this subject care to read what you’re writing? Do you have something to say or are you babbling and wasting space? Use common sense and intuition here. Research papers were never intended to be useless torture, so let them work for you as well as for your readers.
Conclusion

Researchers have to negotiate their way through their research. The processes identified in this unit are steps that should be taken to ensure that the research account is fair, accurate and relevant.

Activity 1

1. Exercise 1.5 (page 7 from text)
2. Exercise 1.8 (from 10 from text)
3. For the third activity, you have to generate two to three ideas for a research study, and then turn these topics into well stated research problems
Answer for activities 1 and 2- refer to back pages of text

Answer for activity 3- These are some possible steps you should have taken. First, you should have looked through the titles of articles in some issues of research journals related to your topic. Second, you could have looked through the table of contents of a major textbook in your field. Then, based on your own experiences and interests generate one or two research topics, and state the research problem for each.
UNIT 2
FROM CONCEPTUALISING A RESEARCH PROBLEM TO FORMULATING A STATEMENT OF PROBLEM

Introduction
In this unit more information is given to the research process by focusing on the choice of a topic in order to conceptualise the research. Through this conceptualising you are then able to identify a workable research problem. All these information could be synthesised in the section, statement of the problem, which is usually located in the 1st chapter of the research paper. The statement of problem extends from the thesis statement that you have formulated in Unit 1.

The topics in this unit are:
1. Locating a topic
2. Narrowing the topic
3. Formulating the Statement of Problem

Objectives of the Unit
From the selected topics, the following are the unit objectives:
1. To conceptualise a research problem
2. To identify a research problem
3. To formulate a statement of the problem
Topic 1: Locating a topic

In a research paper, as mentioned in Unit 1, topics can be assigned or chosen by you with the consent of the supervisor. The first discussion with your supervisor usually evolves around what you wish to research. You are expected to have some ideas of some broad topics that you would like to research into. However, they may still be hazy. Some students have the notion that you can have a free-choice topic for the project. This is only true to some extent. The supervisors will inform you that whatever topics you wish to research on should be related to the study of the English language. In other words, you are expected to draw on your exposure as an undergraduate to the courses that are related to your English language programme, for example, linguistics, literature, discourse studies and so on.

Topics may be familiar or unfamiliar. If the topic is familiar, it may be easier to write, but chances are that many other people would already have read about it also and what you want to write about be not be very interesting unless you can find a new angle. If the topic is unfamiliar it does not mean that you cannot write about it. As long as you follow a plan, it can be done though it may be more challenging. However, it is likely that it would be a more interesting paper.

1.1 Take stock of what you know.

Whether the topic is familiar or unfamiliar, you will want to take stock of what you already know. Start from what is known, however much or little. Good resources are:

- your textbook
- supplementary course materials
- library resources

The table of content, index page, glossary and bibliography are useful starting points. Sometimes reading other theses especially the section on recommendations for further studies provides good ideas.
1.2 Take stock of your interest

Being passionate about a certain topic is always a good starting point. It provides motivation which you can tap on especially when the going is tough. Being motivated about the topic gives sustaining power. If you are not sure where your passion lies, ask yourself what do you care about or what may be a special concern to you, especially one that intrigues you. Alternatively, you may want to think more long term – there may be jobs or careers that you may consider after you graduate, or they may be vocational interests if you are already working. The primary factor is you should want to learn more about the topic that you choose.

1.3 Ensure that the topic is manageable

Doing research is a practical business. What you know and what you are interested in must also be translated into something ‘doable’. The word doable means that the scope must be defined such that you can complete it with the time frame you are given. If it entails a budget, then the budget must be also realistic. Otherwise the whole process of gathering information can be very frustrating. Below is a summary of some recommendations that would help you to avoid the problem:

1. Do not try to hand up something you have already handed up in another course. You may be found out and you will not get a good grade for not trying. If you wish to you can use it for a further extension of the work by giving it a new angle.

2. Do not plagiarise by using somebody’s work without acknowledgement. This is serious academic dishonesty which could lead to an “F”.

3. Do not choose a topic that is too broad. A scope that is narrowed is more workable. Research focus helps in showing that you are practical and a good manager of your own work. In addition, a focused topic illustrates a defined personal attitude which speaks of originality which is a quality that supervisors would welcome.

4. Do not choose topics that many other students have already researched on. It will be boring for both you and the supervisor. The supervisor should be able to help you in giving the topic a slant that would be more stimulating.
5. Do not choose a topic that is unsuited to your audience. In some ways an academic exercise does conform to audience expectations to a large extent. Avoid topics that are too controversial or emotional as they may cloud your judgments and as a result fail to present objective evaluations that can be considered as sound arguments.

6. Do not work on something that doesn’t give you enough available information. This can happen when the topic is too obscure, trivial or contemporary. As a result, there be not be much written about it or sources about the topic may not have stood the test of time in terms of objectivity and scholarly commentary.

7. Do not just use one source for information on your topic. This will not encourage you to explore the possibilities and give you the scope for you to think about.

Exercise for Self Evaluation
List down ten topics that are language related as you can. Beside the topic indicate the source for the topic.

Answers
Answers will differ. The topics however will give you some ideas about your research directions. After your listing you may want to rank them according to your interest.
**Topic 2: Narrowing the topic**

A topic is a initial selection for your research. It merely indicates a general field of interest. The topic has to be more focused in order for it to be workable. In narrowing a topic, it helps to recall the techniques of writing and to use any of them so that you will find the subject that you want to research on. They are:

- Freewriting
- Outlining
- Free association
- Clustering
- Five Ws in journalistic writing

Do refer to your writing module in your course to revise the techniques.

To work through an example, the technique of using the 5 Ws is illustrated.

**Example 1**  
**Talk Shows on Televisions**

<table>
<thead>
<tr>
<th>Who?</th>
<th>The host</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Panel constituent/organisation</td>
</tr>
<tr>
<td></td>
<td>Audience</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What?</th>
<th>Topics (language for unity, language at the workplace)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Themes (writing to persuade, motivational language)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Where?</th>
<th>Studio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Impromptu</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When?</th>
<th>Election time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Festivals</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Why?</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Propaganda</td>
</tr>
<tr>
<td></td>
<td>Commercial</td>
</tr>
</tbody>
</table>

From the above example, another 5Ws framework can be developed as follows:

**Example 2**  
**Language at the workplace in TV programmes**

| Who?          | The managers |

| What?         | In interacting with their subordinates |

| Where?        | XYZ Company |

| When?         | Oral interactions |
Why? Office Discourse (giving instructions, information, enquiries)

Based on this narrowing, a decision can be made about the subject of investigation, for example, oral discourse in XYZ Company between managers and subordinates in a TV programme.

**Exercise for Self Evaluation**

Use a different technique from the 5Ws to narrow down a topic you have identified. Be sure you are able to arrive at a focus that interests you.

**Answers**

Your narrowing process may go into a few levels until you are happy with the result. If you feel dissatisfied, abandon the topic and start on something else. Sometimes the initial exploration may end up as a dead end. Do not flog a dead horse. It is more fruitful to try something new to give yourself another option.

**Topic 3: Formulating the Statement of Problem**

The statement of problem conceptualises the research. It appears in the 1st chapter to provide a convincing case regarding the extent and magnitude of the study. It identifies the essential conditions or issues that have led you to the intended investigation. In other words, it provides a rationale for the study. Three functions characterise this statement.
- Use of supporting evidence to describe clearly the nature and extent of the problem
- Provide circumstances that create a need for investigation
- Identify a current gap in the field of study

Another simple way to examine the structure of the statement is look at it in terms of providing the following:

- A note about the problem
- An existing debate of the problem
- The gap in knowledge

An illustration of this section of the research report is presented below.

(Title of the research: A Study of the Cloze Procedure in the Assessment of reading comprehension of Undergraduates in Universiti Putra Malaysia)

<table>
<thead>
<tr>
<th>Statement of the Problem:</th>
<th>Analysis of the Structure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To test the various aspects of reading comprehension of a selected passage, the most</td>
<td>A note about the problem</td>
</tr>
<tr>
<td>popular test form in Malaysia educational system is the objective multiple-choice answer.</td>
<td>An existing debate of the problem</td>
</tr>
<tr>
<td>Such reading tests have been criticised to be difficult to construct and also to be non-</td>
<td></td>
</tr>
<tr>
<td>reflective of reading as an on-going process. To many researchers the psycholinguistic</td>
<td></td>
</tr>
<tr>
<td>approach provides a more viable definition of reading and leads to a more solid basis for</td>
<td></td>
</tr>
<tr>
<td>reading test construction and measurement. A strategy for this approach is the cloze</td>
<td></td>
</tr>
<tr>
<td>procedure.</td>
<td></td>
</tr>
<tr>
<td>The general consensus of studies into and with cloze procedure has been that it is a</td>
<td></td>
</tr>
<tr>
<td>reliable and valid measure of readability and reading comprehension for native speakers</td>
<td></td>
</tr>
<tr>
<td>of English. With non-native speakers the use of the cloze procedure is still largely</td>
<td></td>
</tr>
<tr>
<td>experimental. Research so far has largely concentrated on correlation studies with</td>
<td></td>
</tr>
<tr>
<td>standardised measures of EFL (English on Foreign Language) proficiency (cf. Oller, 1973,</td>
<td></td>
</tr>
</tbody>
</table>
has been found to correlate well with those tests particularly with the subsections of dictation and reading comprehension. In most of these research the open-ended cloze has been used. But in an ESL situation, much emphasis is on passive comprehension. As Potter points out, "all of us, as language teachers, are familiar with the learner who can understand but who is not sufficiently master of the language to make a reply". The open-ended cloze procedure demands production as a measure of reading comprehension. Moreover, some items in an open-ended cloze are inherently too difficult even for a native speaker. In the search for a better measure, the multiple-choice cloze procedure has been suggested. It purportedly has the advantages of the cloze procedure and would be a valid and reliable measure without necessitating overt language production. But little research has been done to prove or disprove such claims.
**Exercise for Self Evaluation**

Read the information below and divide the information according to the structure given above (you may use either of the frameworks provided).

*(Title of the paper is Using Transitions to Measure the Quality of Writing by Marlena Abdullah)*

<table>
<thead>
<tr>
<th><strong>Statement of the Problem:</strong></th>
<th><strong>Analysis of Structure:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Good quality writing depends on elements such as organization, grammar, contents, coherence and style. In quality compositions, ideas are clarified and organized into a unified whole with each idea having some relationships to the whole. Writers of compositions especially those at tertiary level need the mastery of skills beyond mere grammatical competence in achieving quality writing. According to Ross Winterowd (1970), inability to write sentences arises not from one’s lack of subject matter. To him, “everyone is in the repository of an infinitude of subject matter”. He contended that it was due to one’s inability in structuring the subject matter that needs attention. Although it cannot be denied that the grammatical, syntactical and organizational elements are important, it is felt that coherence is a more important feature in the writings of tertiary level students. Students who never encountered problems in grammar may have difficulties in relating their ideas coherently. Winterowd had stipulated that constitute the grammar of coherence for all units of discourse. To see whether Winterowd’s assertion stands, the writer therefore attempts to analyse the compositions of some TESL undergraduates in UPM to see whether they have the ability to manipulate the categories of transitions as described by Winterowd, in structuring their sentences and paragraphs into a coherent whole, thereby achieving quality in writing.</td>
<td></td>
</tr>
</tbody>
</table>
Exercise for Self Evaluation

Read the information below and divide the information according to the structure given above (you may use either of the frameworks provided).

(Title of the paper: Using Transitions to Measure the Quality of Writing by Marla Abdullah)

<table>
<thead>
<tr>
<th>Statement of the Problem:</th>
<th>Analysis of Structure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good quality writing depends on elements such as organization, grammar, contents, coherence and style. In quality compositions, ideas are clarified and organized into a unified whole with each idea having some relationships to the whole. Writers of compositions especially those at tertiary level need the mastery of skills beyond mere grammatical competence in achieving quality writing. According to Ross Winterowd (1970), inability to write sentences arises not from one’s lack of subject matter. To him, “everyone is in the repository of an infinitude of subject matter”. He contended that it was due to one’s inability in structuring the subject matter that needs attention. Although it cannot be denied that the grammatical, syntactical and organizational elements are important, it is felt that coherence is a more important feature in the writings of tertiary level students. Students who never encountered problems in grammar may have difficulties in relating their ideas coherently. Winterowd had stipulated that constitute the grammar of coherence for all units of discourse. To see whether Winterowd’s assertion stands, the writer therefore attempts to analyse the compositions of some TESL undergraduates in UPM to see whether they have the ability to manipulate the categories of transitions as described by Winterowd, in structuring their sentences and paragraphs into a coherent whole, thereby achieving quality in writing.</td>
<td>Provide circumstances that create a need for investigation</td>
</tr>
<tr>
<td></td>
<td>Use of supporting evidence to describe clearly the nature and extent of the problem</td>
</tr>
<tr>
<td></td>
<td>Identify a current gap in the field of study</td>
</tr>
</tbody>
</table>
Conclusion
In starting a research, time must be spent on its conceptualisation. A strong starting point gives the research a firm foundation. As a result, the researcher is well-directed right from the beginning. He or she is clearly focused on the topic and its accompanying research problem. The rationale of the study informs the reader of the researcher’s intention. Finally the researcher is able to translate his thoughts into a structured statement of the problem. The structure itself is not totally rigid as illustrated in the examples but they are seen to fulfill certain expectations of the reader. The relationship between the reader and writer is firmly established in this section for the research process to move on to the next stage; which is the establishing of the aims of the study and the related formulation of research questions, and hypotheses if appropriate.
UNIT 3
STATING THE AIMS OF THE STUDY, RESEARCH QUESTIONS AND HYPOTHESES

Introduction to the Unit

In this unit, the research process moves to working out the aims of the research, research questions and hypotheses. These statements are related to the nature of research—essentially in terms of the quantitative and qualitative aspects. These aspects determine the manner the statements are formed. In connection with the framing of the various statements, variables are explained in the context of research.

The topics in this unit are:
1. Stating the Aims of the Study
2. Formulating Research Questions
3. Formulating Hypotheses

Objectives of the Unit

From the selected topics, the following are the unit objectives:
1. To state the aims of the study
2. To formulate research questions
3. To formulate hypotheses
Topic 1: STATING THE AIM OF THE STUDY

1.1 Key Elements Common to both Quantitative and Qualitative Approaches

The aim of the study gives a preamble to the specific stand taken by the researcher with regard to the focus of the research. This phrase, Aim of the Study, can be replaced by Objectives of the Study or Purpose Statement. They are used interchangeably in this unit. The Aim of the Study may be regarded as the most important statement in an entire research study as it forms the thesis or central argument of the paper. It warrants a separate section on its own.

Much of what is expressed and how successfully the message is conveyed depend on the choice of words used. Common features to both approaches (quantitative or qualitative) are those listed below:

Use words such as "purpose", "intent" or "objective" to signal attention. The focus usually begins on a more general perspective on a single phenomenon. E.g. The purpose of this study is to examine...... The study hopes to establish.... and then only proceed to more specific statements.

Use action verbs. This helps to focus on the action involved in the research. Words like examine is used over examination, investigate over investigation and describe over description and so forth.

Use neutral words phrases. Let the respondent describe his or her experience before a judgment is made about the nature of the work. The idea is that the researcher takes an initial objective stand and not be bias about his or her research at the outset. E.g. "experiences of individuals" rather than the "successful experiences of an individual."

Provide a general working definition. Some terms may need to be defined to provide working definitions. This helps to disambiguate terms used in the study and it also helps to make known the position taken by the researcher with regard to how the terms are applied to the research.
Mention the specific type of strategy of inquiry. The reader expects a full description of the methods used to gather data.

Mention the participants and the research site. This adds credibility to the research such that the information anchors the study on 'real' people and place for data collection.

1.1 A QUALITATIVE PURPOSE STATEMENT

A qualitative study usually:
Let the design emerge with the intent.
Does not fore-front a theory.

Example:
Kos (1991) conducted a multiple case study of perceptions of reading-disabled middle-school students concerning factors that prevented these students from progressing in their reading development. Her purpose statement reads as follows.

The purpose of this study was to explore affective, social, and educational factors that may have contributed to the development of reading disabilities in four adolescents. The study also sought explanation as to why students' reading disabilities persisted despite years of instruction. This was not an intervention study and, although some students may have improved their reading, reading improvement was not the focus of the study. (Kos, 1991, pp. 876-877)

The aims of the study above are clearly anchored on a descriptive approach whereby numbers would not be the focus in terms of data explanation.
1.2 A QUANTITATIVE PURPOSE STATEMENT

On the other hand, a quantitative purpose statement makes clear the following procedures:

Fore-front the theory, model, or conceptual framework to test in the study. A framework provides a solid explanation or justification upon which the research is based on. It scaffolds the research.

Identify the variables. The variables involved are clearly identified so that control over the design is obvious. This contributes to the validity of the study. It establishes the influencing attributes so that the results can then be linked back to the operation of the selected variables. In addition, it serves to inform readers about how the researcher is able to defend against unintended changes that may affect the results of the research. The connection between variables is also clearly identified as it helps reveal the relationship(s).

Give a general definition for each key variable. Similar to the defining of terms, the variables are given the same treatment.

Use words to show the strategy of inquiry for data collection, analysis, and the process of research. The research methods used and data interpretation are associated, by and large, with figures and statistics. As such the methods and statistical procedures are clearly defined. This helps in replication studies and contributes rigour to the research.

Example

Given below is an example of the Aim of Study and its structural analysis to illustrate the key elements found in this section.

<table>
<thead>
<tr>
<th>Aim of Study</th>
<th>Structural Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>This study was undertaken with a view to learning</td>
<td>Fore-fronting the conceptual</td>
</tr>
<tr>
<td>about the use of transitions in relation to quality in written English compositions of some TESL</td>
<td>framework</td>
</tr>
<tr>
<td></td>
<td>Participants and research</td>
</tr>
</tbody>
</table>
undergraduates.
The study attempts to investigate the following points:

| a. How grammar and coherence are related to the quality of writing |
| b. The **frequency of use** for the various transitions in linking T-units and paragraphs into a coherent whole. (Winterowd’s categories of transitions are used as reference). |
| c. The **relationship** between composition length and the levels of proficiency. |

<table>
<thead>
<tr>
<th>site</th>
<th>Action verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>The words in bold state the strategy of inquiry</td>
<td></td>
</tr>
</tbody>
</table>

The constructs are identified:

- Grammar and coherence
- T-units and paragraphs
- Identification of Winterowd’s categories of transitions as a conceptual framework

Relationship between variables is stated.
**Self Evaluation Exercise 1**

Examine the Aim of Study and perform a structural analysis of the text.

<table>
<thead>
<tr>
<th>Aim of Study</th>
<th>Structural Analysis</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
</tr>
</tbody>
</table>
**Answers to Self Evaluation Exercise 1**

<table>
<thead>
<tr>
<th>Aim of Study</th>
<th>Structural Analysis</th>
</tr>
</thead>
<tbody>
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<td>(1) Action verbs (2) Statement of method of inquiry (3) Identification of construct of investigation (4) participants and research site (5) conceptual framework (6) Method of inquiry Identification of variables</td>
</tr>
</tbody>
</table>
1.1 Definition of Terms

This section becomes necessary when the researcher offers working definitions that guide the study. This means that the terms used have a specific meaning. Not all terms need to be defined in a report. If your audience is an expert, basic terms need not be explained such as the acronym TESL. In the example of Aim of Study provided above, the terms coherence and T-Unit are likely defined in this section. The term coherence is very broad and needs to be defined for the purpose of the study. T-unit is specialized terminology which is unlikely to be known by many. Thus it also warrants a definition.

Self Evaluation Exercise 2

In the example provided for Aim of the Study in Exercise 1, what are the terms you would expect to be defined by the researcher?

Answers to Self Evaluation Exercise 2

the multiple-choice cloze
randomly deleted cloze
traditional multiple-choice reading test
Traditional reading levels (independent, instructional and frustration levels).

1.3 Identifying Variables

Many researchers use different terms to describe the variables used in a study. Creswell describes variables as follows:
- **Independent variables** are variables that (probably) cause, influence, or affect outcomes.

- **Dependent variables** are variables that depend on the independent variables; they are the outcomes or results of the influence of the independent variables.

- **Intervening or mediating variables** "stand between" the independent and dependent variables, and they mediated the effects of the independent variable on the dependent variable.

For example, if students do well on a research methods test (dependent variable), that result may be due to (a) their study preparation (independent variable) and/or (b) their organization of the study ideas into a framework (intervening variable) that influenced their grade on the test. The mediating variable, "organization of study," stands between the independent and dependent variables.

- **Control variables** play an active role in quantitative studies. These variables are a special type of independent variables that are measured in a study because they potentially influence the dependent variable. Researchers use statistical procedures (e.g., analysis of covariance) to control for these variables.

They may be demographic or personal variables that need to be "controlled" so that the true influence of the independent variable on the dependent can be determined.

- **Confounding (or spurious) variables** are not actually measured or observed in a study. They exist, but their influence cannot be directly detected in a study.
Researchers comment on the influence of confounding variables, after the study has been completed, because these variables may have operated to explain the relationship between the independent variable and dependent variable, but they were not or could not be easily assessed.

Examples of variables:

**Topic:** How grammar and coherence are related to the quality of writing
Grammar and coherence are independent variables.
Quality of writing is the dependent variable.

**Topic:** The relationship between composition length and the levels of proficiency.
Composition length is the dependent variable
Levels of proficiency are the independent variables.

**Self Evaluation Exercise 3**

Read this part of the Aim of the Study again. Identify the independent and dependent variables in the study. What could be an intervening variable and what can be a control variable in this study?

This study also aims to throw some light on the cut-off points for cloze scores for three traditional reading levels (independent, instructional and frustration levels). Finally, it attempts to investigate the relationship between the MCE/SPM English grades with the cloze scores through correlation studies.
Answers to Self Evaluation Exercise 3
The independent variable is the different reading passages or the tests
Cloze scores – dependent variable
English grades – dependent variable

An intervening variable could be the degree of preparedness of students for the test
A control variable could be the scoring method for a subjective test. Thus it is important for scorers to be consistent in their scoring so that the effects of the independent variables on the dependent variable are accurately measured.

Topic 2: Formulating Research Questions

2.0 Broad Categories of Research Questions

Drew (1980) identified three broad categories of research questions. They are descriptive, difference and relationship questions. Each of them help to give the appropriate focus desired for the research.

2.1 Descriptive Research Questions

Descriptive research questions do not usually involve experimental designs.

Examples

1. What are the student's achievement levels (or grades) in English classes? (A descriptive question focused on the dependent variable of student achievement)

2. What are the student's prior grades in English classes? (A descriptive question focused on the control variable of prior grades)
3. What is the educational attainment of the parents of the eighth-graders? (A descriptive question focused on another control variable, educational attainment of parents)

2.2 Difference Research Questions
Difference questions as the name suggests, anchors on differences. In other words, it implies some comparison.

Examples:
- Are there differences between Malay L2 learners and Chinese L2 learners in the learning of English prepositions?
- Are there differences in the ways L1 writers compose expository essays compared to L2 writers?

2.3 Relationship Research Questions
Relationship questions are framed to examine the degree to which constructs are related to each other. The relationship may be between two or more constructs.

Examples:
1. Does critical thinking ability relate to student achievement? (An relationship question relating the independent and the dependent variables)
2. Does critical thinking ability relate to student achievement, controlling for the effects of prior grades in English and the educational attainment of the eighth-graders' parents? (A relationship question that relates the independent and the dependent variables, controlling for the effects of the two controlled variables)

2.4 FORMULATING QUALITATIVE RESEARCH QUESTIONS
- Ask one or two central questions.
- Relate the central question to the specific qualitative strategy of inquiry.
• Begin the research questions with the words “what” or “how” to convey an open and emerging design.

• Focus on a single phenomenon or concept.

• Use exploratory verbs in your objectives.
  
  o Discover (e.g., grounded theory)
  o Seek to understand (e.g., ethnography)
  o Explore a process (e.g., case study)
  o Describe the experiences
  o Report the stories

Examples of QUALITATIVE RESEARCH QUESTIONS

• How do early adolescent females read black literature?
• What are the group dynamics of peer review sessions engaged in process writing?

2.5 Formulating QUANTITATIVE RESEARCH QUESTIONS

In quantitative studies, investigators use research questions to shape and specially focus the purpose of the study. Research questions are interrogative statements which are built around selected variables.

The use of variables is typically limited to three basic approaches:

  o Compare groups on independent variables to see its impact on a dependent variable.
  o Relate one or more independent variables to a dependent variable.
  o Describe responses to the independent, mediating or dependent variables.
Examples of QUANTITATIVE RESEARCH QUESTIONS

- Does a relationship exist between reading strategy use between low proficiency and high proficiency students?
- For whom would training in speed reading be most effective, those at the primary school level or those at the secondary school level?
- What are the differences in reading and writing performance in English between students who have been exposed to the silent method and those who have not?

Self Evaluation Exercise 4
Given below are some research topics. Formulate three simple research questions to show a descriptive question, a relationship question and a difference question for each situation.

Example:
Research Topic: Background knowledge in reading
1. What role does background knowledge play in reading?
2. What is the relationship between background knowledge and age of readers?
3. Is there a difference in background knowledge between male and female young readers (17 – 20 years)?

Research Topic 1: Vocabulary and Reading Development
Research Topic 2: Strategies in language learning
Answers to Self Evaluation Exercise 4

Possible Answers:
Research Topic 1: Vocabulary and Reading Development
1. How do kindergarten readers acquire vocabulary in English?
2. Is immersion in pre-reading activities related to vocabulary acquisition?
3. Does having access to an electronic dictionary make a difference to vocabulary learning?

Research Topic 2: Strategies in language learning
1. What are the compensatory strategies used by weak L2 learners in speaking English?
2. Is the use of compensatory strategies related to gender?
3. What are the differences between compensatory strategies used by male students compared to those used by female students in natural speech?

Topic 3: Formulating Hypotheses

3.0 Functions and Forms of Hypotheses

Sometimes in quantitative studies, research questions are accompanied by hypotheses. Hypotheses are predictions the researcher holds about the relationship among variables. They serve the same function as research questions in providing a central focus to the research. One research question can give rise to one or more hypotheses.

If hypotheses are used, there are two forms that are usually used: null and alternative. A null hypothesis represents the traditional approach to writing hypotheses. It makes a prediction that in the general population, where no relationship or no difference exists between groups on a variable. Which form of the hypothesis is used depends on a position adopted by the researcher in terms of his views about the prediction. If the researcher believes that starting from the null position helps in establishing neutrality, then the null is preferred. If there is a strong likelihood that the findings will be directional, then an alternative hypothesis is
preferred. Having hypotheses help in focusing on the research problem. The researcher's role is to prove or disprove it and the answer becomes very straightforward. In other words, the hypothesis is either accepted or rejected as the outcome of the study.

3.1 Examples of null hypotheses

- A relationship does not exist between reading strategy use between low proficiency and high proficiency students.

- There is no difference in reading performance in English between students who have been exposed to the silent method and those who have not.

3.2 Examples of alternative hypotheses

- A relationship exists between reading strategy use between low proficiency and high proficiency students.

- There is a difference in reading performance in English between students who have been exposed to the silent method and those who have not.
Self Evaluation Exercise 5
The following are example research questions taken from the previous exercise. Formulate hypotheses based on each of them.

1. Research Question: Is immersion in pre-reading activities related to vocabulary acquisition?
   Null hypothesis:
   Alternative Hypothesis:

2. Research Question: Does having access to an electronic dictionary make a difference to vocabulary learning?
   Null hypothesis:
   Alternative Hypothesis:

3. Research Question: Is the use of compensatory strategies related to gender?
   Null hypothesis:
   Alternative Hypothesis:

4. Research Question: What are the differences between compensatory strategies used by male students compared to those used by female students in natural speech?
   Null hypothesis:
   Alternative Hypothesis:
Answers to Self Evaluation Exercise 5

1. Null hypothesis: Immersion in prereading activities does not improve vocabulary acquisition.
   Alternative Hypothesis: Immersion in prereading activities will improve vocabulary acquisition.

2. Null hypothesis: Having access to an electronic dictionary does not make a difference to vocabulary learning.
   Alternative Hypothesis: Having access to an electronic dictionary makes a difference to vocabulary learning.

3. Null hypothesis: There is no relationship between gender and the use of compensatory strategies.
   Alternative Hypothesis: There is a relationship between gender and the use of compensatory strategies.

4. Null hypothesis: There are no differences in the use of compensatory strategies between male students and female students in natural speech.
   Alternative Hypothesis: There are differences in the use of compensatory strategies between male students and female students in natural speech.

Conclusion

To conclude, a good researcher needs to be well-versed in stating the Aim of the Study. The researcher also needs practice in the formulation of clear and focused research questions according to the design he envisages to follow for data collection. Finally, he or she has the option of using hypotheses to accompany research questions that use the quantitative approach. Hypotheses provide a clear cut path for finding answers to research questions especially when a research question offers several perspectives that the researcher can examine.
UNIT 4
REVIEWING THE LITERATURE

Introduction

This unit will explain what a literature review is and offer insights into the form and construction of a literature review in the humanities and social sciences. It will show you that the "literature" of a literature review refers to any collection of materials on a topic, not necessarily the great literary texts of the world. The unit further explains that "Literature" could be for example, anything from a set of government pamphlets on Malay legal to scholarly articles on the declining of English proficiency among primary school students. The review does not mean that you must give your personal opinion on whether or not you liked the sources you reviewed.

The topics in this unit are:

1. elements of a literature review
2. forms of a literature review
3. constructing a literature review

Objectives

The objectives of this unit are to:

1. explain what a literature review is
2. describe the form and construction of a literature review
4.1 What is a review of the literature?

A literature review is an account of what has been published on a topic by accredited scholars and researchers. In writing the literature review, your purpose is to convey to your reader what knowledge and ideas have been established on a topic, and what their strengths and weaknesses are. As a piece of writing, the literature review must be defined by a guiding concept (e.g., your research objective, the problem or issue you are discussing). Always remember that a review of literature is not just a descriptive list of the material available, or a set of summaries.

Writing a review of literature allows you to enlarge your knowledge about a topic. The literature review will also allow you to gain and demonstrate skills in two areas:

1. **Information seeking**: the ability to scan the literature efficiently, using manual or computerized methods, to identify a set of useful articles and books and
2. **Critical appraisal**: the ability to apply principles of analysis to identify unbiased and valid studies.

Basically, a literature review must do these things:

- a. be organized around and related directly to the thesis or research question you are developing
- b. synthesize results into a summary of what is and is not known
- c. identify areas of controversy in the literature
- d. formulate questions that need further research

4.2 Purpose of a Literature Review

In the context of a research paper, the literature review provides a background to the study being proposed. The background may consider one or more of the following aspects depending on the research question being posed:

- To see what has and has not been investigated.
- To develop general explanation for observed variations in a behavior or phenomenon.
• To identify potential relationships between concepts and to identify researchable hypotheses.
• To learn how others have defined and measured key concepts.
• To identify data sources that other researches have used.
• To develop alternative research projects.
• To discover how a research project is related to the work of others.

In a broader context Hart (1998) lists the following purposes of a review:

• Distinguishing what has been done from what needs to be done;
• Discovering important variables relevant to the topic;
• Synthesising and gaining a new perspective;
• Identifying relationships between ideas and practice;
• Establishing the context of the topic or problem;
• Rationalising the significance of the problem;
• Enhancing and acquiring the subject vocabulary;
• Understanding the structure of the subject;
• Relating ideas and theory to applications;
• Identifying methodologies and techniques that have been used;
• Placing the research in a historical context to show familiarity with state-of-the-art developments.

The above purposes are not ranked in order of importance. In many cases, there may be merging of purposes. Regardless of the research methodology used, the purpose of the literature review remains the same. It is an essential test of the research question against that which is already known about the subject.

The literature review reveals whether or not a research question has already been answered by someone else. If it has, often the question needs to be changed or modified, so that an original contribution to the research is made.
The purposes of the review of literature are:

- to define and limit the problem you are working on
- to place your study in an historical perspective
  - to avoid unnecessary duplication
  - to evaluate promising research methods
- to relate your findings to previous knowledge and suggest further research

4.3 Organization of a review of literature

A literature review can be just a simple summary of the sources, but it usually has an organizational pattern and combines both summary and synthesis. A summary is a recap of the important information of the source, but a synthesis is a re-organization, or a reshuffling, of that information. It might give a new interpretation of old material or combine new with old interpretations. Or it might trace the intellectual progression of the field, including major debates. And depending on the situation, the literature review may evaluate the sources and advise the reader on the most pertinent or relevant.

A literature review is an evaluative report of information found in the literature related to your selected area of study. The organization of the review should include a description, summary, evaluation and clarification of the literature being reviewed. It should give a theoretical base for the research and help you (the author) determine the nature of your research. Works which are irrelevant should be discarded and those which are peripheral should be looked at critically.

Therefore, please note that a literature review is more than the search for information, and goes beyond being a purely descriptive piece of work. All works included in the review must be read, evaluated and analyzed, and relationships
between the literature and your field of research must also be identified and articulated.

Some questions you may want to ask yourself and think about as you examine and develop your literature review could be guided by the following:

- What is known about the subject?
- Are there any gaps in the knowledge of the subject?
- Have areas of further study been identified by other researchers that you may want to consider?
- Who are the significant research personalities in this area?
- Is there consensus about the topic?
- What aspects have generated significant debate on the topic?
- What methods or problems were identified by others studying in the field and how might they impact your research?
- What is the most productive methodology for your research based on the literature you have reviewed?
- What is the current status of research in this area?
- What sources of information or data were identified that might be useful to you?

Below is a general guide of a ‘good’ literature review and a ‘poor’ literature review.

<table>
<thead>
<tr>
<th>A ‘good’ literature review.....</th>
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</thead>
<tbody>
<tr>
<td>..... is a synthesis of available research</td>
</tr>
<tr>
<td>..... is a critical evaluation</td>
</tr>
<tr>
<td>..... has appropriate breadth and depth</td>
</tr>
<tr>
<td>..... has clarity and conciseness</td>
</tr>
<tr>
<td>..... uses rigorous and consistent methods</td>
</tr>
</tbody>
</table>
A good literature review, therefore, is critical of what has been written, identifies areas of controversy, raises questions and identifies areas which need further research.

A 'poor' literature review is:

- an annotated bibliography
- confined to description
- narrow and shallow
- confusing and longwinded
- constructed in an arbitrary way

According to Caulley (1992) of La Trobe University, the literature review should:

- compare and contrast different authors' views on an issue
- group authors who draw similar conclusions
- criticize aspects of methodology
- note areas in which authors are in disagreement
- highlight exemplary studies
- highlight gaps in research
- show how your study relates to previous studies
- show how your study relates to the literature in general
- conclude by summarizing what the literature says

Hart (1998) defines the review of literature as:

- The selection of available documents (both published and unpublished) on the topic, which contain information, ideas, data and evidence. [This selection is] written from a particular standpoint to fulfill certain aims or express certain views on the nature of the topic and how it is to be investigated, and
• The effective evaluation of these documents in relation to the research being proposed (p. 13).

4.4 Why do we write literature reviews?

We write literature reviews because they can become a handy guide to a particular topic. Literature reviews can give you an overview or act as a stepping stone. For professionals, they are useful reports that keep them up to date with what is current in the field. For scholars, the depth and breadth of the literature review emphasizes the credibility of the writer in his or her field. Literature reviews also provide a solid background for a research paper’s investigation. Comprehensive knowledge of the literature of the field is essential to research papers.

Some of the questions the review of the literature can answer


4.5 How to conduct a review of literature

The whole process of reviewing includes:
a. Searching for literature
b. Sorting and prioritizing the retrieved literature
c. Analytical reading of the literature
d. Evaluative reading of literature
e. Comparison across studies
f. Organizing the content
g. Writing the review of literature

4.5.1 How to begin searching for literature

1. Develop a search strategy

Defining the topic - In order to begin your literature review you must first define your research question. What is the purpose? What does it mean? What are the key words? Are there other words which could be used, such as synonyms, variations in spelling? What do you already know about the topic? What is the scope? Do you need everything ever written in English on this topic, or just the last ten years?

Compiling a list of keywords - Before beginning a search for information, it is important to develop a search strategy that will most effectively locate useful, relevant information. This will often involve breaking down an essay or research question into:

keywords or phrases; entering your search; and evaluating your results to determine whether you need to employ various strategies to broaden, narrow or otherwise modify your research.

Analyzing the research topic usually involves making a list of keywords or phrases. You will need to include all the key concepts or ideas contained within the research question. It might be useful to include alternative ways of phrasing and expressing concepts and ideas. Think about both general terms and very specific
terms for broadening and narrowing your search. The keyword or phrase is the basic unit of any search. You may find it helpful to consult subject dictionaries and encyclopedias, or a textbook glossary for the common terminology of the subject area. The use of an index and/or thesaurus is also advisable to establish the useful terms.

2. Identify Resources - Information is available in a number of formats. It is important for you to understand the significance of various formats so that you know what will best suit your information gathering requirements.

- Books
- Reference Materials
- Journals
- Conference Papers
- Dissertations
- Internet
- Indexes/Abstracts Printed
- Electronic Databases
- Government publications
- Theses

4.5.2 Ask yourself questions like these:

1. What is the specific thesis, problem, or research question that my literature review helps to define?
2. What type of literature review am I conducting? Am I looking at issues of theory? methodology? policy? quantitative research (e.g. on the effectiveness of a new procedure)? qualitative research (e.g., studies)?
3. What is the scope of my literature review? What types of publications am I using (e.g., journals, books, government documents, popular media)? What discipline am I working in (e.g., linguistics, sociology, education)?
4. How good is my information seeking? Has my search been wide enough to ensure I've found all the relevant material? Has it been narrow enough to
exclude irrelevant material? Is the number of sources I've used appropriate for the length of my paper?

5. Have I critically analyzed the literature I use? Do I follow through a set of concepts and questions, comparing items to each other in the ways they deal with them? Instead of just listing and summarizing items, do I assess them, discussing strengths and weaknesses?

6. Have I cited and discussed studies contrary to my perspective?

7. Will the reader find my literature review relevant, appropriate, and useful?

4.5.3 Find similarities and differences between studies at different levels, e.g.:

- philosophy
- methodology
- methods
- types of data
- data analysis
- interpretation

4.5.4 Set out your thinking on paper through maps and trees.

<table>
<thead>
<tr>
<th>Feature map</th>
<th>Classifies and categorizes your thought in tabular form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept map</td>
<td>Links between concepts and processes, or shows relationship between ideas and practice</td>
</tr>
<tr>
<td>Tree construction</td>
<td>Shows how topic branches out into sub-themes and related questions or represents stages in the development of a topic</td>
</tr>
</tbody>
</table>

4.6 Some Possible Ways of Organizing the Content of a Literature Review

There are diverse ways of structuring a literature review depending on your preferred mode of thinking. They are:

**Chronological organization**

The discussion of the research articles is ordered according to an historical or developmental context.
The 'Classic' studies organization
A discussion or outline of the major writings regarded as significant in your area of study. (Remember that in nearly all research there are 'benchmark' studies or articles that should be acknowledged).

Topical or thematic organization
The research is divided into sections representing the categories or conceptual subjects for your topic. The discussion is organized into these categories or subjects.

Inverted pyramid organization
The literature review begins with a discussion of the related literature from a broad perspective. It then deals with more and more specific or localized studies which focus increasingly on the specific question at hand.

4.7 What are some tips for writing literature reviews?

4.7.1 Write and rewrite
Since rewriting is always necessary, the first draft does not need to be written in a linear fashion. When one area of the writing proves difficult or premature, it is perfectly acceptable to move to another area, and complete the writing of the review in a non-linear fashion which can be reorganized in the final draft. (Generally, the introduction or abstract is written last).

4.7.2 Edit and rewrite
Allow time for editing so that the work is clear, concise, and consistent. Avoid jargon that will be unclear to the audience, and always prefer the smaller word to the bigger. To test the work’s clarity, find an outside reader and read the work aloud as well.

4.7.3 Write the conclusion
The conclusion should convey and summarize insights learned during the literature review. While the interaction between the research question and the relevant
literature is foreshadowed throughout the review, it is usually not directly stated until the conclusion. There, the researcher can communicate the new knowledge gained after the review by demonstrating the relationship between the research question and the reviewed literature.

4.7.4 Avoid these Pitfalls
- Vagueness due to too much or inappropriate generalizations
- Limited range
- Insufficient information
- Irrelevant material
- Omission of contrasting view
- Omission of recent work

Important points

A literature review is a piece of discursive prose. It is not a list describing or summarizing one piece of literature after another. It is usually a bad sign to see every paragraph beginning with the name of a researcher. Instead, organize the literature review into sections that present themes or identify trends, including relevant theory. You are not trying to list all the material published, but to synthesize and evaluate it according to the guiding concept of your thesis or research question.
Conclusion

The purpose of a literature review is to convey to the reader what knowledge and ideas have been established on a topic and what are the strengths and weaknesses. The literature review allows the reader to be brought up to date regarding the state of research in the field and familiarizes the reader with any contrasting perspectives and viewpoints on the topic.

Initially, you may read quite broadly on the topic to enrich your understanding of the field. This is useful for refining your topic and establishing the perspective that your research will take. For example, reading broadly may help you work out where there are gaps in the research, which may provide you with a niche for your research. It may also enable you to establish how your research extends or enhances the studies already done. However, remember that the literature review needs to relate to and explain your research question. Although there may seem to be hundreds of sources of information that appear pertinent, once you have your question you will be able to refine and narrow down the scope of your reading.
Exercise: Answer the following questions

1. Of the following steps in preparing a research report, which step would come first?
   a. abstracting and coding each relevant article
   b. conducting the search for relevant literature
   c. making an outline
   d. identifying keywords for literature review
   e. writing the review of related literature

2. Which of the following best describes the conclusion of the literature review?
   a. It should conclude with a summary.
   b. The hypothesis serves as a summary.
   c. For the sake of brevity no summary is needed.
   d. Since each study is summarized, no summary is needed.

3. Which of the following statements is least likely a purpose for reviewing the literature?
   1. To develop a logical framework for the problem.
   2. To avoid duplication.
   3. To identify research strategies.
   4. To demonstrate the researcher's competence.
Answers

1. D
2. A
3. D
UNIT 5
QUANTITATIVE AND QUALITATIVE APPROACHES

Introduction to the Unit
In Unit 1, and 3 you have learnt about the importance of formulating a thesis statement that can lead to the formulation of research questions in navigating the direction of the research. In this unit you will learn about the features that characterize the quantitative and qualitative approaches that are associated with a research plan. In relation to the approaches are perspectives that involve macro-theory and micro-theory that situate research. Details of the two approaches in terms of the sub classifications are also are reviewed. Finally, the fundamentals of a research design plan is discussed to lay the foundation for obtaining more details about the individual stages of the research process.

The topics in this unit are:
1. Features of quantitative and qualitative approaches in research
2. Importance of theory in research
3. Fundamentals of a Research Design Plan

Objectives of the Unit
From the selected topics, the following are the unit objectives:
1. to identify features that characterize quantitative and qualitative approaches
2. to identify the importance of theory in research
3. to illustrate details that show the design plan of research
TOPIC 1: FEATURES OF THE QUANTITATIVE AND QUALITATIVE APPROACHES IN RESEARCH

1.1.1 Quantitative and qualitative research stem from philosophical assumptions that shape the ways researchers approach problems, collect and analyze data. Both approaches are motivated by:

- theory,
- the desire to describe relationships, and
- a need to explain tendencies of selected groups and sometimes individuals

The basic difference lies in the research methods used to suit the design.

Paradigms, Theory and Social Research

Theories seek to provide logical explanations to phenomena. They function in three ways on research. First, they prevent believing in false claims or in chance. Second, theories make sense of observed patterns in a way that can suggest other possibilities. Finally, theories shape and direct research efforts, pointing toward likely discoveries through empirical observation. In essence, theory relates directly to the "why" questions. This unit explores some specific ways theory and research work hand in hand during an inquiry to social life.

To explain theory, we can begin by looking at some fundamental frames of reference, called paradigms. Paradigms underlie social theories and inquiry. They provide ways of looking at logical frameworks within which theories are created. In other words, paradigms are fundamental models of frames of references that can be used to organize observations and reasoning. These frames of reference will shape both what we see and how we understand it. Paradigms in general help determine which concepts we see as relevant and important. They are general frameworks or viewpoints that provide ways of looking at life and are grounded in sets of assumptions about the nature of reality. Operating with these paradigms, theories attempt to explain social phenomena. Thus theories and paradigms intertwine in the search for answers.
One way to explain a research paradigm is to make a distinction between secondary and primary research. In secondary research, the focus is on the gathering of information that is based on readings. These readings can come from library research or specifically, it can be obtained from literature reviews. On the other hand, primary research is based on field data. This means that the investigator has to get data from first-hand sources either through qualitative, survey or statistical research. The methods used to get the data may be through experiments, interviews, observations, etc. A diagrammatic representation of possible research paradigms is found in Brown and Rodgers (p.11).

Self Evaluation Exercise 1

What kind of research paradigm (primary or secondary) would I be using if I want to find answers to the following questions:

1. How can I trace the historical development of the English language from the 1900s onwards?
2. What is the nature of language use of my nephew over a period of time?
3. What are the attitudes of university students towards the teaching of mathematics and science in English?
4. Can I find out if one method of language learning is more successful than another in a classroom?
5. Can I stay in a community for a period of time to trace language use in cultural practices such as in a wedding?
6. What are some theories that can explain second language acquisition?
Answers to Self Evaluation Exercise
1. secondary
2. primary
3. primary
4. primary
5. primary
6. secondary

In your decision, the main consideration is the type of data that needs to be obtained. Secondary data are from sources that are usually based on readings. Primary data are gathered from fieldwork or experiments.

Approaches in Quantitative Research
Quantitative research is often associated with numerical research. In simple terms, it means that it has to do with things that can be counted.

The origin of quantitative research can be traced to positivism, a philosophic view formulated in the 19th century. Positivists believe that general principles or laws govern the social world as they do the physical world. Researchers are able to discover these general principles and then apply them to predict human behavior. In their applications, they
- emphasize measurement and gather data with objective techniques as the best way to answer research questions
- often consider the traditional scientific approach as the preferred approach
- use methods that involve testing theories, hypotheses and generalize findings to a larger population
- view research as systematic and open to replication by other investigators
Approaches in Qualitative Research

Qualitative research is typically the label used for non-numerical research. It is rooted in phenomenology, a term coined to refer to social reality seen as unique. In phenomenology, the study approach sees the individual and his or her world as interconnected. The researcher through this approach seeks to understand human behavior by focusing on the meanings that events have for the people involved. The intended results of a phenomenologic study are usually in the form of in-depth narrative reports organized in a systematic way that help researchers understand the social reality experienced by the participants.

Self Evaluation Exercise 2

Reexamine the following questions that were asked in the section on research paradigm. Which of them is likely to be qualitative or quantitative in design?

1. What is the nature of language use of my nephew over a period of time?
2. What are the attitudes of university students towards the teaching of maths and science in English?
3. Can I find out if one method of language learning is more successful than another in a classroom?
4. Can I stay in a community for a period of time to trace language use in cultural practices such as in a wedding?

Answers to Self Evaluation Exercise 2

1. qualitative
2. quantitative/qualitative
3. quantitative
4. qualitative

The determining factor is whether the data is primarily based on numbers. If it is then it would be basically quantitative. If it is not then it is basically qualitative. For question 2, the decision is based on the method used. If interviews with open questions are used, then the results may be qualitative. If structured questionnaires are used, then data is basically quantitative.
1.1.2 Specific Types of Quantitative and Qualitative Research

A. Quantitative Research

Quantitative Research may be further classified as either experimental or non-experimental.

I. Experimental/quasi-experimental

Experimental Research involves a study of the effect of the systematic manipulation of one variable(s) on another variable. Variables are characteristics that take on different values across people and things. The manipulated variable is called the experimental treatment or the independent variable.

The observed and measured variable is called the dependent variable. In experimental research, variables are carefully controlled through highly structured designs. It has the greatest potential to indicate causality though it is difficult to conduct in real life situations. As such, when samples are not completely random and subject to practical considerations, the designs are often referred to as quasi-experimental. This kind of research retains some features of the experimental research but is constrained.

II. Non-experimental Research

In non-experimental research, the researcher identifies variables and may look for relationships among them but does not manipulate the variables. Basically they may be further sub-classified as:

i. Ex post facto research

Ex post facto research is similar to an experiment, except that the researcher does not manipulate the independent variable(s), which has/have already occurred in the natural course of events. The researcher compares groups differing on the preexisting independent variable to determine its effect on the dependent variable.
ii. Correlational research
Correlational research seeks to examine the strength and direction of relationships between two or more variables. The extent of relationship is expressed as a numeric index to indicate how they vary with respect to each other.

iii. Survey research (descriptive research)
Survey research uses instruments such as questionnaires and interviews to gather information from groups of subjects. Surveys permit the researcher to summarize the characteristics of different groups or to measure their attitudes and opinions toward some issues.

Use of statistics
In quantitative research, a large part of the data involves the use of statistics. The quantitative data are often presented descriptively, often through charts and graphs. Descriptive statistics do not supply evidence to support existence of relationships. For beginner researchers, greater reliance is the use of such statistics which will be given more treatment in a later unit.

B. Qualitative Research
Qualitative researchers seek to understand a phenomenon by focusing on the total picture rather than breaking it down into variables. The goal is to obtain a holistic picture and depth of understanding, rather than relying on numeric analysis of data. Qualitative research provides petite insights and a more comprehensive picture of behavior. The qualitative description offer reasoned impressions of events backed up by observations. The observations can be done through the use of a number of approaches. They are:

I. Ethnography
Ethnography is an in-depth study of naturally occurring behavior within a culture or social group. Social scientists sometimes call ethnography field research because it is conducted in a natural setting or "field". Ethnography requires a variety of data-gathering procedures, such as prolonged observation of the setting, interviewing members of the culture, and studying
documents and artifacts. Researchers interpret the data in the context of the situation in which they gathered the data.

II. Case study
Case study is an in-depth study of a single unit, such as one individual, one group, one organization, one program, a situation, or a community, etc. Case study research comprises an intensive study of the background, current status, and environmental interactions. The goal is to arrive at a detailed description and understanding of the entity. A case study can result in data from which generalizations to theory are possible.

III. Document or content analysis
Content analysis focuses on analyzing and interpreting recorded material within its own context. The material may be public records, textbooks, letters, films, tapes, diaries, etc. When using such documented sources, the researcher must establish the authenticity of the document itself, as well as the validity of its contents.

IV. Naturalistic observation
In naturalistic observation, the investigator seeks to make entirely unobtrusive observations of a setting without altering the situation in any way. The goal is to observe and study behavior as it normally occurs.

V. Phenomenologic studies
Phenomenologic studies begin with the assumption that multiple realities are rooted in subjects’ perspectives. Through unstructured interviews, the investigator explores the subject’s thoughts and feelings to elicit the essence of an individual’s experience.

VI. Grounded theory
Grounded theory is designed to develop a theory of social phenomena based on field data collected in a study. Experience with the data generates insights, hypotheses, and questions, which researchers pursue with further data collection. From an inductive analysis of data, the researcher constructs
concepts, and then forms a theory by proposing plausible relationship among the concepts. The theory is thus said to be grounded in the data.

VII. Historical research

Historical research analyzes documents and artifacts to gain insight into what has happened in the past to relate to the present. Its success depends on the accuracy and completeness of these records.

These research approaches can be used in developmental research. In carrying out developmental research the approaches used comprise an investigation of patterns and sequences of growth and change as a function of time. Sometimes, such research is also referred to as longitudinal research.

Ary et al. (2006: 27) summarized qualitative research in relation to the kind of research questions that may be asked as a focus of investigation (see table 1). They also compare the two categories of research according to purpose, design, approach, tools, sample, and analysis (see table 2).

Table 1: Summary of the major types of qualitative research according to questions asked

<table>
<thead>
<tr>
<th>Type</th>
<th>Major Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnography</td>
<td>What are the cultures and perspectives of this group of people in its natural setting?</td>
</tr>
<tr>
<td>Case study</td>
<td>What are the characteristics of the individual, organization, or group?</td>
</tr>
<tr>
<td>Document analysis</td>
<td>What can be learned about this phenomenon by studying related documents?</td>
</tr>
<tr>
<td>Naturalistic observation</td>
<td>What can be learned by unobtrusively observing behavior as it naturally occurs?</td>
</tr>
<tr>
<td>Phenomenologic study</td>
<td>What does this experience mean for the participants in the experience?</td>
</tr>
<tr>
<td>Grounded study</td>
<td>What theory can be derived inductively about a phenomenon from the data collected in this particular setting?</td>
</tr>
<tr>
<td>Historical</td>
<td>What insights or conclusions can be reached about a past event?</td>
</tr>
</tbody>
</table>
Table 2: Comparison of Quantitative and Qualitative Research (Ary et al., 2006: 27)

<table>
<thead>
<tr>
<th></th>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>To study relationship, cause and effect</td>
<td>To examine a phenomenon in rich details</td>
</tr>
<tr>
<td>Design</td>
<td>Developed prior to study</td>
<td>Evolves during study</td>
</tr>
<tr>
<td>Approach</td>
<td>Deductive; tests theory</td>
<td>Inductive; generates theory</td>
</tr>
<tr>
<td>Tools</td>
<td>Uses standardized instrumentals</td>
<td>Uses face-to-face interaction</td>
</tr>
<tr>
<td>Sample</td>
<td>Uses large samples</td>
<td>Uses small samples</td>
</tr>
<tr>
<td>Analysis</td>
<td>Statistical analysis of numeric data</td>
<td>Narrative description and interpretation</td>
</tr>
</tbody>
</table>

Self Evaluation Exercise 3

Read the following description about a research that has been carried out. Use summary table 2 given by Ary et al. about the elements of research. Decide whether the study is qualitative or quantitative or a combination of both. Then divide the information according to the various components given in the first column in the table. The sentences are numbered to help you to make the decision.

Abstract
1. This project paper focused on primary school students’ comprehension towards traffic signs in Malaysia. It examined meaning interpretation of traffic signs from children’s viewpoints. This research also looked into the forms of semiotics used in the traffic signs, in order to evaluate the relationship between traffic signs and meaning. For this study, 30 traffic signs were selected from 3 major categories of traffic signs (Warning, Regulatory and Informative signs) and questions were asked based on a questionnaire followed by an interview. One hundred students participated in the questionnaire survey and five students were interviewed. The findings showed that not all of the selected signs were fully understood by the school kids. The findings also revealed how semiotics is used in the traffic signs to represent meaning related to safety. The data indicated that the majority of the selected traffic signs are indexical. In other words, a wide range of symbols and icons are used to convey messages. To enhance children’s sense of road safety, children need to be more aware of, and critically interpret messages in traffic sign.
Answers to Self Evaluation Exercise 3

Research Design

| Purpose | • to examine primary school students' comprehension towards traffic signs in Malaysia.  
• to examine meaning interpretation of traffic signs from children's viewpoints.  
• to examine the relationship between traffic signs and meaning in the forms of semiotics used in the traffic signs. |
| Design | Combination of both Quantitative and Qualitative methods |
| Approach | For this study, 30 traffic signs were selected from 3 major categories of traffic signs (Warning, Regulatory and Informative signs) |
| Tools | Questions were asked based on a questionnaire followed by an interview. |
| Sample | One hundred students participated in the questionnaire survey and five students were interviewed. |
| Analysis | The findings showed that not all of the selected signs were fully understood by the school kids. The findings also revealed how semiotics is used in the traffic signs to represent meaning related to safety. The data indicated that the majority of the selected traffic signs are indexical. |
TOPIC 2: IMPORTANCE OF THEORY IN RESEARCH

2.1.1 Macrotheory and Microtheory in Research

Essentially a theory, according to the Cambridge Dictionary, is a formal statement of the rules on which a subject of study is based or of ideas which are suggested to explain a fact or event or, more generally, an opinion or explanation. For example, we can have an economic theory or a second language acquisition theory. A theory may adopt a micro or macro view.

I. Macrotheory

A macrotheory is formulated with the aim of understanding the "big picture" of institutions, whole societies and interactions among societies.

II. Microtheory

A microtheory aimed at understanding social life at the intimate level of individuals and their interactions.

Both approaches are useful for their own purposes and can be suited to individual research.

The Use of Theory

A theory, whether macro or micro, is useful in many ways and researchers posit that in quantitative research, the hypotheses and research questions are often based on theories that the researcher seeks to test. In essence, theory develops to explain the advancement of knowledge in particular fields.

It can be also said that theory is "a set of interrelated constructs (variables), definitions, and propositions that presents a systematic view of phenomena by specifying relations among variables, with the purpose of explaining natural phenomena" (Kerlinger 1979, p.64)
3.1.2 Placement of Theory in Research

The elaboration of relevant theories used in a research is often encompassed in the section commonly referred to as the theoretical framework.

Theory Use in Quantitative Research

- In quantitative studies, one uses theory in a deductive manner and places it toward the beginning of the plan for a study. With the objective of testing or verifying a theory rather than developing it, the researcher advances a theory, collects data to test it, and reflects on the confirmation or disconfirmation of the theory by the result.

- The theory becomes a framework for the entire study, an organizing model for the research questions or hypotheses and for the data collection procedure.

Figure 1 shows the deductive approach used in quantitative research.

```
Researcher Tests or Verifies a Theory

Researcher Tests Hypotheses or Research Questions from the Theory

Researcher Defines and Operationalizes Variables Derived from the Theory

Researcher Measures or Observes Variables Using an Instrument(s) to Obtain Scores
```

Figure 1: The Deductive Approach Typically Used in Quantitative Research

Variation in Theory Use in Qualitative Research

- Theory provides an explanation for behavior and attitudes, and it may be complete with variables, constructs and hypotheses. For example, the investigator may be interested in establishing themes such as social control,
language stability and change, or social organizations such as kinship or families. These variables can be explained through theories.

- Qualitative researchers increasingly use a *theoretical lens or perspective* to guide their study. From such perspectives, they can raise other questions such as those related to gender, class, and race (or some combination) that they can address as having relevance to the behavior or attitude surveyed (see figure 2).

![Diagram](image)

**Figure 2: Logic of Research in a Qualitative Study**

Some qualitative studies *do not employ any explicit theory*. In phenomenology, inquirers attempt to build the essence of experience from participants. From the experience the inquirer constructs a rich detailed description of a central phenomenon to build up a theory. It uses an *inductive* method in its approach.

**Mixed Approaches**

Research today often takes on both approaches: the quantitative and the qualitative. Some studies combine both approaches in the belief that one would enhance the other as each approach has its limitations. As such, an integrated approach could be seen to add rigour to the design.
### Self Evaluation Exercise 4

Read two research articles from the Internet that you consider as illustrative of quantitative and qualitative research. Make brief notes about the research and fill up the table below with the information.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approach</td>
<td></td>
<td></td>
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<tr>
<td>Tools</td>
<td></td>
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</tr>
<tr>
<td>Sample</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analysis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Answer to Self Evaluation Exercise 4

Answers will differ according to selections. However, from the exercise, it would be obvious that there are differences in the approaches.
TOPIC 3: Fundamentals of a Research Design Plan

In a design plan, there are several components that need to be explained. The components are usually evident in the various chapters of the research report. A common system to follow is to formalize the design in five chapters. Each chapter will be further subdivided to give the relevant information. An outline may be as follows:

Chapter One/Introduction
  Background for the Study
  Statement of the Problem
  Objectives of the Study
  Research Questions
  Theoretical Framework
  Significance of the Study
  Limitations and Delimitations of the Study

Chapter Two/Review of Literature
  Introduction
  (Subsections that reflect the focus of the study)

Chapter Three/Methodology
  Instrument Design

Chapter Four/ Results and Discussion

Chapter Five/Conclusion

In following the design plan, one major consideration throughout is to anticipate the kind of information that a reader will need to understand the research and how the writer can provide the necessary links to aid the reader to follow his arguments.

In chapter one, the writer will usually set the stage for the research through the following:

Background of the Study provides an introduction to the subject in which the research will be located. For example if the research is about how a child acquires an L2 (second language), the introduction is likely to offer some information on the
learning of an L1 (first language) which can then lead to the learning of a second language.

The Statement of the Problem allows the writer to provide justification for the chosen research. The writer is looking for answers to a situation that intrigues him.

Objectives of the Study puts in place the information about what the researcher wishes to achieve. They are worded as declarative statements and may be further distinguished as general objectives and specific objectives.

Research Questions are formulated based on the objectives of a study. As the term indicates, they are structured as questions with the necessary punctuation, that of a question mark. Researchers must know the syntax of formulating questions. Well formulated research questions help to provide the central focus of the study and from the questions, the variables are easily identified and these variables can then be given the appropriate treatment in instrument design.

Theoretical Framework refers to the theories, concepts or models that provide the underpinnings for the research in the sense that they are the anchors upon which the current research has developed from. They provide the frame that houses the conceptualised research.

Significance of the Study elaborates on the contributions that the research can make for the area under study. It attempts to convince the readers of the worth of the research.

Definitions of Terms deal with terms that individuals outside the field of study may not understand and that go beyond common language (Locke et al., 2000). Clearly, whether a term should be defined or not is a matter of judgment. A rule of thumb is to define a term if there is likelihood that readers will not know its meaning. No one approach governs how one defines the terms in a study, but several suggestions are forwarded based on recommendations found in Locke et al. (2000):
- Write definitions at a specific operational or applied level. Operational definitions are written in specific language rather than being abstract and conceptual.

- Do not define the terms in everyday language; instead, use accepted language available in the research literature.

- In this way, the terms are grounded in the literature and not invented.

(Wilkinson, 1991) adds:

- If a precise definition of a term is not available in the literature then definitions created from everyday language will need to be used. In this case, provide a definition and use it consistently throughout the plan and the study.

**Limitations and Delimitations of the Study** is usually revealed as boundaries which narrows the scope of a study, and suggest potential weaknesses that the investigator must be aware of. The two terms are used in different ways. **Delimitations** is used to narrow the scope of a study. For example, the scope may focus on specific variables or a central phenomenon, delimited to specific participants or sites, or narrowed to one type of research design (e.g., ethnography or experimental research). Limitations are provided to identify potential weaknesses of the study.

- **Example of a delimitation:**

  Initially, this study will confine itself to interviewing and observing the language performance of psychiatric staff nurses in a private psychiatric hospital.

- **Example of a limitation:**

  The purposive sampling procedure decreases the generalizability of findings. This study will not be generalizable to all areas of language use in nursing.

**Review of Literature** deals with the review of relevant research. It starts with wide reading into the topic which will help you to identify the research problem. Once the
research problems are identified then the reading is more focused and the literature review builds on the different angles that support the answering of the research questions. For example if the focus of the research is on the writing processes in English of preschool children, then the literature review is likely to anchor on the theory of writing, writing processes, writing in preschool curriculum, and related studies on preschool writing.

Methodology explains the research design which links to the answering of the research questions. This description is detailed with regard to sampling procedure that includes the description of location size, and the methods used in the investigation. This is particularly important for other researchers who wish to replicate the study.

Results and Discussion forms the core section of the research report. It attempts to bring together the research questions and their answers to argue convincingly about the data obtained. The discussion shows the validity of the study and that the arguments are anchored on good support.

Conclusion by large deals with a summary of the findings and ends with recommendations for further research.

The design plan shows the moves that structure the thoughts of a researcher as he or she strategizes on an effective written presentation. The plan requires careful thinking as the success of the document rests largely on the design plan and its subsequent execution.
Self Evaluation Exercise 5
Read the research article below that does not show information organized according to any sections or sub sections. In the numbered blanks provided, use relevant headings to illustrate the design plan components that are described in this unit. You may not find all the components as this reading is a journal article, a shorter form of a research report.

The Acquisition of English Articles by Non-native Speakers

Wong Bee Eng
Chan Swee Heng
Universiti Putra Malaysia

(1) ______________

Although articles are high frequency morphemes in English, it is observed anecdotally that L1 Malay and L1 Chinese learners of L2 English still have persistent problems acquiring the system although articles are introduced early in the learning of English in Malaysian schools.

The English article system is complex and previous L2 researchers have shown that L2 English learners often have difficulty with the use of articles but they have not been able to provide a conclusive explanation for this phenomenon. Malay and Chinese are [-ART] languages, that is, they have no functional equivalent of the English article system, which comprises the, a, and Ø (the zero article). These articles in English mark definiteness (the) and indefiniteness (a). In this case, the morpheme a includes both a and an as the indefinite article in English is realized as two allomorphs (a and an).

In contrast to the English language, the Malay language is a [-ART] language, that is, it lacks the equivalents of articles found in English. However, determiners are used in order to encode referent noun phrases (NPs). This is shown in the examples below (taken from Arshad, 2005):

(1) Seorang budak muda berjalan kaki ke sekolah.
CLS\(^1\) boy young walk on foot to school
A young boy walked to school.

\(^1\)CLS - Classifier
(2) Budak muda itu/tersebut sampai awal ke sekolah.
   boy young DET/DET\(^2\) reach early to school
   The young boy arrived early.

(3) Dia duduk dan menunggu kawan kawannya,
   3PS NOM\(^2\) sit and wait friends+3PP GEN\(^4\)
   He sat and waited for his friends.

In (1), the classifier seorang which encodes the NP budak muda (young boy) in a
new discourse context can more accurately be translated into a quantity, that is one
person rather than the indefinite article a. In the same way, the determiners itu and
tersebut (see for e.g. Arshad, 2005) in the known discourse context can best be
equated to the English determiner that and person or object concerned respectively.

Not only does the Malay language differ from the English language by not encoding
definiteness and indefiniteness through a function word like an article, there are also
situations where there is no corresponding equivalent for English NPs encoded for
indefiniteness. The following Malay examples (taken from Arshad, 2005) and the
closest corresponding English translation illustrate this particular aspect related to
indefinite NPs.

(4) Budak itu ditemani kawan
   boy DET accompany+PASS\(^5\) friend
   The boy was accompanied by a friend

(5) Budak itu ditemani seorang kawan
   boy DET accompany+PASS CLS friend
   The boy was accompanied by a friend

(6) Budak itu ditemani dua orang kawan
   boy DET accompany+PASS two CLS friend
   The boy was accompanied by two friends

(7) Budak itu ditemani kawan kawan
   boy DET accompany+PASS friends
   The boy was accompanied by friends

Unlike in the English language, indefiniteness in the Malay language can be
expressed through the use of a zero morpheme as in (4) where the indefinite NP kawan (friend) is not preceded by any word. The corresponding translation into
English, however, requires the indefinite article a.

The use of a classifier seorang in (5) and the numeral dua (two) in (6) indicate
quantity. Thus they are not discoursal devices to reflect first mention and
indefiniteness which is the case when the indefinite article a is used in English.

\(^2\) DET - Determiner
\(^3\) 3PS NOM - Third Person Singular Nominative
\(^4\) 3PP GEN - Third Person Plural Genitive
\(^5\) PASS - Passive
Example (5), however, is translated into an English sentence similar to (4). Indefiniteness of plural NPs such as kawan-kawan (friends) in (7), however, is encoded in a similar manner in English where the corresponding English sentence shows the use of a zero morpheme or a zero article.

The other language of interest in this study is Chinese, in particular Mandarin Chinese. Chinese has no equivalent to the English articles the and a. However, similar meanings are expressed by a combination of other mechanisms and reliance on context. Usually, the context makes it clear whether you are talking about a particular thing (definite), an example of a thing (indefinite), or various other possibilities.

In cases where it does not, there are expressions like you yi-ge (have/is one unit), zhe1 ge (this unit) and nei ge (that unit) that clarify the meaning. In other words, these notions are marked by determiners zhe1 'this', nei 'that', and yi 'one' (http://intersticiality.net/chineseDifferences.html). However, these are not mandatory components like the English determiners.

(2) ______________

The aim of this study is to investigate the knowledge of English articles of L1 Malay and L1 Chinese speakers of L2 English. Specifically, the study attempts to: (a) determines the accuracy of use of English articles in obligatory contexts, and (b) identify the contexts in which the articles are used erroneously by these learners. Based on these specific objectives, the following research questions were formulated for the study:

1. What do the values of SOC (number correctly Supplied in Obligatory Contexts), TLU (number of Target Like Use) and UOC (number Used in Obligatory Contexts) show about the acquisition of English articles by L1 Malay and L1 Chinese learners of L2 English?

2. In what context of article use do L1 Malay and L1 Chinese learners of L2 English have more difficulty in?

(3) ______________

L1 Malay and L1 Chinese speakers of L2 English from two faculties in a Malaysian university participated in the study. The average age of these L2 learners was 22 years. All of them had had at least 13 years of tutored exposure to English as an L2. A standardized proficiency test (Oxford Placement Test) was used to select high intermediate and advanced L2 English speakers for the study. About 60 Malay and 55 Chinese students sat for this test which was administered a few days before the main instrument was administered. On the basis of the scores obtained for the standardized proficiency test, 28 Malay (3 male, 25 female) and 31 Chinese (7 male, 24 female) speakers were selected to take part in the study.
The study employed a blank-filling task and an elicitation task. The main instrument is the blank-filling task. Accompanying this task is a short section where learners supplied information on their background. Based on the information obtained from this section, it is found that all the L1 Malay speakers acquired Malay as their L1 while all the L1 Chinese speakers had acquired one of the many Chinese languages spoken in Malaysia as their L1. They also learned Mandarin Chinese in school at the age of six as they had all attended Chinese primary schools in Malaysia. The respondents attempted the task in one sitting.

Although all 28 Malay and 31 Chinese speakers attempted the main task, only 23 scripts from the Malay speakers and 28 scripts from the Chinese speakers could be analyzed as 5 Malay and 3 Chinese respondents did not answer some items in the task. These scripts were not included in the overall analysis.

The blank-filling task was a cloze (adapted from Master, 1994), comprising 58 items in two parts. The first part comprised discrete sentences and the second, a descriptive paragraph. The participants were asked to fill in the blanks by writing the correct answer on an answer sheet. According to Lu (2001), Master's test is a 'legitimate instrument' as it covers the whole range of article usage, including the four semantic categories of [-Specific Referent (+SR)] and (+ Assumed Known to the Hearer (+HK)), and it was designed to test article usage for non-native speakers of English. The following are examples of the test items in Master 1994 (taken from Lu, 2001: 46):

<table>
<thead>
<tr>
<th>Category</th>
<th>Article environment</th>
<th>Example</th>
<th>Item number</th>
</tr>
</thead>
<tbody>
<tr>
<td>[-SR, +HK]</td>
<td>the, a,  the wild pig.</td>
<td>The favorite food of the jaguar is the wild pig.</td>
<td>48, 49</td>
</tr>
<tr>
<td></td>
<td>Wild pigs move in bands of fifteen to twenty.</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>[+SR, +HK]</td>
<td>previously mentioned, or physically present</td>
<td>What is the diameter of the moon?</td>
<td>8, 9</td>
</tr>
<tr>
<td></td>
<td>referents</td>
<td>Once there were many trees here.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Now, the trees are gone.</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The air in this city is not very clean.</td>
<td>16</td>
</tr>
<tr>
<td>[+SR, -HK]</td>
<td>a,  First-mention NPs, or NPs following</td>
<td>I would like a cup of coffee, please.</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>existential 'has/have' or 'there is/are'</td>
<td>I always drink  water with my meals.</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There is an orange in that bowl.</td>
<td>1</td>
</tr>
<tr>
<td>[-SR, -HK]</td>
<td>a,  Equative NPs, or NPs in negation, or</td>
<td>What is the sex of your baby? It’s a boy!</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>question</td>
<td>Einstein was a man of great</td>
<td>17</td>
</tr>
</tbody>
</table>
The second instrument, an elicitation task, was modeled on that used by Ionin et al. (2003). Altogether 30 items were included in this task. This instrument was administered to obtained data to complement data obtained from the blank-filling task. The 30 items were based on examples provided by Ionin et al. (2003). The items were divided into the following types: (a) singular specific indefinites (b) singular non-specific indefinites (c) plural indefinites and (d) definite DPs in previous-mention environments. The items are shown below:

**Singular specific indefinites**

3. **At the park** (Sing. Spec. Indef. – wide scope over an operator)
   Mother: What do you want to see here?
   Child: I want to get a look at (a, an, the, ϕ) cat. I may see one behind the bush here.

1. **In a shopping complex** (Sing. Spec. Indef. – use of certain)
   Salesgirl: I see you need help.
   Mother: Yes, I am looking for (a, an, the, ϕ) certain girl of about 5.
   She is my daughter.

9. **At a university** (Sing. Spec. Indef. – no scope interactions)
   Bill: Hi Rina – can you help me? I need to talk to Professor Chan, but I haven't been able to find her. Do you know if she is here this week?
   Rina: Well, I know she was here yesterday. She met with (a, an, the, ϕ) student – he is in my Functional Grammar class.

**Singular non-specific indefinites**

13. **In a clothing store** (Sing. Non-Spec. Indef. – narrow scp)
   Clerk: May I help you?
   Customer: Yes, please! I've rummaged through every stall, without any success. I am looking for (a, an, the, ϕ) warm hat. It's getting rather cold outside.

18. **At a university** (Sing. Non-Spec. Indef. – no scp interactions)
   Visitor: Excuse me – can you help me? I'm looking for Professor Ali.
   Secretary: I'm afraid he's not here right now.
   Visitor: Is he out today?
   Secretary: No, he was here this morning. He met with (a, an, the, ϕ) student ... but I don't know where Professor Ali is right now.

24. **At a university** (Sing. Non-Spec. Indef. – denial of speaker knowledge)
   Professor Ali: I'm looking for Professor Chan.
Secretary: I'm afraid she is out right now.
Professor Ali: Do you know if she is meeting somebody?
Secretary: I am not sure. This afternoon, she met with (a, an, the, \( \varphi \))
student – but I don’t know which one.

Plural indefinites

Jeweler: Hello, this is Habib Jewelry. What can I do for you, ma’am?
Are you looking for a piece of jewelry? Or are you interested in
selling?
Client: Yes, selling is right. I would like to sell you (some, the, \( \varphi \))
beautiful bracelets. They are very valuable.

17. Phone conversation (Plural Indefs.– Plural Non-Spec. Indef – narrow scope)
Salesperson: Hello, Jaya Jusco here. What can I do for you?
Customer: Well, I have a rather exotic order.
Salesperson: We may be able to help you.
Customer: I would like to buy (some, the, \( \varphi \)) green tomatoes. I’m
making special Thai source.

Definite DPs in previous-mention environments

7. Conversation (Definite DPs in previous-mention envs.- Singular Definite)
Tom: My mother takes care of some old folks at the home. There are
two old ladies and one old man. Last evening, my mum
could not go as she was unwell, so I offered to help out.
John: How did you help out?
Tom: I went to the home and wheeled (a, an, the, \( \varphi \)) old man
out for a walk.

8. Conversation (Definite DPs in previous-mention envs.- Plural Definite)
Rina: My cousin started school yesterday. He took one notebook and
two new books with him to school, and he was very
excited. He was so proud of having his own school things!
But he came home really sad.
Vimala: What made him so sad? Did he lose any of his things?
Rina: Yes! He lost (some, the, \( \varphi \)) books.

The results obtained from both instruments are discussed separately below.

The Blank-filling Task

In the study, SOC (Supplied in Obligatory Contexts) and TLU (Target Like Use) are
used to measure article accuracy (following Lu, 2001). The former was first devised
by Brown (1973) and has been used in other studies (see for e.g. Dulay and Burt, 1973, 1974; Bailey, Madden, and Krashen, 1974). However, the SOC does not take into account over-suppliance of a morpheme in non-obligatory contexts. If the morpheme is over-supplied or overgeneralized, SOC will overestimate the learner's accuracy (Lu, 2001). As such, use of morphemes in non-obligatory contexts should be taken into account in the accuracy measure. This would provide us with the morpheme overgeneralization reading. Thus, the TLU was formulated by Pica (1983) in an effort correct this problem. These two formulae measure article accuracy and are formulated as:

\[
SOC = \frac{\text{number of correct supplies in obligatory contexts}}{\text{number of obligatory contexts}}
\]

\[
TLU = \frac{\text{number of correct supplies in obligatory contexts}}{\text{number of obligatory contexts + number of supplies in non-obligatory contexts}}
\]

In addition to the SOC and TLU measures, the UOC (Used in Obligatory Contexts) was formulated by Master (1987) to measure article use. The UOC is used as a complementary measure to observe the learners' overuse or underuse of the article. It is formulated as:

\[
UOC = \frac{\text{total number of supplies in both obligatory and non-obligatory contexts}}{\text{number of obligatory contexts}}
\]

Like the TLU measure, supplies in non-obligatory contexts is also taken into consideration in UOC, to enable the inspection of the learner's overall use of a certain morpheme. The UOC and SOC share the same denominator, so comparisons between accuracy and use can be easily spotted. Statistically, SOC and TLC cannot exceed 100%, but UOC can. So UOC is able to indicate overuse or underuse of the morpheme.

For ideal native-like use, SOC, TLC, UOC will all equal one. SOC indicates simple but potentially overestimated accuracy, TLU reveals a deflated estimate of accuracy level, and UOC shows learners' actual use or overuse of the morpheme (Lu, 2001).

Table 1 summarises the values of the SOC measure for the two groups of learners.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>N</th>
<th>SOC (Supplied in Obligatory Contexts)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The data indicate that the two groups have the same accuracy order for the SOC measure, that is, they are most accurate in their use of the indefinite article and least accurate in their use of the zero article. However, the difference between the accuracy in a and the is more pronounced in the results for the L1 Chinese speakers while the accuracy in the and ϕ is greater for the L1 Malay speakers. The following is a summary of the results for accuracy order of the SOC measure.

Malay Speakers:  a > the > ϕ  (77.9%>74.8%>51.6%)
Chinese Speakers:  a > the > ϕ  (83.8%>74.8%>65.0%)
Average:  a > the > ϕ  (81.2%>74.8%>54.3%)

Table 2 presents the results for the TLU measure for the two groups of learners.

Table 2: Means of TLU (Target-Like Use) for the Article Types

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>N</th>
<th>TLU (Target-Like Use)</th>
<th></th>
<th></th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>The</td>
<td>a</td>
<td>ϕ</td>
<td>(the, a, ϕ)</td>
</tr>
<tr>
<td>Malay</td>
<td>23</td>
<td>42.78%</td>
<td>51.10%</td>
<td>38.16%</td>
<td>43.61%</td>
</tr>
<tr>
<td>Chinese</td>
<td>29</td>
<td>42.78%</td>
<td>58.41%</td>
<td>40.25%</td>
<td>45.39%</td>
</tr>
<tr>
<td>Total</td>
<td>52</td>
<td>42.78%</td>
<td>55.10%</td>
<td>39.34%</td>
<td>44.60%</td>
</tr>
</tbody>
</table>

The results reveal that the two groups again have the same accuracy order for the TLU measure. The order is the same as that obtained for the SOC measure, a > the > ϕ. The difference between the SOC and the TLU is that the mean scores of the TLU are much lower than the mean scores of the SOC. This is to be expected as the number of suppliance in non-obligatory contexts is taken into consideration in the denominator of the formula for calculation of the TLU. Again the difference in means between the accuracy in a and the is greater in the results for the L1 Chinese speakers. The following is a summary of the results for accuracy order of the TLU measure.

Malay Speakers:  a > the > ϕ  (51.10%>42.7%>38.16%)
Chinese Speakers:  a > the > ϕ  (58.41%>42.7%>40.25%)
Average:  a > the > ϕ  (55.10%>42.7%>39.34%)

As expected the values of SOC are higher than the values of TLU.

Table 3 presents the data obtained for the UOC (Used in Obligatory Contexts) measure for the two groups of learners.

Table 3: Means of UOC (Used in Obligatory Contexts) for the Article Types
<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>N</th>
<th>UOC (Used in Obligatory Contexts)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>The a</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malay</td>
<td>23</td>
<td>666/713</td>
<td>389/299</td>
<td>279/322</td>
<td>1334/1334</td>
<td>93.41%</td>
<td>130.10%</td>
</tr>
<tr>
<td>Chinese</td>
<td>29</td>
<td>810/899</td>
<td>460/377</td>
<td>392/406</td>
<td>1582/1682</td>
<td>90.10%</td>
<td>127.32%</td>
</tr>
<tr>
<td>Total</td>
<td>52</td>
<td>1476/1612</td>
<td>869/676</td>
<td>671/728</td>
<td>3016/3016</td>
<td>91.56%</td>
<td>128.55%</td>
</tr>
</tbody>
</table>

The UOC measure is important as it helps to interpret the acquisition processes underlying the orders in terms of article use for the two groups of learners. The data indicate that both groups of learners were moving towards being more native-like for the acquisition of *the*, although the L1 Malay speakers were slightly more native-like than the L1 Chinese speakers (93.4% versus 90.1%). The 2 groups of learners overused the article *a*, with the Chinese speakers being slightly better in their performance (127.3% versus 130.1%). Both groups underused the zero article *a* with the Chinese speakers being more native-like than the Malay speakers (96.2% versus 86.7%). And the Chinese speakers tended to under use the definite article *the* more than the zero article *a* (90.10% versus 96.55%) while the Malay speakers revealed the reverse pattern (93.41% versus 86.65%). Based on the results here, the learners on the average seemed to be more less native-like in their use of the indefinite article *a* as they tended to overuse it and by almost 30% for both groups.

The data obtained from the UOC measure reveal that the SOC and TLU measures are inadequate to measure accuracy in the use of the English articles among the non-native speakers. The UOC measure reveals a slightly different pattern. Thus, although the Malay and Chinese speakers seemed more accurate in their use of the indefinite article based on the SOC and TLU, they were in fact really overusing it. And although they seemed less accurate in their use of the definite article, they were actually under using it although the rate of under use was much smaller than their overuse of indefinite article. In fact, their under use of the zero article also reveal values that are smaller than their overuse of the indefinite article.

The results indicate that both groups of learners were moving towards being more native-like for the acquisition of *the*, although the Malay speakers were slightly more native-like (93.4% versus 90.1%). The two groups of learners overused the article *a*, with the Chinese speakers being slightly better in their performance (127.3% versus 130.1%). Both groups underused the zero article, with the Chinese speakers being more native-like (96.2% versus 86.7%). The Chinese speakers tended to under use the article *the* more than the zero article (90.10% versus 96.6%) while the Malay speakers revealed the reverse pattern (93.41% for *the* versus 86.7% for *a*). On the average, the learners seemed to be less native-like in their use of the indefinite article *a*.

**The Elicitation Task**

Table 4 presents the data obtained for article use in singular contexts.

**Table 4: Article use in singular contexts**
<table>
<thead>
<tr>
<th>Category</th>
<th>Target</th>
<th>L1 Malay N=28</th>
<th>L1 Chinese N=31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definite</td>
<td>the</td>
<td>94.1</td>
<td>95.7</td>
</tr>
<tr>
<td>Specific indefinite</td>
<td>a</td>
<td>69.4</td>
<td>66.3</td>
</tr>
<tr>
<td>Non-specific indefinite</td>
<td>a</td>
<td>86.5</td>
<td>89.3</td>
</tr>
</tbody>
</table>

Data obtained from the second instrument for singular contexts (see table 4) indicate that both groups have difficulty with singular specific indefinite contexts (target a less than 70%) and more difficulty with singular non-specific indefinite contexts (less than 90%) than singular definite contexts (about 95%). It is not surprising that both groups of learners seemed to have least difficulty with the singular definite contexts as these involve definite DPs in previous-mention environments. In such instances, the learners were able to make use of the context (e.g. previous utterance) to select the appropriate article.

With regard to singular non-specific indefinites, three contexts are available: narrow scope, no scope interactions and denial of speaker knowledge (see examples 13, 18, 14). In each of the examples, the learner is able to fall back on the context (previous utterances to help out with the use of the indefinite article a or its allomorph an).

The difficulty encountered by the learners in the singular specific indefinite contexts (a) is particularly significant. L1 Malay and Chinese speakers (whose L1 languages are [-ART] languages, have an uphill task in dealing with a, the and the zero article in English. The notion of singular number normally entails the use of the indefinite article a (or its allomorph an). However, the added notion of specific to indefinite seems to confound the learners further. There are three contexts that are of relevance here: wide scope over an operator, use of certain, and no scope interactions (see examples 3, 1, and 9). In each of the examples, the context does not provide the kind of information that might help the learner to select the appropriate article with the possible exception of example 1 where the word certain might aid learners.

Table 5 shows the data for article use in plural contexts for the two groups of learners.

**Table 5: Article use in plural contexts**

<table>
<thead>
<tr>
<th>Category</th>
<th>Target</th>
<th>L1 Malay N=28</th>
<th>L1 Chinese N=31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definite</td>
<td>the</td>
<td>84.5</td>
<td>79.6</td>
</tr>
<tr>
<td>Specific indefinite</td>
<td>some/φ</td>
<td>72.6</td>
<td>90.3</td>
</tr>
<tr>
<td>Non-specific indefinite</td>
<td>some/φ</td>
<td>70.2</td>
<td>77.4</td>
</tr>
</tbody>
</table>
In the plural contexts, the learners are less definite across groups. The contexts that are of relevance here are: definite DPs in previous-mention environments (see e.g. 8), specific indefinite wide scope (see e.g. 26), and non-specific indefinite narrow scope (see e.g. 17). The data from the plural contexts revealed that the Malay speakers are more accurate in plural definite contexts (84.5% vs 79.6%) while the Chinese speakers are more accurate with the plural specific indefinite (90.3% vs 72.6%) and the plural non-specific indefinite contexts (77.4% vs 70.2%).

As expected, the plural definites seemed less problematic generally. These involve previous mention environments and it is these contexts that helped learners to select the appropriate article (definite the). However, it is unsure how L1 Chinese seemed to do much better in the specific indefinites compared to the L1 Malay learners. Perhaps they are more accurate as the items involve plural nouns and these signal that they should select either some or the zero article before the plural nouns instead of the definite article. Both groups are also less accurate in their acquisition of the non-specific indefinites. In such items, the context is usually not able to aid the learners to select the appropriate word to complete the sentence which probably explains why they are also less accurate in these environments too.

Overall, learners have most difficulty with singular specific indefinite contexts (a), followed by the plural contexts.

(5) __________

This study has examined the use of the article system among 2 groups of learners whose L1es are [-Art]. Its main finding is that the advanced learners may still have difficulty with these elements although they were taught the article system from the early stages of learning the language. The findings of the study have implications for the ESL classroom in terms of teaching methodology and development of material for the teaching of the English article system.

Studies have shown that L2 acquisition is largely a natural process of unconscious development, this development will have to take place with impoverished input (in comparison to L1 learners) (Hawkins, 2005). In other words, teachers have to find ways to ‘enhance the input learners get to maximize the triggering of unconscious development’ (Hawkins, 2005: 17). According to him, this does not necessarily mean spending a lot of time teaching students about, or focussing on L2-L1 differences, but allowing them to use and interact with a wide range of structures in the L2, in this case, by including a lot of examples with article use. This will allow the innate ability of the learners to operate more freely when they acquire the language.

(6) __________


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http://interstitiability.net/chinesedifferences.html


Answer for Self Evaluation Exercise 5
1. Introduction/Background to the Study
2. The Study/Purpose of the Study
3. Procedure/Methodology
4. Findings and Discussion
5. Conclusion
6. References

Conclusion
In this unit, research design is emphasized. It forms the blueprint of the research project. Research can be viewed as quantitative or qualitative or a combination of both. Features of quantitative and qualitative research are reviewed and differentiated. Finally an example template is provided to illustrate the details of a general design plan of a research which serves to show the organizational plan as a strategy for good reporting to fulfill some of the conditions of research rigour.
UNIT 6
QUALITATIVE DATA

Introduction to the Unit
In this unit you will learn more about the methods of qualitative approaches that are used in qualitative research. Qualitative methods are driven by the desire to obtain rich data through field research which involves a focus on the understanding of the intricacies of how a system works. The situations studied are non-experimental and often do not involve numbers and neither are the researchers too concerned with generalizability of the findings. Thus the findings may be unique to the case. In this unit particular attention is paid to case study and introspective research as qualitative examples of language research.

The topics in this unit are:
1. Basic methods in qualitative research
2. The use of case study research
3. The use of verbal protocols in introspective research

Objectives of the Unit
From the selected topics, the following are the unit objectives:
1. to identify features that characterize qualitative approaches
2. to use case study as a qualitative approach
3. to use verbal protocols in introspective research
TOPIC 1: USING QUALITATIVE METHODS

1.0 Observation
In working with qualitative data, all good practitioner research studies start with observations. From the outset an underlying principle is: write or note only what you see, not what you think you see. A behaviour may imply facets of attitudes; people may smile from embarrassment as well as from pleasure. So don’t write or note what you don’t see.

Implications of a behaviour or gaps in expected behaviour can be drawn out when you analyse the data as a whole. To say the obvious, for example, ‘not smiling’ or ‘not interacting with others’ would be unnecessary and not meaningful. Instead, try to capture the behaviour in context. What else is going on? What happened before and afterwards? Where is it taking place? Then the observed data becomes more meaningful and interpretable.

Start off with a clear target. But it is not advisable to try to look at too much at once or for too long. This may cloud your judgment. Distance yourself if you feel you are getting too involved and go back to then with a clear head.

Observing demands tiring, highly focused concentration. You have to keep at it.

2.0 Approaches used in Qualitative Research
The research can resort to a variety of methods for the gathering of data. Each of them comes with strengths and weaknesses. The decision to use which ever approach rests on a conscious awareness of the advantages and disadvantages. The informed researcher makes his or her choice based on many criteria other than just realising the strengths and weakness of the method itself. Among them are the research design, feasibility, the culture of data source, and accessibility.

The following approaches can be used in obtaining qualitative data:
2.1 Checklist and event sampling
A checklist can be designed to facilitate observations. Checklists usually include lists of behaviour or facilities that might be expected to be observed. The observed checks the existence of these and enables the researcher to record the behaviour appropriately in the list. The list may give the opportunity of recording, for example, the extent to which a facility is available within specific settings.

Checklists are particularly useful in reviewing practice against a set of agreed criteria and are often a sound starting point for developing practice and provision. In designing a checklist, considerations can be given to the following advantages and disadvantages.

2.1.1 Advantages of checklist and event recorders
- They provided useful baseline data.
- They are quick and reliable.
- They can be used to check outcomes.
- They can help in gathering the information quite easily about behaviours of groups of people.

2.1.2 Disadvantages of checklists and event recorders
- They don’t record when events occurs if there is no provision for them.
- You cannot view the event in context and see the antecedents and effects. In other words, they may not be sensitive to other related factors that may have a bearing on the on-going observations.
- You have to decide exactly what you are look for before you start to look at the phenomena. The checklist may restrict a more comprehensive approach.
- You may miss recording a lot of useful information through only focusing on preselected event(s).

2.2 Photographs
These are the easiest method. If taken at, for example, 60-second intervals over a period of 10 or 15 minutes they can provide useful and rich information in an
accessible form. The main advantage is that photographs can be constantly returned to for reanalysis. They are also easy to store. The main disadvantage is you may need to capture the observations by taking many of them. In addition they are captured in still life form.

2.3 Video taping and audio taping

These are not strictly observational methods. Video taping really does little more than delay the observational procedure. There are enormous advantages to capturing data on tape. Often such data are captured as verbal reports in which the participants may be asked to undergo processes of ‘talk aloud’, or ‘think aloud’. As defined by Brown and Rogers (2002: 55), the difference lies mainly in whether information responded include more contextual data that could be important for the overall picture. Both methods requires the participant to speak or verbalise (which is recorded) the thought processes as he/she solves a mental problem.

2.1.1 Advantages of video and audio recordings

- They reveal data in natural settings.
- Audio recordings are able to capture thought processes if verbalized well.

2.1.3 Disadvantages of video and audio recordings

- Video recordings have a particularly narrow focus
- Video tapes may be over-analysed and consequently lead to the reporting of trivial details
- Tape recordings are difficult in natural settings as people move and extraneous noise interferes
- Transcription of verbal protocols is tedious and time consuming

2.4 Fieldnotes

Making fieldnotes can be a rewarding experience as it allows the researcher to hone his skills in observing details and noting and recording them.

2.4.1 Advantages of fieldnotes

- They provide good illustrative data.
They allow the researcher to anchor observations and later analyse the realities of the field.

They enable the picking up of the complexities of a situation as the researcher could observe and interact and develop better interactions with subjects over time.

They are quite easy to do. Fieldnotes can be made on the spot or after the event. Writing them after the event provides the opportunity for continuous reflective analysis which provides rich data.

2.4.1 Disadvantages of fieldnotes

- The use of fieldnotes may entail some knowledge of sociological frames of reference. This means that the researcher may be treading on unfamiliar grounds and would need to do more reading before the data can be analysed.

- They provide a lot of data which take time to analyse in a systematic way. When finally analysing you can feel that you are groping your way through the data and begin to feel that you are drowning in it.

- Storage space may become a problem. You need lots of boxes and an empty spare room in which you can respectively store and analyse the data.

2.4.2 Developing a Focus with Fieldnotes

The focus of the fieldnotes becomes more defined when themes and patterns emerge to clarify the research question. It is important to develop progressive focusing as part of the research process. Consequently much depends on the quality of the fieldnotes and the skill of the researcher to engage with the data in order to develop meaningful and continuous analysis. This form of observation-analysis interplay can lead the researcher into attributing meaning to phenomena. Consequently the researcher-observer begins to dig deeper into what lies below the surface of observed behaviour.

2.5 Vignettes and critical incidents

Vignettes and critical incidents may be considered as variations of gathering information through fieldnotes. They can provide high-quality fieldnotes. Vignettes and critical incidents may be written as short narratives of people, interactions or situations, which can be used to explain and develop the researcher’s understanding.
of the events under observation. Vignettes are usually descriptive summaries of people and places while critical incidents are usually written summaries of intentions and events.

2.5.1 Danger Points

- In reporting on critical incidents, a researcher can go overboard and add unnecessary colour and description that are non-representative of the situation.
- Descriptions in vignettes equally need to be supported by grounded thematic data. If, for example, you want to describe a teacher as impatient and rigid, you need to be able to justify these descriptions by your reference to your fieldnotes.

2.6 Interviews, focus groups, life histories and other narratives

Interviews and related methods can give access to the more complex issues of the research situations under study. Interviews, if carried out well, allow the voices of participants to be heard and they give a useful dimension to direct the analysis and interpretation of events.

2.6.1 Advantages of interviews

- You get a 100 per cent response rate to your questions.
- You can probe and explore meanings and interpretations held by participants.
- Your hear language and concerns of the participant.
- Participants usually enjoy being interviewed as they can interact with the interviewer.
- They yield good rich data essential to, for example, case study.

2.6.2 Disadvantages of interviews

- Interviews are time-consuming and can be costly. A one-hour interview may take four hours to type and produces data that are recorded on 30 pages of A4 script.
- They can be seen as an intrusion into the lives of the participants especially when your probing becomes personal.
The analysis of interview data can be endless.

Arranging the interviews and getting people to come can become a chore. You might be able to get the same information you need from a questionnaire.

The techniques of interviewing are not that easy to learn.

2.6.1.3 Stages in devising an interview

To develop good interviewing skills, you can use the following guidelines:

1. Brainstorm the question areas on paper.

2. Group the brainstormed ideas into themes.

3. Place the themes in order, starting with the least intrusive and ending with the most intrusive.

4. Drawing on the brainstorm, start to write the questions that enable you to explore the main themes – use open-ended questions.

5. ‘What’, ‘when’ and ‘how’ questions are useful. ‘Why’ questions lead to rational justifications and minimise contradictions and difficulties.

6. ‘To what extent’ questions are useful to give leeway for participants to give opinions. Ask ‘real’ questions that are driven by your curiosity about participants’ lives and perspectives.

7. Put the interviewee at ease. Start off with factual requests, such as name, age, occupation and begin with non-threatening talk. Be friendly and positive. For example ‘Are there some areas of your work where you feel particularly pleased about what you are doing? What about areas where you’d like to do better?’

8. Always end with a positive note.

2.6.1.4 Good conduct in interviewing

1. Arrange sufficient time for the interview. An in-depth interview can easily take an hour. If that is what you need don’t politely ask for a few minutes, because that is all you’ll get.

2. If you are interviewing busy practitioners think how you can pay them back in some way. Can you take story-time for the infant teacher who has given you her or his lunchtime, give the youth worker a hand in some way, like providing some useful reading for the social worker or even offer to help with his or her research project?
3. Find somewhere quiet where you are unlikely to be uninterrupted. Flow and concentration are important in interviews.

4. Almost always tape-record the interview. You will not get good quality data unless you do. The short interviews that are used to inform attitude scales need not be tape recorded. But if you intend to analyse the interview you must have it on tape.

5. Sit comfortably and casually on chairs that are of similar height and with no desk or table between you.

6. Assure confidentiality and emphasise the need for detailed and full responses. You are interested in the trivial day-to-day aspects of what is to be said, as here lies the potential of meaning making and interpretations.

7. Keep a balance between conversational tone and your need to control the direction of the interview. An hour is as long as any interview should last and you need to ensure that your agenda is met in that time.

8. Leave plenty of time for responses after your questions. Reflect back words used by the interviewee. Keep eye contact. Show that you are listening and interested.

9. Refer back to previous responses. Encourage and accept the information you receive. Above all don’t be judgmental either positively or negatively. Aim at being sympathetic.

10. Be prepared to switch off the tape and not probe too far if you feel you are causing distress. Always allow time after the interview for a wind-down.

11. Don’t be put off by inconsistencies. These are usually not lies but confusions. Recognise them as interesting and explore them together.

2.7 Focus groups
These are a form of group interview which is utilised usually to explore issues raised from other forms of data collection (e.g. in a large survey). Focus groups can add depth to early findings; alternatively, they may support the validation of ideas raised in other methods.

Careful attention should be paid to the research question you are exploring and to the establishment of a sample which is representative of the group under attention.
Often you can select a voluntary, professional or other group that is pre-existing which could reflect the group that you may wish to examine. Examples might include a local teachers' group, a market research group or a voluntary organization.

2.7.1 Advantages of focus groups
- Speedy means of gathering information.
- Opportunity to interact directly with respondents.
- Rich amounts of data possible from the open response format
- Flexible: opportunities for use in a variety of settings! Individuals.
- Results are relatively easy to understand.

2.7.2 Disadvantages of focus groups
- Questions can be raised about the representativeness of the group.
- Results may reflect the strong views/opinions of an individual member of the group.
- Interpretation of open-ended questions may be difficult.
- Directly or indirectly, the convenor of the discussion group may influence the other participants.

2.8 Life histories and other narratives
The study of the lives of professionals has become a field of growing interest. At one level if we can understand what makes a good professional we can use that information to inform professional development activities. At another level the very process of revealing one's life history can be a self-informing and personally empowering exercise.

Methods used to reveal life histories include extensive but relatively unstructured interviews, journals and individual taped recall. They usually demand that the participants consider and reflect upon developments in their professional lives and contribute in some way to the analytic process. Life histories are often compared so that common patterns or themes may be revealed.
These methods are sometimes incorporated in the evaluation systems associated with further professional education so that changes in professional perspective as a result of a course of study can be recorded and discussed. Other narratives might include self-descriptions written in an essay format, descriptions of a good practitioner, descriptions of an event at work.

Like transcribed interviews they produce written texts which are amenable to a variety of forms of analysis and analytic comparison.

2.8.1 Advantages of narratives
   - Participants give the evidence in their own voices in their own way.
   - Written description can be produced by a large number of people at the same time, for example, a class of children.
   - They often allow researchers to examine change over time and across context.
   - The story often gives more useful information than simply the sum of its parts.
   - Participants often gain a great deal from the self-reflection that accompanies the process.

Disadvantages of narratives
   - Life histories can be presented for analysis as a vast amount of rambling data.
   - Remembrance can bias the reporting of the past
   - There are sometimes confidentiality problems which may prevent the use of the data.
   - Participants may find themselves revealing more than they might wish to.
   - Analysis of sequential events is difficult to do well.
Self Evaluation Exercise 1
You are given a few research scenarios in the form of research questions. Identify the main method for your investigation and describe the justifications for the method chosen.
1. What is the language use that characterizes the ceremony of a church wedding?
2. What are the views of Dato Sulaiman on the development of Malaysian drama in English? (Assuming that Data Sulaiman is an authority on Malaysian English drama)
3. How does a Malaysian six year old child talk about food in English?
4. How do learners in a communication class ask the instructor questions?

Possible Answers for Self Evaluation Exercise 1
Answers can vary.
1. Audio and video taping - justification - naturalistic setting - able to replay data for analysis
2. Interview - justification - immediate response - allows clarification - participant can relate to interviewer
3. Fieldnotes - justification - developmental study over time - careful and close tracking - detailed
4. Use of checklist - justification - useful baseline data, quick and reliable - structured.
TOPIC 2: CASE STUDY RESEARCH

The methods described above are all possible methods that can be used in a case study. As Brown and Rodgers highlighted (2002: 21), case study involves “an intensive study of the background, current status, and environmental interactions of a given social unit: an individual, a group, an institution or a community”. In this section, you are walked through a case study with relevant exercises to experience, in particular, developmental research in language studies as provided in the text.

Exercise 2.1 (Text, p 23)

You are shown language samples that illustrate data that could be collected from children as they acquire language at different stages of development. They can be collected as fieldnotes by the researcher. Complete the exercise (1-2) to see the changes in English negation.

Answers for Exercise 2.1

1. B, D, C, A and E

<table>
<thead>
<tr>
<th>Phases</th>
<th>Language Samples</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>No go</td>
<td>Lack of subject and variation in negation</td>
</tr>
<tr>
<td>D</td>
<td>You no sit there</td>
<td>Presence of subject but predominant use of “no” as negation</td>
</tr>
<tr>
<td>A</td>
<td>I don’t can explain</td>
<td>Use of negation with inclusion of incorrect use of auxiliary</td>
</tr>
<tr>
<td>C</td>
<td>Do not tell her We don’t like him</td>
<td>Use of do not and don’t as variation.</td>
</tr>
<tr>
<td>E</td>
<td>They don’t want it</td>
<td>Minimal mistakes in the use of negation. Problem with auxiliary is not present</td>
</tr>
</tbody>
</table>
**Exercise 2.2**

In this exercise, you are given samples of letters which may be regarded as instances of narratives. Rearrange the letters and concentrate just on the development of sentence length and pattern. Use the table below to record your observations.

<table>
<thead>
<tr>
<th>Phase according to chronology (earliest to latest)</th>
<th>Language samples</th>
<th>Sentence Length</th>
<th>Sentence Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Answers to Exercise 2.2**

<table>
<thead>
<tr>
<th>Phase according to chronology (earliest to latest)</th>
<th>Language samples</th>
<th>Sentence Length</th>
<th>Sentence Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>D (As provided in text)</td>
<td>Shortest</td>
<td>No full stop</td>
<td></td>
</tr>
<tr>
<td>B (As provided in text)</td>
<td>Slightly longer than D</td>
<td>No full stop</td>
<td></td>
</tr>
<tr>
<td>C (As provided in text)</td>
<td>Slightly longer than B</td>
<td>No full stop</td>
<td></td>
</tr>
<tr>
<td>F (As provided in text)</td>
<td>Noticeably longer</td>
<td>No full stop</td>
<td></td>
</tr>
<tr>
<td>E (As provided in text)</td>
<td>Slightly longer than F</td>
<td>Use of full stops</td>
<td></td>
</tr>
<tr>
<td>A (As provided in text)</td>
<td>Not longer - some consistency</td>
<td>Use of full stops</td>
<td></td>
</tr>
</tbody>
</table>
TOPIC 3: INTROSPECTIVE RESEARCH

Using audio recordings of verbal protocols is an example of introspective research. Several principles for introspective studies are emphasised by Brown and Rogers (2002: 55). While such studies had been criticised for being unscientific, they now enjoy a certain recognition as no other methods can be said to be as useful as getting information about mental processes which cannot be overtly “seen” in operation. Thus the worth of it in getting people to verbalise experience. However this method does require some training. As pointed out by Brown and Rogers (2002: 57), the recording should be unobtrusive, and talk aloud is not a form of social conversation but the researcher must also be careful not to be seen as influencing what is said or recalled.

In qualitative data management, it has been emphasised that the identification of patterns and trends is important for the data to make sense. Thus categories are useful in classifying tasks and responses. Brown and Rogers show how analysis of verbal protocols can be done. Steps that can be followed are listed on page 63 together with examples of coding systems.

Exercise 3.9 (Text, p.66)
Complete this exercise based on your reading of chapter 3 of the text.
Exercise 3.11
Answers
1. Type C – pronunciation tries
Type A: spelling tries
2. Yes, E and A sound alike, couldn't go together without a consonant
It has to do with pronunciation and at the same time a spelling convention
with regard to vowel clusters.
I will code it as A/C as both processes are involved.

Conclusion
Your research question leads you, through an examination of design options, to the
selection of the data collection method you will use. Decisions about research
questions, design and method have to be made simultaneously so that the
implications of each for each can be acknowledge at the planning stage. In this unit
the qualitative methods are emphasised and some are applied specifically in case
study and introspective research. For example, a research question that implies that
the voices of participants will be heard probably leads to a case study which includes
interviewing as a research method. A question which wishes to explore mental
processes may involve the use of verbal protocols.
UNIT 7
QUANTITATIVE DATA

Introduction

This unit is about choosing a design method for investigating quantitative research and the interpretation of data. Some statistical methods are discussed to obtain the relevant data.

Topics of this unit:

1. Basics of Experimental Research
2. Selecting the Design Method
3. Data Analysis

The objectives of this unit are to:

1. examine the features of quantitative research
2. describe design methods
3. list the steps and procedures in data analysis
1.0 Basics of Experimental Research

Experimental Research is based on a long scientific tradition which has been shaped for social science research. In designing an experimental study, a number of stages are recommended:

- *Establishing hypotheses.* This usually culminates with the production of a null hypothesis.
- *Planning a test setting with experimental and control situations.* Independent variables will be tested in the experimental context, whilst dependent variables will relate to the control setting and the outcome.
- *Giving special attention to the removal of extraneous variables* (i.e. any outside influences that could affect the test).

When you wish to consider the effect of \( x \) (the manipulation of independent variables) on \( y \) (the outcome variables) you will require (at least) two groups – a control group, and an experimental or treatment group. Control groups are used to examine whether changes might not be taking place anyway (without the intervention), or whether there might be outside factors that might be studied. Different experimental designs reflect the many circumstances in which the control and treatment groups are used.

For example, when you wish to examine whether you have significant changes over time, experimental designs allow for intervention studies, whereby any group of individuals can be examined before intervention to provide baseline data, immediately after an intervention, and at subsequent points thereafter for 'follow up' data. This process allows you to identify if any change has taken place and if it persists.

However, before you start, you will need to consider the following points:

- *Selecting your sample.* Which individuals will be selected? Are you utilising 'matched' groups, and comparing two such groups? If so, how will
the groups be established? Whether you are selecting geographical settings (e.g. comparing practice areas, or school catchment areas) or placing groups, there should be some means of 'matching' people or locations, whether, for example, by age, social class, intelligence (people) or size (area). Matching groups however can be problematic; despite much time and energy, many researchers have decided that this is impossible to do thoroughly.

- Size of your sample. In order to test your hypothesis rigorously you will need information from a representative sample of a size that will satisfy the demands of the statistical test you want to use.

1.1 Three types of experimental designs

To refresh, there are a few common approaches undertaken within experimental research (Unit 5). They are:

(a) One group pretest – post-test. In this situation testing of subjects takes place before and after some interventions. For example, a new curriculum project may be tested, or a new treatment in a clinical setting. In this design, the same group is tested at the beginning and end of the intervention. Whilst there are advantages in the retention of the same group of people, there are problems of assessing the influence of outside variables during the period between the initial and end tests.

(b) Pretest – post-test control/treatment group design. Two groups are established, and pretested at any early stage to ensure that there is a match between the groups. One group is the control group, while the other is the experimental group. Variations can occur by the addition of further groups to the test situations.

After the experience of the intervention in the experimental group there is a post-test to establish whether there is a significant difference between the experimental and control groups.
(c) The quasi-experimental pretest-post-test design. This is a variant of (b). In many real-life situations it is difficult to establish matched experimental and control groups. In these situations there is a compromise since it is difficult to assign people or settings to different groups at random. Whilst it assists the design if there is as close a match as possible, a perfect match may be very difficult to achieve. For example, in a study on vocabulary development you may have to use two settings that may not be a mirror image of one another. A typical school situation may not allow external disruption. As such, 2 classes are chosen but there is no random assigning of students. One intact group is the control group and the other is the experimental group. While a similar level in terms of general proficiency can be obtained, the two groups are not perfectly matched.

A pretest helps to establish similarities between groups and if there is no significant difference is found, then they are considered to be more or less reflective of each other. The design may look like this:

<table>
<thead>
<tr>
<th>Group</th>
<th>Pretest</th>
<th>Independent variable (Intervention)</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>Y1</td>
<td>X</td>
<td>Y2</td>
</tr>
<tr>
<td>Control</td>
<td>Y1</td>
<td>-</td>
<td>Y2</td>
</tr>
</tbody>
</table>

(d) One-group Time-Series Design. In this design, the same group may undergo a series of tests. The design may be represented as below:

Y1 Y2 Y3 X Y4 Y5 Y6

Thus Y indicates a series of tests before and after the treatment.
TOPIC 2: SELECTING THE DESIGN METHOD

2.1 Selecting the Design Method

When choosing your research methods you need to be able to answer yes to each of the following questions:

- Is this method going to get the kind of information I need?
- Can I be sure that I'm building up as accurate a picture of the event(s) I am studying as I possibly can?
- Can I manage to do this with the people concerned in the time available?

These issues can be summarised as concerns about validity, reliability and feasibility.

2.1.1 Validity

The validity of the information you gather is seen in the extent to which your design methods pick up what you expect them to. For example, teachers' responses to a questionnaire about how they teach may not be a valid indication of how they actually do teach in classrooms.

The first simple question asked by a research practitioner when considering validity is: 'Is what I'm finding out making sense?' In other words, 'Do my data have face validity?' Then you may want to ask whether the sampling which may be questions asked in a questionnaire covers the right content. It could also be a test used to test the outcome of a treatment. Then you may want to ask if the content has been well sampled in the test. In this case you are asking about content validity. The main purpose is to obtain construct validity, meaning that whatever measures that are used, they be measuring what the researchers claim to measure of the construct under study.

Validity questions are far-ranging in the sense research decisions are set in a chain of events. At any stage, validity can be affected if proper thought is not given and wrong decisions are made. Black (1999) captures this notion through the representation shown below:
2.1.2 Reliability

One definition of reliability suggests that measures or data collection methods should be uninfluenced by changes in context. In other words, results should be consistent. However, reliability in terms of consistency cannot always be a goal. Reliability in terms of getting the best information available and building up as rich and complex a picture should be. It is part of the validation effort and not be a goal on its own. As such, it is possible for results to be reliable but not valid. One can be consistently wrong and this can lead to invalid results.

2.1.3 Feasibility

The first thing a researcher wants to set out as a goal in research is to finish it. So we start with some guidelines which if heeded should help in completing your research without too much pain.
• Don't
  • Gather too much data from too wide a range of sources; you'll end up with superficiality.
  • Gather too much data: you'll never have time to analysis all.
  • Commit yourself to gathering data from sources which haven't yet agreed to help you or might be upset by your enquiries.
  • Forget that data collection is only part of the process: reading, analysis and writing up all take much longer than collecting the information.

• Do
  • Be focused and gather only the information you need.
  • Work out a realistic time-schedule before you start.
  • Check that other people really know what you want from them and are willing to co-operate.
  • Remember that you have family, friends, or a job, and that research is only part of life

With these considerations about validity, reliability and feasibility in place, there is a greater chance of success in your research.

2.2 Components of an Experimental Method Plan

In planning the design method, it would be helpful if the researcher has a checklist of questions to act as guidelines in the decision-making process at different stages of the research process.
A Checklist of Questions for Using an Experimental Procedure

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who are the participants in the study? What kind of population(s) are</td>
<td></td>
</tr>
<tr>
<td>involved?</td>
<td></td>
</tr>
<tr>
<td>How were the participants selected? What was the sampling method</td>
<td></td>
</tr>
<tr>
<td>used?</td>
<td></td>
</tr>
<tr>
<td>How many participants will be in the experimental and control</td>
<td></td>
</tr>
<tr>
<td>groups(s)?</td>
<td></td>
</tr>
<tr>
<td>What is/are the dependent variable(s) in the study? How will it be</td>
<td></td>
</tr>
<tr>
<td>measured? How many times will it be measured?</td>
<td></td>
</tr>
<tr>
<td>What is/are the treatment condition(s)? How is it operationalized?</td>
<td></td>
</tr>
<tr>
<td>What experimental research design will be used?</td>
<td></td>
</tr>
<tr>
<td>What would a visual model of this design look like?</td>
<td></td>
</tr>
<tr>
<td>What instrument(s) will be used to measure the outcome in the study?</td>
<td></td>
</tr>
<tr>
<td>Why was it chosen? How was it developed? Does it have established</td>
<td></td>
</tr>
<tr>
<td>validity and reliability? Has permission been sought to use it?</td>
<td></td>
</tr>
<tr>
<td>What are potential threats to validity for the experimental design and</td>
<td></td>
</tr>
<tr>
<td>procedure? How will they be addressed?</td>
<td></td>
</tr>
<tr>
<td>Will a pilot test of the experiment be conducted?</td>
<td></td>
</tr>
<tr>
<td>What statistics will be used to analyze the data?</td>
<td></td>
</tr>
</tbody>
</table>
Exercise 1

Professor Lee wants to test the possible influence of using class readers on the improvement of reading comprehension. He hypothesized that the use of class readers would positively enhance upper primary children’s reading comprehension scores. His null hypothesis was that after the trial of using class readers, there would be no significant difference between the two groups, the one exposed to class readers and the one not exposed.

From the above information, use the checklist given and answer the questions raised about the quantitative research design. Where information is not provided, use your judgment to complete the information logically.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who are the participants in the study? What kind of populations are involved?</td>
<td></td>
</tr>
<tr>
<td>How were the participants selected? What was the sampling method used?</td>
<td></td>
</tr>
<tr>
<td>How many participants will be in the experimental and control groups(s)?</td>
<td></td>
</tr>
<tr>
<td>What is/are the dependent variable(s) in the study? How will it be measured? How many times will it be measured?</td>
<td></td>
</tr>
<tr>
<td>What is/are the treatment condition(s)? How was it operationalized?</td>
<td></td>
</tr>
<tr>
<td>What experimental research design will be used?</td>
<td></td>
</tr>
<tr>
<td>What would a visual model of this design look like?</td>
<td></td>
</tr>
<tr>
<td>What instrument(s) will be used to measure the outcome in the study? Why was it chosen? How was it developed? Does it have established validity and reliability? Has permission been sought to use it?</td>
<td></td>
</tr>
<tr>
<td>What are potential threats to validity for the experimental design and procedure? How will they be addressed?</td>
<td></td>
</tr>
<tr>
<td>Will a pilot test of the experiment be conducted?</td>
<td></td>
</tr>
<tr>
<td>What statistics will be used to analyze the data?</td>
<td></td>
</tr>
</tbody>
</table>
Suggested Answer

Exercise 1:

Who are the participants in the study? What kind of population(s) are involved?
The participants are upper primary school children. The population is from the primary school population.

How were the participants selected? What was the sampling method used?
The participants and the class are selected randomly from the school register.

How many participants will be in the experimental and control groups(s)?
Intact groups of 30 are used for both the experimental and control groups.

What is/are the dependent variable(s) in the study? How will it be measured? How many times will it be measured?
The dependent variable is reading comprehension and the outcome of the experiment will be reading comprehension performance based on test scores.

What is/are the treatment condition(s)? How was it operationalized?
The treatment consisted of five weeks of using graded class readers in addition to the normal English classes. The operationalised conditions are to organize lesson plans to teach reading comprehension through the use of selected and graded class readers. Both control and treatment groups are subject to pretests that test reading comprehension. The treatment group is subject to the use of class readers while the control group undergoes normal English lessons for the five weeks. They are not told about the extra classes for the treatment group. Both are given a post test on reading comprehension after five weeks to measure the outcome.
<table>
<thead>
<tr>
<th>What statistics will be used to analyze the data?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What experimental research design will be used?</td>
</tr>
<tr>
<td>Descriptive statistics to show the results. T tests can be used to compare the means from the two groups (pre and post tests).</td>
</tr>
<tr>
<td>This is a quasi-experimental research design.</td>
</tr>
<tr>
<td>What would a visual model of this design look like?</td>
</tr>
<tr>
<td>Group 1 (pretest) ______ X₁ ______ Y₁ (post test)</td>
</tr>
<tr>
<td>Group 2 (pretest) ______ X₀ ______ Y₀ (post test)</td>
</tr>
<tr>
<td>What instrument(s) will be used to measure the outcome in the study?</td>
</tr>
<tr>
<td>Why was it chosen? How was it developed? Does it have established validity and reliability? Has permission been sought to use it?</td>
</tr>
<tr>
<td>The instrument is a reading comprehension test used as a pre and post test. It was chosen as it can give measurable outcomes. The test was developed as a class test used in the previous year as a mid year test of reading comprehension. It was vetted by a panel of teachers and administered to all students as a mid year test. Permission was obtained from school for its use. Marking will be done by the researcher as the questions are in multiple choice format.</td>
</tr>
<tr>
<td>What are potential threats to validity for the experimental design and procedure? How will they be addressed?</td>
</tr>
<tr>
<td>Potential threats are: students do not turn up for the extra class. Sample size may dwindle. Five weeks may be too short for the experiment to have results. Students in the control group may get to hear of the experiment and improve themselves to rival the experimental group. The matched group may not be really matched as a result of lack of information. The teacher factor is difficult to control.</td>
</tr>
<tr>
<td>How the threats can be addressed: The experimental group is to be told that the grades do not affect the final score used in school. Researcher could offer a small gift to motivate attendance such as going on a field trip. Teachers involved are given a briefing about the study. Researcher should seek advice about the matched samples before the experiment.</td>
</tr>
<tr>
<td>Will a pilot test of the experiment be conducted?</td>
</tr>
<tr>
<td>No it is not necessary as the test is from the bank of school tests.</td>
</tr>
</tbody>
</table>
Constructing a Questionnaire

Aside from the use of tests, questionnaires are also common instruments widely used in gathering quantitative data. When using them, evaluate the advantages and disadvantages associated with them before making a decision. After a decision is made, a questionnaire is constructed or adapted to obtain the data.

Advantages of questionnaires

• The give useful background information.

• They can be administered by post or in person to a lot of people at the same time in one setting.

• They are usually reliable and can be administered before and after an intervention.

Disadvantages of questionnaires

• Recipients usually do not like to answer them.

• The descriptive data they produce may restrict your skills of analysis.

• You often need to chase up on non-returns as people often delay answering them. As a result, your sample size is always of concern.

• They may give only quite superficial information as a result of the way questions are asked.

2.3.1 *Stages in writing a questionnaire*

If you decide to use a questionnaire, then it is good practice to go through the following steps:
1. Take a blank piece of paper and write your research question in the middle of it.

2. Brainstorm and write down on the paper the types of information you need in order to answer the research question. Background information such as age, qualifications experience are usually included.

3. Group the brainstormed areas: for example, career issues, domestic issues, practice issues, and place them in order. Put simple questions first and more searching questions later.

4. Look at them again. Do you really need all that information? Is there overlap?

5. Start to write the questions.

6. Have only one idea in each question: for example ‘Do you find writing difficult and challenging?’ could produce No and Yes as an answer from respondents. Think whether you want closed Yes-No questions or more open questions.


8. Begin to think about analysis as you write. Open-ended questions produce written answers which take time to analyse.

Closed questions may not be simply Yes or No but may require you to set up categories of response, for example please tick the box that indicates your age.

<table>
<thead>
<tr>
<th>20 or less</th>
<th>21-30</th>
<th>31-40</th>
<th>41 or more</th>
</tr>
</thead>
</table>

You may also wish people to tick or underline their own responses from your provided options or even rank order the frequency of use of, for example, a service you provide.
9. Try to avoid response set which may come in a long run of Yes – No questions, such as:

Are you a hard working person?
Are you kind to children?
Do you have a large vocabulary?

10. Check that there is a logical progression in the order of the questions.

11. Try to keep the questionnaire short. Two pages maximum is a reasonable guide.

12. Above all, keep it simple.

2.3.2 Constructing a Attitude Scale

Strictly speaking, an attitude scale differs from a straightforward questionnaire. An attitude scale is a list of statements to which we ask people to respond by showing the extent to which they agree or disagree with a statement. For example:

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I like to creative writing</td>
<td></td>
</tr>
</tbody>
</table>

A questionnaire collects simpler, more descriptive data about, for example, what people do or have done. Alternatively, you may use the semantic differential technique and ask for responses to a statement such as:

Designing a study as a practitioner research is

<table>
<thead>
<tr>
<th>Easy</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Difficult</th>
</tr>
</thead>
</table>
When using semantic differentials it is essential that the descriptors (e.g. easy-difficult) are opposites and do offer a distinct dimension (see Oppenheim, 1992).

Respondents can also indicate their attitudes to the statement by marking a point on the seven-point scale and responses are scored from +3 on the positive side to −3 on the negative side as shown below.

3 2 1 0 1 2 3

A series of similar statements about aspects of creative writing research on a rating sheet could indicate a person’s attitude towards evidence-based practice. Responses to individual items (e.g. designing a study) can be averaged so that the attitudes of distinct sub-groups may be compared. Several separate rating sheets should be used.

Advantages of attitude scale

- Attitudes often indicate how people will behave.
- They provide data with which you can demonstrate your skills of data analysis.
- They do allow you to go below the surface of issues and yet keep your data numerical.
- They can be administered by post or in person to a lot of people at one time in the same setting.
- They are reliable and can be administered before and after an intervention.

Disadvantages of attitude scales

- Attitudes are influenced by context and therefore do not always remain constant as indicators of behaviour.
- They can be seen as yet another questionnaire and be unpopular with recipients.
- You may need to chase up on non-returns to ensure that your sample is appropriate.
2.3.3 The Likert Scale

As seen above, there are a few types of attitude scales. The scale that is popularly used is the Likert Scale.

Stages in compiling a Likert Scale

1. Decide on the focus on the scale and brainstorm around the focus.

2. Compile a short (10 to 15 minute) interview from the brainstorm.

3. Interview three or more people from the population (though not the sample) to whom you will be giving the scale.

4. Return to your brainstorm and group the issues in the way described for a questionnaire.

5. Look at your interviews, match statement in the interviews to the issues in the brainstorm, see whether additional points are raised in the interviews, include them if they are useful or important to this interview sample.

6. Write out your attitude statements. Avoid negatives and double focus questions; for example, avoid statements like ‘The interview room is clean and welcoming’. It is difficult to answer as the room may not be both clean and welcoming. Try to keep it short – a page to two pages in length.

7. Decide whether you want a five- or four-point scale. Some people think that a five-point scale results in over-use of the third point (the neutral or not sure choice). Others feel that a genuine mid-point response should not be denied of the respondents.

8. Check the words on the scale. Can all your statements be answered by using ‘strongly agree’ to ‘strongly disagree’, or are they ‘all the time’ to ‘none of the time’, or ‘or lot’ to ‘none’ statements?
9. Do you need to regroup some statements? Some statements can be regrouped so that appropriate scales can be applied to specific sections of the instrument.

10. Write full and careful instructions (with examples).

- You may also want some questionnaire information, for example, name, age or occupation. This may be particularly important as one easy way of using attitude scale data is to compare the attitudes of different groups to the same event.

2.4 How to Avoid Problems in Writing Good Survey Items

A comprehensive listing of things to avoid in writing good survey items are listed by Brown and Rogers (2002) on p. 143. Do refer to them and their examples as guidelines.

**Exercise 2:**

After you have gone through the guidelines, go through Exercises 5.17, 5.18 and 5.20 (pp. 145-146). After you have tried them, compare your answers with those provided in the answer key provided.
Answers for Exercise 2:

Exercise 5.17

Q1: Leading question
Q2: Dutch teachers are Dutch in nationality or those teaching the Dutch language?
Q3: What kind of answer is wanted? Education or language teaching?
Q4: Use of double negatives
Q5: Lead in question

Exercise 5.18

Q15: ambiguous - What are the kinds of teaching techniques?
Q17: "not the process by which it occurs" is difficult to understand. Choose simpler language like: In learning writing, the final product is more important than undergoing the process.
Q18: too long. Just go to the point: Students learn grammar better when grammatical rules are explicitly taught or Students learn grammar better when they discover the rules themselves.

Exercise 5.20

1. The difference is in the range of a choice.
2. A five point scale is more sensitive than a four point scale.
A four point scale avoids a tendency to overuse the mid point which indicates a neutral or not sure stance.
TOPIC 3: DATA ANALYSIS

3.0 Steps and Procedures in Data Analysis
In analyzing quantitative data, reference is often made to data obtained from questionnaires, attitude scale, and the use of some statistics.

3.1 Analysing Questionnaire Data
To begin with, the analysis of questionnaires is usually quite simple. Your original design could include a final column which could be used for coding purpose. After swift categorisation of data, you can then remove the coding material from the questionnaire sheet and transfer the information quickly to a computer database.

- For example:

  Q10 How often do you attend the Writing Center?

  Daily  Weekly  Other  Coding Column

  During  2

  In this case, daily is coded 1, weekly 2, and other 3.

  You can then proceed to aggregate and compare responses.

3.2 Analysing Attitude Scale Data
In analyzing data obtained from an attitude scale, the following steps are recommended:

  Step One: Take an unused copy of the scale.

  Step Two: Mark all the statements which indicate a negative attitude to the event, for example 'Learning grammar is a waste of time'.
Step Three: At the top of the Scale give a score to each degree of response. On a five-point scale it would look like this:

<table>
<thead>
<tr>
<th>Strongly</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning grammar is a waste of time</td>
<td></td>
</tr>
</tbody>
</table>

Step Four: Go through all the responses to each statement in turn, marking the number of responses on each degree of responses by the score

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning grammar is a waste of time</td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>###</td>
</tr>
<tr>
<td></td>
<td>###</td>
<td>###</td>
<td>###</td>
<td>###</td>
</tr>
</tbody>
</table>

Step Five: Calculate the average response to each statement by multiplying the number of responses on each degree of responses by the score

<table>
<thead>
<tr>
<th>1 x 1</th>
<th>4 x 2</th>
<th>2 x 3</th>
<th>10 x 4</th>
<th>13 x 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning grammar is a waste of time</td>
<td>1</td>
<td>8</td>
<td>5</td>
<td>40</td>
</tr>
</tbody>
</table>

Total the item score to 120

And divide by the number of respondents

120

30
The average item score for this item is 4.00 indicating a positive response.

**Step Six:**

Other items will score above and below this enabling you to rank order the importance of items.

<table>
<thead>
<tr>
<th>Item</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Grammar leads to better writing’</td>
<td>4.12</td>
</tr>
<tr>
<td>‘Learning grammar is not easy’</td>
<td>4.00</td>
</tr>
<tr>
<td>Information on ‘research on grammar is not easily available’</td>
<td>3.78</td>
</tr>
</tbody>
</table>

You may want to look at the degree of spread of response to some items. A score of around 3.00 can be a result of most people range of very different responses. Once you have averaged item scores and can rank order them you can compare before-and-after intervention results or the attitudes of different participants (by analysing the groups separately).

The way you have organised and analysed the information from your questionnaires or scales will depend upon the questions you are trying to address in your study. You may want simple survey level information for which percentages will be sufficient. You may want to rank order overall responses to an attitude scale.

You may want to consider the relationship between responses to some questions and responses to others, for example differences between recently trained and experienced practitioners.

You may want to directly compare responses of two specific groups, for example practitioners and managers.

You may find that after looking at your data there are relationships you had not previously considered. This is an exciting element of research. Do not ignore this, follow it up and include it in your analysis.
3.3 Analysing Checklist, Event sampling and Doing Content analysis

If you are using prepared checklists or taking counts of events, you will produce simple quantifiable data which can be analysed in much the same way as closed questionnaire data. In the case of content analysis, the most commonly used form of content analysis involves the identification of themes and patterns or categories of evidence. These patterns and themes can then be further broken down and a system of coding is devised to manage the data.

Stages in creating data-driven categories

You may follow these steps in creating the categories for coding:

1. Photocopy the text (e.g. an interview).
2. Read through it several times.
3. Identify key sections and number the sections on both copies of text, for example, Interview 1, Statement 3 is coded as 1.3.
4. Cut out the key sections on one copy. Keep the numbering clear.
5. Sort and group the extracts according to the research focus.
6. Label the groupings and create your tentative categories.
7. Repeat the exercise with other interviews.
8. Test the rigour of your categories. Can the categories be applied to the data? Ask relevant people to look at the categories and invite their comments.
9. Look for overlaps between categories and rework on the categories if necessary to make them clearer.
10. Discard weak categories especially if they are too close to other categories.
11. Be ready to create new categories and re-sort the data if necessary.

12. Use a separate page for each category.

13. Group the extracts according to their similarities. Justify the groupings. These now comprise your coding groupings.

14. List each coding grouping under the category label, and descriptor on the prepared page. Give at least one example for each coding. More examples may be necessary to cover the variety of responses.

15. Number each coding group and check their validity.

3.3.2 Simple sorting

- Data may now be sorted in a variety of ways. These might include
  
  a) Questions which got high, medium or low responses.
  
  b) Questions which got accurate or inaccurate responses.
  
  c) Questions which got expected or unexpected responses.

- You may then explore the common features of successful questions or aspects of the surprising responses by further categorization.

- You may be able to identify and group categories that are surprising and accurate, or surprising and inaccurate.

These simple categorizations can then be considered for their implications for future practice and task setting. In a sense they help to meet the goals of a stated objective. This kind of data sorting can be entirely pragmatic and creative, designed with the purpose of suiting the needs of the research practitioner. The research questions would be referred to constantly as they form the basis for the codings.
3.4 Using Descriptive Statistics

Using statistics is a common practice in experimental research. The aim here is to expose the beginning researcher to a number of basic methods of analyzing data which requires some fundamental knowledge of statistics. More detailed information has to be obtained from books that deal with statistical analysis. The Text deals with the more used descriptions and they will from the basis of our discussion.

Many of the descriptive statistics or measures can be undertaken on a computer with the use of suitable programs (e.g. SPSS-X). The most common descriptive techniques used in survey work are as follows.

3.4.1 Use of average measures

The term ‘average’ can include a series of different values. Depending upon the nature of your data, you may find yourself using one or more the following measures:

- Mode
- Median
- (Arithmetic) Mean

To help explain each of these terms, some short examples are presented. For example, consider the following set of children’s age:

4, 5, 6, 7, 10, 11, 12, 14, 16, 17

The mode is the most frequently occurring value. In this case it is 6. The median is the middle score of a set of values (when placed in rank order). In this case it is 10.5 (midway between 10 and 11).

The median is the most frequently occurring value. In the set of values given above, the median is 6.
The (arithmetic) mean ($x$) or average is calculated by adding together all the values and dividing that result by the number of scores. This can be represented by the formula:

\[
x = \frac{\text{sum of values}}{\text{total no. of values}}
\]

There are advantages and disadvantages of using different measures. They are listed on the next page.

Figure 1: Advantages and disadvantages of the mean, median and mode

<table>
<thead>
<tr>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mode</strong></td>
<td>Only uses a relatively small amount of the available information</td>
</tr>
<tr>
<td>Easy to calculate (where sample is small)</td>
<td>More difficult to find if data numbers are large (some computer programs do not find it)</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>Does not use all of the information</td>
</tr>
<tr>
<td>Easier to calculate than the mean</td>
<td></td>
</tr>
<tr>
<td>More suitable when a small number of extreme scores are evident (i.e. when data are not normally distributed)</td>
<td></td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>Time-consuming to calculate</td>
</tr>
<tr>
<td>Uses all data</td>
<td>Unsuitable when extreme scores can distort the calculation, i.e. when the data is not normally distributed</td>
</tr>
<tr>
<td></td>
<td>Interval data is used</td>
</tr>
</tbody>
</table>
Exercise 3:
Go to Exercise 5.8 (p.129 of the Text) and calculate the mean, median and mode.

Answer for exercise 3:
As found on p.258 of the Text.

3.4.2 Measures of dispersion

To know more about how scores are dispersed, you may find the following to be valuable:

- Range values
- Standard deviation

Range values

Two separate values are often used, the highest and the lowest. The age example below will be used.

- 3,5,6,6,10,11,12,14,16,17

In this example the standard range value is 14 (the difference between the lowest and highest values) values.
Standard deviation

The standard deviation (σ) is a more useful descriptive statistic in describing dispersion. It measures the distribution of individual scores around the mean. If the standard deviation is large, then there is much dispersion around the mean. If deviation value is small, then the dispersion is much less. It is calculated as follows (using the set of ages):

3,5,6,6,10,11,12,14,16,17

- Standard deviation

<table>
<thead>
<tr>
<th>Raw scores (x)</th>
<th>(x - \bar{x})</th>
<th>d (x - \bar{x})</th>
<th>d^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>10</td>
<td>-7</td>
<td>49</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>-5</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>-4</td>
<td>16</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>-4</td>
<td>16</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>10</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>10</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>10</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>16</td>
<td>10</td>
<td>6</td>
<td>36</td>
</tr>
<tr>
<td>17</td>
<td>10</td>
<td>7</td>
<td>49</td>
</tr>
</tbody>
</table>

\[\Sigma d^2 = 212\]

\[\text{The sum of } d^2\]

\[
\sigma = \sqrt{\frac{\Sigma d^2}{n - 1}} = \sqrt{\frac{212}{10 - 1}} = \sqrt{23.56} = 4.85
\]

Interpretation of a standard deviation can be varied. In isolation, its value is limited. However, amongst samples with similar means but different standard deviations, you could identify which data are more dispersed than others. The smaller the standard deviation, the less the dispersion. For example, there are two standard deviations, 4.32 and 14.89 for two groups of students obtained from the post tests or
reading comprehension. The group who has a standard deviation of 4.32 is less varied than the group with a standard deviation of 14.89.

Data Display

Graphs of frequency distributions

You might wish to examine the frequency of scores/values. For example, if you are examining the distribution of intelligence – through IQ scores – then the best method to display this material would be through a graph of frequency distribution. Assuming a large representative sample, the shape of a frequency graph can be shown in the figure of a normal distribution, where:

- Mean (the arithmetic average), median (half-way point in the distribution) and mode (most frequently occurring value) occur at the same value;
- It is bell-shaped and has the same shape either side of the mean;
- The curve is relatively flat near the mean, and it steepens with distance from the mean, and then flattens again further away from the mean;
- In a perfect normal distribution, there are certain properties of how many values you would expect to find within certain limits around the mean. For example, approximately 34 percent of cases in a normal distribution fall between the mean and one standard deviation above and below the mean.
Another example is found on p. 136 of the Text.

However, it is likely that many frequency distributions will be skewed distributions. Unlike the normal distribution, there will be different mean, median and modal values. In skewed distributions the median value will have a higher or lower value than the mode. As a result, there will be positive and negative skewed distributions respectively.

- Skewed distributions may be found where you have a small sample, or a biased sample (e.g. all the scores are from the best English class).
- In certain cases, where there are zero values that are achievable, you may identify a positive skew where the frequency curve declines from an initial peak.
Exercise 4:

Exercise 5.11 and 5.12 (p.134-135 of the Text).

Answers for Exercise 4

Exercise 5.11:

<table>
<thead>
<tr>
<th>C1 ages</th>
<th>C2 mean</th>
<th>C3 difference</th>
<th>C4 squared difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>30.73</td>
<td>9.27</td>
<td>85.93</td>
</tr>
<tr>
<td>35</td>
<td>30.73</td>
<td>4.27</td>
<td>18.23</td>
</tr>
<tr>
<td>34</td>
<td>30.73</td>
<td>3.27</td>
<td>10.69</td>
</tr>
<tr>
<td>31</td>
<td>30.73</td>
<td>0.27</td>
<td>0.07</td>
</tr>
<tr>
<td>31</td>
<td>30.73</td>
<td>0.27</td>
<td>0.07</td>
</tr>
<tr>
<td>30</td>
<td>30.73</td>
<td>-0.73</td>
<td>0.53</td>
</tr>
<tr>
<td>29</td>
<td>30.73</td>
<td>-1.73</td>
<td>2.99</td>
</tr>
<tr>
<td>29</td>
<td>30.73</td>
<td>-1.73</td>
<td>2.99</td>
</tr>
<tr>
<td>27</td>
<td>30.73</td>
<td>-3.73</td>
<td>13.91</td>
</tr>
<tr>
<td>27</td>
<td>30.73</td>
<td>-3.73</td>
<td>13.91</td>
</tr>
<tr>
<td>25</td>
<td>30.73</td>
<td>-5.73</td>
<td>32.83</td>
</tr>
</tbody>
</table>

Mean = 338/11 = 30.73
SD = 4.07
Low-high = 25 - 40
Range = 16 (40-25+1)
Answers for Exercise 4

Exercise 5.12:

<table>
<thead>
<tr>
<th>C1 ages</th>
<th>C2 mean</th>
<th>C3 difference</th>
<th>C4 squared difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>65</td>
<td>50</td>
<td>15</td>
<td>225</td>
</tr>
<tr>
<td>61</td>
<td>50</td>
<td>11</td>
<td>121</td>
</tr>
<tr>
<td>60</td>
<td>50</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>54</td>
<td>50</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>50</td>
<td>50</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>50</td>
<td>50</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>47</td>
<td>50</td>
<td>-3</td>
<td>9</td>
</tr>
<tr>
<td>41</td>
<td>50</td>
<td>-9</td>
<td>81</td>
</tr>
<tr>
<td>22</td>
<td>50</td>
<td>-28</td>
<td>784</td>
</tr>
</tbody>
</table>

\[ \frac{\sum(x - M)^2}{N} = \frac{1336}{9} \]

Mean = 450/9 = 50  
SD = 12.18  
Low-high = 22 – 65  
Range = 44 (65-22+1)

3.5 Using Correlational Methods

In describing results from a research, often we want to know about the relationship between the variables studied. The result of doing correlational research is getting a correlational coefficient that will help to explain the strength of relationship between the variables. The coefficient can range from 0.00 to 1.00. A coefficient of 0.00 would indicate that there is no relationship at all while 1.00 indicates a perfect correlation. There can also be a negative correlation if the relationship is inverse. Look at the examples provided on pp 166-167 in your Text. The kind of correlations that are calculated depend on the scale used for the classification of data.
For our purposes, three kinds of data can be identified.

**Interval data.** Interval data are numerical data that come from scales in which regular measures with intervals are recognised (e.g. tests scores, ages, heights and weight). The magnitude of the differences between observation within the data set can be measured. Tests that demand data to be in this format include t-test and Pearson's Product-Moment Correlation Coefficient. You can also convert the data to the other two types, ordinal and nominal.

**Ordinal data.** Data are collected in such a way that they can be put in order or position. An ordinal scale is a measure of a set of observations with numbers which indicate which observation had more or less of the underlying property. Examples include the ranking of students' performance on a test e.g. 1. below average, 2. average, 3. above average. Interval data can be converted to ordinal data by ranking for example, scores or ages. Tests that use ranked data include the Mann-Whitney U test, and the Spearman Rank-Order Correlation (However, these kinds of statistics are not dealt with in this module. Students are advised to consult books on statistics if these statistics are needed).

You can convert ordinal data to categorical data, but you are unable to change ordinal data to interval data.

**Categorical data.** Data are collected or sorted into different categories, such as male/female, or from a questionnaire survey – yes/no/don't know. Frequencies of each category will be available, and these frequencies can be utilised for the chi-squared test. There is no opportunity for conversion of categorical data to either ordinal or interval data. The term 'categorical data' is a refinement of the term 'nominal data' used in some textbooks.

**Interval data** has all the characteristics of ordinal data.

- It involves an unit of measurement that could place responses or individuals to be placed at equally spaced intervals.
- It has a starting point and a terminating point, e.g. test scores 0 to 100.
In your Text (p.170), not all the statistical methods mentioned are explained. Three
correlational approaches are mentioned and the calculations are shown. The
calculations are methodical ways to show how the coefficients are arrived. In this
module, you are not expected to do the calculations as a test of knowledge. The
important thing is to know what the statistic is about and how it is interpreted. In this
module, the Spearman and the Pearson product-moment are given attention to get
a feel of the procedures.

The Spearman calculation involves rankings (ordinal scale). As shown in Table 6.7, the
data can be displayed in a table and the figures are then used in the formula:

\[ \rho = 1 - \frac{6 \sum D^2}{N(N^2 - 1)} \]

where: \( \rho \) = Spearman rho correlation coefficient
\( D \) = the differences between the ranks
\( N \) = the number of cases

Following the calculations the coefficient arrived at is .88 which shows a reasonably
strong relationship between two variables.

For the calculation of the Pearson Product-Moment Correlation, the worked example
used figures presented in Table 6.9. The coefficient obtained, .93, is high and thus show
a strong relationship between two ways of presenting questionnaire results.

Level of Significance

In using statistics, data interpretation often assumes the beginning step of establishing a
level of significance. This level of significance relates to the determination of the chance
factor. The more we wish to minimize the effect of chance, the more stringent will be our
choice of a level of significance (the criterion). If we set the level of significance at 0.01,
it would mean that only 1 percent is accorded to chance. If the chance factor is raised to
5 per cent, then the level of significance is 0.05.
Thus in dealing with the meaning of the coefficient, (as stated in the Text (p. 189)), a coefficient must be statistically significant if the result is to have objective meaning. You can compare two significant coefficients, for example, .93 and .60. As such one can say that the .93 coefficient is higher than the .60. However, it does not say that .93 is more significant than .60 as both are significant according to a predetermined level, e.g. .05 or .01.

3.6 Using the t-test

In the use of the t-test statistic, a t-value is obtained after feeding the data into a formula. This t-value obtained (as shown on p. 205-206 of the Text) also needs interpretation in relation to a level of significance. The t-value is useful to show differences between groups. For example in the earlier case of using class readers to teach reading comprehension, you can use the test scores and feed the information into the formula. If a t-value is found to be significant it would mean that any increase in reading comprehension scores after using the class readers is not due to chance. As such, the researcher may then conclude that using class readers can lead to a significant improvement in reading comprehension ability.

Exercise 5

Investigators wish to study the question: "Do UPM students learn English better through the communicative method compared to the task-based method?"

A. What is the null hypothesis for this question?

B. If a t-test is used to investigate the gain in scores for the communicative method and the task-based method, what kind of information can be obtained?
C. If a strong correlation of .97 is found between the communicative method and the task-based method (significant at .01), what can be a possible interpretation?

D. If one investigator uses a .05 level of significance in investigating this question and another uses a .001 level of significance, which would be more likely to have a greater chance of error making?

E. When would I use the Spearman correlation in the investigation?

Answers for Exercise 5:

A. What is the null hypothesis for this question?

There is no difference in the level of performance between students who are exposed to the communicative method and the task-based method.

B. If a t-test is used to investigate the gain in scores for the communicative method and the task-based method, what kind of information can be obtained?

Whether the gain in score is due to chance or not.

C. If a strong correlation of .97 is found between the communicative method and the task-based method (significant at .01), what can be a possible interpretation?

The two methods are very similar in producing outcomes. Either method will work for the learning of the language.

D. If one investigator uses a .05 level of significance in investigating this question and another uses a .001 level of significance, which would be more likely to have a greater chance of error making?

Confidence level at 95% compared to 99.999%, the second level is more stringent and therefore gives less chance of error.

E. When would I use the Spearman correlation in the investigation?

When data are obtained through the ordinal scale and are ranked.
Conclusion

In doing quantitative research, there is a choice of designs which depend on the nature of the research. Different analyses can be used to produce results for discussion which will lead to the conclusions of the research. As we observed, different types of data analysis are used to suit the different types of research problems. When the research is descriptive, the researchers will use the different types of descriptive statistics such as frequencies, measures of central tendencies, and if more complex issues such as relationships are explored, then correlation methods can be used. Obtaining significant correlations will show whether the relationship between the variables is meaningful according to a set level of significance. However, the statistics will not indicate whether one variable caused the other; these kinds of problems call for other experimental research designs so that these answers can be obtained. These designs are beyond the scope of an introductory course of this nature.
UNIT 8
RESEARCH PROPOSAL

Introduction to the Unit

Now that you have gone through the research process, the final unit is to translate
the knowledge gained into the writing of a proposal to obtain approval for the project.
To do so you have to consolidate information needed for the writing of basically the
first three chapters of a research paper (refer to Unit on research design). There is
no single format for research proposals but there are institutional requirements that
you may be required to follow. It helps to know the format early as it will make your
job easier when you write the project paper. This unit can be used as a step by step
guide to the writing of a proposal.

The topics in this unit are:

1. Key components of a research proposal

2. Writing Pointers

Objectives of the Unit

From the selected topics, the following are the unit objectives:

1. To provide an outline for the writing of a research proposal

2. To enable students to use some writing pointers in the writing of a research
   proposals
TOPIC 1: KEY COMPONENTS OF A RESEARCH PROPOSAL

The key components which must be included in the research proposal are as follows:

- A description of the research problem.
- An argument as to why that problem is important.
- A review of selected literature relevant to the research problem.
- A description of how the research findings will be used and/or disseminated.
- A description of the proposed research methodology.

Each of the components are further detailed to guide the researcher in finalising the proposal.

1.1 DESCRIBING A RESEARCH PROBLEM

Before your proposal can make sense to a reader, he or she must understand clearly what the proposed research will be about. Therefore, you would do well to begin this section with a clear and simple formulation of your research question. Read the following examples:

This research project explores the views of parents to the use of English to teach Maths and Science in school. In particular the research focuses on parents in terms of educational level, income, geographical location, level of schooling of children, and mother tongue.

Add more information to this section by asking your self:

- What kind of background information do I need to provide?
- Where does my research question come from?
- Are there debates or controversies in the literature?
- What are my central concepts in relation to the topic?
Here is a very simple example:

This research project explores the views of parents to the use of English to teach Maths and Science in school. In particular the research focuses on parents in terms of educational level, income, geographical location, level of schooling of children, and mother tongue. Recent reports in the media detailing the debate have created public interest and concern, and there are important implications for language policy decisions.

1.2 WHY THE RESEARCH IS IMPORTANT

This section, often referred to as the “rationale” is crucial, because it is one place in which the researcher tries to convince her/his supervisor/external examiner that the research is worth doing. You can do this by describing how the results may be used.

Think about how your research:

- may resolve theoretical questions in your area
- may develop better theoretical models in your area
- may influence public policy
- may change the way people do their jobs in a particular field, or may change the way people live.

Are there other contributions your research will make? If so, describe them in detail.

Look at the following example:

The proposed research hopes to achieve the following:

- Add evidence to show the voice of a major stakeholder
- Give interested parties impact indicators on public policy
- Information on the extent to which selected variables are related to parental views
1.3 RESEARCH QUESTION/S

The research questions are clearly stated. Do not have too many as it may not be practical. Formulate your questions according to the guidelines given in Unit 3.

Example:

*The general objective of this research is to examine parental reactions to the education policy in using English to teach Maths and Science. Specifically it seeks to determine the extent of relationships of selected variables related to their reactions:*

My research question is:

To what extent does educational level, income, geographical location, level of schooling of children, and mother tongue of parents relate to their views about the policy?

Details regarding each of the variables should be added to produce a convincing argument as to the usefulness of the research. In other words, some definitions of terms are needed. From the question above you will define *educational level, income, geographical location, level of schooling of children, and mother tongue.*

1.4 LITERATURE REVIEW

Writing the literature review is a challenging task. Since a long proposal is not required, the review of what constitute relevant literature has to be carefully selected. You may add in the following to help you give an overview of the research issue.

- Three articles on related research
- A concept related summary
- A brief write up of the broad field that the research falls into
Example:
This study will draw on some related work done in the field of language policy and planning. The concept of policy planning has been acknowledged as having great importance in determining educational approaches used for educating a population.

**Conceptual Framework**
This framework can be located in this section. If appropriate a diagram can be drawn to show the totality of the important factors that work together to answer your research question.

Example:
The framework used is that proposed by ...... with regard to corpus and status planning. Corpus planning refers to ...... while status planning refers to .....  

1.5 RESEARCH METHODOLOGY

Under this section the proposal could include information about the following:

- **Research Design**
  It follows a survey design. A survey design basically involves the study of factors that influence a society’s actions and thoughts. The approach used can be both open ended and close ended. This means that information can be tapped by inviting open comments for participants or the responses can be more structured as elicited by a questionnaire. Less structured methods can be observations and making field notes and going through document analysis.

- **Sampling**
  Empirical research almost always depends upon a sample which is assumed to accurately represent a population. Therefore, you can refer to the techniques by which a sample can be chosen as explained in Unit 3. This information is vital if the study is to be convincing.
• Empirical research methodology measurement instruments
  When a particular measurement instrument is used, it is often important to explain how the instrument is developed. If there are limitations, state them clearly. If the instrument is adopted, mention the source and permission to use. If it is adapted, what are the changes? How are the questions framed? What are the principles involved?

• Data collection procedures
  Detailed data collection procedures should also be included. This shows careful planning and also allows other researchers to replicate your method if required.

• Data analysis
  Refer to the research question to see how answers can be derived. For questionnaire survey, some elementary statistics would be necessary. Give as much details as you can.

• Time frames
  Inexperienced researchers tend to underestimate the amount of time that the various stages of research will take. Be generous when working out time frames and check them with a more experienced researcher. It is useful to show the information in a table. The information need not be too detailed.

Example:

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<tr>
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</tr>
<tr>
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</tr>
<tr>
<td>April</td>
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</tr>
<tr>
<td>May</td>
<td>Writing the Report</td>
</tr>
</tbody>
</table>
2.1 A Sample Proposal

This is a sample proposal written by an UPM student (C. W. Lim) for her undergraduate term paper. Read the sample proposal and answer the questions that follow.

Example:

THE INTERPRETATION OF TRAFFIC SIGNS AND MEANING BY MALAYSIAN CHINESE PRIMARY STUDENTS

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1. Background of the Study

Human beings have been using signs (e.g. images and symbols) to create messages and meaning since the beginning of human history. These signs can be found on stone surfaces, animal leathers, paper, or the Internet and they can be used to communicate with each other, or to leave man's legends and stories. Words, images, sounds, odours, flavours, acts or objects have no intrinsic meaning, and they become signs only when we invest them with meaning (Peirce, 1931, in Chandler). The study of signs is known as Semiotics. In other words, signs are an advocacy form of communication. Signs create particular effects and enforce the meaning of expression. Every single thing or event gives a different message depending on the situation and person involved. For instance, the colour “red” implies different meaning; red could mean ‘stop’ in traffic light language or stand for blood in medicine. Hence, the understanding of signs is necessary and crucial as these images are shared all round the world.

Nearly everything we see in our daily lives is in conveyed in visual signs. Traffic signs are one of the most essential visual signs in our lives today. “A picture can speak a thousand words”, thus images and texts elements in traffic signs are encoded with meanings, and we can decode the messages. Also, we build associations with concepts presented to us within traffic signs.

In social life, codes and signs communicate social meanings through the complexity of interpretative understanding (Kanning, 1965). According to the Sapir-Whorf hypothesis, people’s perception of reality, and the way they see the world are determined by their ideology, emotion and the social-cultural values. Therefore, people do have different interpretations for signs of what they see or hear. And yet, we construct meaning according to our knowledge of the world and our experience. Consequently, the comprehension towards signs is particularly important in the context of road signs as they relate to safety. To help children become aware of road safety, some companies in Malaysia take part in social responsibility programmes which are centred on road safety. The social responsibility programmes are strongly supported and are often implemented with cooperation from the Ministry of Education, the Ministry of Transport and the Malaysia Road Safety Council.

In general, young children are brought up in an environment where visual language plays an important part in their lives. Young students’ skills at interpreting visual language help them to explore, learn and understand their world generally. In bringing up children to become a generation of more disciplined and tolerant road users, the meaning behind any road sign must be learned and understood. Therefore, this study is carried out on how children first of all interpret a sign; and how they then draw on cultural or personal experience to understand a sign.

1.2 Statement of the Problem

Basic safety principles and road signs which are relevant to children are important to ensure they are free from road danger. Unclear signs in an environment might hinder children’s comprehension of the message. Children’s cognitive
development is crucial for the ability to interpret signs accurately. Hence, children have to learn and practice good road sense in response to signs around them to enhance their knowledge about road safety.

This research sets up to examine the interpretation of meaning of traffic signs from children's point of view. It also evaluates the connection between traffic signs and meaning. This study will be useful to understand children’s perception towards the use of road signs to enhance children’s sense of road safety.

1.3 Objectives of the Study
(a) To investigate the comprehension of traffic signs by primary school children.

(b) To study the relationship between signs and meanings.

1.4 Research Questions
(a) What are the teachers' perceptions of the importance and familiarity of the traffic signs for primary school children?
(b) How do primary children react to traffic signs?
(c) What is the semiotic meaning of the message elements in road signs?

1.5 Significance of the Study
This study attempts to find out how children understand traffic signs and how they interpret road signs' meaning by determining the connection between signs and connotation within traffic signs. This study is intended to figure out children's perception towards road signs usage to enhance children’s sense of road safety.

1.6 Limitations
This study confines itself to examine only traffic signs that are common and simple in daily life due to the level of understanding of children. It attempts to look at only a few different types of road signs due to time constraints. In this study, the choice of traffic signs may not truly representative of sampling of available signs in society. The number of road signs selected may be too few to achieve an accurate representation of the road signs used to claim comprehensiveness in road sign usage. The population will be focused only on Chinese primary students in a particular school in an area.
2.0 REVIEW OF RELATED LITERATURE

2.1 Language and Thought

Edward Sapir (1884-1939) and his student Benjamin Lee Whorf (1897-1941) were interested in the relationship between language, thought, and culture, and developed the Sapir-Whorf Hypothesis. The study has two parts: the theory of linguistic relativity, and the theory of linguistic determinism. The theory of linguistic relativity states that different cultures interpret the world in different ways. On the other hand, the theory of linguistic determinism states that language we use affects how we think. The Sapir Whorf Hypothesis presents an outlook of reality being expressed in language and thus forms our thoughts.

Additionally, language is sometimes referred to as a semiotic system (Carter et al., 2001: 3). Different cultures have different semiotic systems and we have to go beyond language to look at all aspects of society as systems of signs.

2.2 Semiotics

Semiotics is the study of signs; the science that studies the life of signs within a society; the study of how meaning is constructed and understood by people.

Ferdinand De Saussure (1983), the founder of semiology refers language as 'the most important' of all of the signs systems. According to Saussure, signs are completely arbitrary in nature. He elaborated on the binary relationship by proposing a dualistic notion of sign. To form a meaning-imbued "sign"; the signifier (the representation of something) as the expression, and the signified (the thing itself) as content. The relationship between a signifier and its signified is relatively arbitrary. Therefore, the connection that exists between the signifier and signified has to be understood within a given set of rules (codes) that guide the connection made.

Charles Sanders Peirce recognized as the founder of modern semiotics, was interested in how we make sense of the world around us. Peirce established a triangular model, Sapir-Whorf Hypothesis, which explains how the thoughts in human minds can be expressed in terms of the world outside of their minds. The model contains three basic entities: the sign or representamen (something which is perceived, but which stands for something else), the object (the "something else" in the world to which the sign refers) and the concept or interpretant (the thoughts or images that are brought to mind by the perception of the sign). For instance, the traffic light sign 'stop' would consist of: a red light facing traffic at an intersection (the representamen); vehicles halting (the objects) and the idea that a red light indicates that vehicles must stop (the interpretant) (Chandler, 2002: 33). Interestingly, "the representamen is similar in meaning to the signifier; the interpretant is similar in meaning to the signified. However, the object doesn't feature directly in the Saussurean model" (Silverman, 1983, as cited in Cordeiro and Filipe, 2004).

Furthermore, Peirce draws a distinction between iconic, indexical and symbolic representations. An icon is a sign that denotes its object. Iconic is a direct representation of something (Carter et al, 2001: 333). It shares a character or an aspect with it, which allows it to be interpreted as a sign even if the object does not exist. It signifies essentially on the basis of its "ground". For example, a road sign
showing the silhouette of a car is highly iconic because the silhouette looks like a car.

A symbol means what it means. “Symbolic sign is not a picture of what is being referred to referent, but a picture of something that we associate with the referent” (Carter et al., 2001: 4). There is no natural relationship between symbols and their meanings. The traffic sign with reference to the motorbike and car can have iconic elements, but it also has symbolic elements: a white background with a red annulus around it signifies “something is forbidden”.

On the other hand, an index is a sign that denotes its objects by virtue of an existential connection that it has with them. The relation or direct link between the sign and the object is crucial for indexical meaning. In a sense, indices lie between icons and symbols. The majority of traffic signs are indexical as they represent information which relates to a location; for instance, a ‘slippery road surface’ sign placed on a road which is prone to danger (when road is wet).

2.3 Pragmatics

According to Paltridge (2001), pragmatics is concerned with the interpretation of language based on knowledge of the real world; “pragmatics ought to focus on the functions of language in actual context or use” (Verschueren, 1999:10). The term ‘pragmatics’ is based on the ‘Foundation of the Theory of Signs’ by Charles W. Morris (1938) whose approach to semiotics, is based on the work of Locke and Pierce. Charles Morris divides semiotics into three branches; syntactics, semantics and pragmatics. According to Morris, pragmatics is the study of the relationship between signs and their interpreters. It outlines a unified and consistent theory of signs. Broadly speaking, pragmatics deals with inferential meaning. “Pragmatics is not about Meaning; it is about making meaning, about meaning potential, showing how people negotiate meaning in interaction” (Thomas, 1995: 184).

2.4 Children’s Cognition

Cognition is a process that involves thinking and mental activity. The thought system in the mind of a child develops input stimuli (e.g. visual, auditory, and tactile) from the experience of the objects, situation, or event in the environment, and the experience of the feelings, emotions or desires are essential in constructing thoughts. Acquisition of traffic sign knowledge requires practice and skill in rules and consequences by learning traffic signs clues. The clues may be auditory, visual, kinesthetic, or a combination. Auditory clues include verbal instruction, car horn sounds etc; visual clues take in the signboards or police’s hand gestures; kinesthetic clues comprising crossing the road, etc.

From a developmental perspective, children’s responses and understanding towards meaning are derived from sensory motor interaction with surroundings. Clues help kids anticipate the rules in order to figure out what to do. When kids pick up clues they need to have the right direction about figuring out the road signs that fit the place. By watching people’s behaviours around them, children are able to learn clues. When they have to deal with similar situations, they are able to think about what happened in an earlier experience.
3.0 RESEARCH METHODOLOGY

3.1 Research Design

The study methodology aims to find out about children’s knowledge, understanding and perception of traffic signs. Traffic signs pictorials are used to obtain responses to semiotic function in traffic signs. Samples of traffic signs are collected by referring to the Malaysian road rules’ guide book. The primary categorisation of the signs in the survey was based on the idea of signs that are basic in daily life of children. The examples are categorized into warning, regulatory, and informative signs in order to evaluate the message elements functioning in them. The survey was purposive in finding out primary school children’s reaction to road signs, and functions of the message elements in terms of semiotic meaning. In order to obtain valid data results, the questionnaires used are bilingual (English and Mandarin) as a strategy to ensure those primary Chinese students are able to comprehend the survey questions well.

3.2 Sampling and Location

To investigate the interpretation of traffic signs and meanings by primary students, a survey is to be carried out at a selected primary Chinese school in Kajang. The target is 100 school students. The students are Chinese and of both genders from standard 4 to standard 6 to represent the voice among the primary school children. Children of these age groups are chosen because they have the exposure to sign roads. They are more able to comprehend and answer the questionnaires.

3.3 Instrument

A questionnaire is a quantitative approach. The basic and most frequently used traffic signs in the daily lives of children in the Malaysian context are selected for the survey. Questionnaires are carried out with the use of selected types of traffic signs, which are warning, regulatory, and informative signs based on Malaysia’s Road Rules Manual.

Two set of questionnaires are constructed. The first survey has 30 multi-choice questions of pictorial traffic signs which will be answered by primary school teachers. Primary school teachers are chosen as they are likely to be aware of the children’s traffic signs learning. The survey comprises two segments: teachers’ opinion about the relative importance of traffic signs to primary school children, and their perceiving on familiarity of those signs for students.

For the first questionnaire, 20 most basic and essential traffic signs are selected to form the questions. For the 100 students, the questionnaire consists of 20 multi-choice questions based on pictorial cues of traffic signs. The students are required to choose their own answers in response to the pictorial signs. The purpose was to investigate children’s perception towards road signs.

Besides that, an interview as a qualitative approach will also be used. 10 participants who answered the questionnaires were interviewed by asking them to...
describe the picture, answer questions on what the picture is about, and how the picture makes them think and feel. These signs were shown to the interviewees through the Microsoft PowerPoint program. The interview focused on the children's attention when they are shown the signs, and how they respond to the visual features used to give those clues.

3.4 Data Collection

Permission is first obtained from the school for the research to be carried out. A set of 30 questionnaires is distributed to the primary teachers in school to obtain background information about perception to road safety. After the data is obtained and analyzed, the most essential basic traffic signs are selected to form the second questionnaire. A set of 100 questionnaires are distributed to the participants in class. Finally, out of the 100 participants, 10 participants are selected for interview. The interview questions use the exact pictorial signs used in the questionnaire. The purpose of the interview is to acquire more information on children's thinking towards those basic traffic signs.

3.5 Data Analysis

Three parts of data analysis were carried out. Firstly, the analysis of the teachers' opinion towards the importance and familiarity of traffic signs for children, to aid the construction of the questionnaire to test children's perceptions. Secondly, the questionnaires are analyzed question by question according to students' responses to gather the pattern of responses towards traffic signs. The findings are obtained in percentages and presented visually to give a clear view of findings.

Thirdly, a detailed analysis of signs used in traffic signs is then conducted to identify, recognize and analyze those traffic signs in term of semiotic functions by using Pierce's definitions; iconic, symbolic and indexical representations, and how the messages was conveyed in term of colours, shapes, etc. Interviewees' responses towards those selected traffic signs are discussed in the final part. The content of the responses were analyzed and used as supporting evidence to the second part of the survey.

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http://www.miraikan.jst.go.jp/e/sp/aspac/pdf/5_outreach%26programs_Rauf.pdf

http://eng.upm.edu.my/web/srd/


http://www.dft.gov.uk/pqr/roads/tss/research/increasingunderstandingoftra4173

Exercise 2.1

1. What is the research about?
2. Is the research quantitative or qualitative?
3. What are the instruments used in the research?
4. What is the conceptual framework used?
5. What is the sample used in the study?
6. What is the method of analysis?
Answers to Exercise 2.1
1. What is the research about?
   The understanding of road signs by primary school children

2. Is the research quantitative or qualitative?
   Both

3. What are the instruments used in the research?
   Survey questionnaire and interview

4. What is the conceptual framework used?
   Sapir-Whorf Hypothesis, and the Semiotic Model

5. What is the sample used in the study?
   100 upper primary students

6. What is the method of analysis?
   Descriptive statistics and content analysis

Topic 2: WRITING POINTERS

It is not true that anybody who can write is able to write a research proposal. You should follow a structure and practice good writing skills. Some tips to help you in your writing include:

- Give thought to the structure your work will follow in advance.
- Know what you want to say even before trying to write it.
- Sentence structures should be clear. Each paragraph should contain one idea only.
- There must be links between sentences and between paragraphs. Each sentence must follow logically from the one before.
- While writing, always keep in mind your reader's needs. Often the reader needs signposts to follow your ideas. This means providing a "verbal map" so that your reader knows what to expect.
• Consult the APA Style Manual to follow the conventions used in citation. You may refer to the following websites:
  • The OWL at Purdue.
    http://owl.english.purdue.edu/owl/resource/560/01/
  • Online! a reference guide to using internet sources
    http://www.bedfordstmartins.com/online/index.html

2.1 COMMENTS ON STRUCTURE AND STYLE

DO:

• produce a professional looking proposal.

  The final draft that you hand up should have undergone at least three drafts. Use headings and subheadings to organise your ideas. Go through the draft with a spell and grammar check on your computer.

• be interesting
• be informative
• write in a way that is easy to read
• include a contents page
• use clear headings and sub-heading
• be concise and precise
• use simple language wherever possible
• construct clear arguments
• check your spelling and grammar
• reference your work fully using an acceptable format
DON'T:

- use words when you are not absolutely certain of their meaning
- use difficult words to impress your reader
- use overly simplistic language
- repeat yourself
- Digress

**Conclusion**

Having gone through the various steps you are now ready to submit the proposal. However, before you do so, make sure you have completed each of the following steps:

1. Proof-read your work carefully.
2. Ask a friend or relative to read your proposal.
3. Ask an experienced researcher or your supervisor to read your proposal to obtain relevant feedback.
4. Submit on time.

(Adapted from [www.nrf.ac.za/yenza/research/proposal.htm](http://www.nrf.ac.za/yenza/research/proposal.htm))

An appendix is attached for more reading on revision and editing.