

PREFACE

In the curricular structure introduced by this University for students of Post-Graduate degree programme, the opportunity to pursue Post-Graduate course in Subjects introduced by this University is equally available to all learners. Instead of being guided by any presumption about ability level, it would perhaps stand to reason if receptivity of a learner is judged in the course of the learning process. That would be entirely in keeping with the objectives of open education which does not believe in artificial differentiation.

Keeping this in view, study materials of the Post-Graduate level in different subjects are being prepared on the basis of a well laid-out syllabus. The course structure combines the best elements in the approved syllabi of Central and State Universities in respective subjects. It has been so designed as to be upgradable with the addition of new information as well as results of fresh thinking and analysis.

The accepted methodology of distance education has been followed in the preparation of these study materials. Co-operation in every form of experienced scholars is indispensable for a work of this kind. We, therefore, owe an enormous debt of gratitude to everyone whose tireless efforts went into the writing, editing and devising of a proper lay-out of the materials. Practically speaking, their role amounts to an involvement in invisible teaching. For, whoever makes use of these study materials would virtually derive the benefit of learning under their collective care without each being seen by the other.

The more a learner would seriously pursue these study materials the easier it will be for him or her to reach out to larger horizons of a subject. Care has also been taken to make the language lucid and presentation attractive so that it may be rated as quality self-learning materials. If anything remains still obscure or difficult to follow, arrangements are there to come to terms with them through the counselling sessions regularly available at the network of study centres set up by the University.

Needless to add, a great part of these efforts is still experimental—in fact, pioneering in certain areas. Naturally, there is every possibility of some lapse or deficiency here and there. However, these do admit of rectification and further improvement in due course. On the whole, therefore, these study materials are expected to evoke wider appreciation the more they receive serious attention of all concerned.

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First Reprint : July, 2017

**Post-Graduate : Diploma in English Language Teaching
[PGELT] [MAELT]**

Paper - 8

Research Methodology and Academic Study Skills

Modules – 1-4

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Acknowledgement

The write up of this paper is based on resource materials collected by Prof. Arpita Banerjee.

Notification

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PAPER – VIII

Module 1

Unit 1 □ Research	7-13
Unit 2 □ Review of Literature	14-25
Unit 3 □ Plagiarism	26-33
Unit 4 □ A Paradigm for Second Language Research	34-48

Module 2

Unit 1 □ The Preparatory Stages of Research	49-57
Unit 2 □ The Stages of Research	58-67
Unit 3 □ Data Collection and Primary Data	68-76
Unit 4 □ Questionnaire Design and Data Presentation	77-94

Module 3

Unit 1 □ Report Writing and Presentation	95-106
Unit 2 □ Contextualization of Research	107-116
Unit 3 □ Components of Research	117-131
Unit 4 □ Documentation : Preparing the List of Works Cited	132-152

Module 4

Unit 1 □ Research Paper : A Form of Communication	153-162
Unit 2 □ Workshop – Writing a Research Proposal	
Unit 3 □ Writing a Thesis	163-182
Unit 4 □ Workshop – Presenting a Research Proposal	

Module -1 — Unit 1 □ Research

Structure

- 1.1 Learning Objectives**
- 1.2 Introduction**
- 1.3 What is Research?**
- 1.4 Research and Second Language**
- 1.5 Research Types**
- 1.6 Summary**
- 1.7 Review Questions**
- 1.8 Books Recommended**

1.1 □ Learning Objectives

The purpose of this unit is to give you an idea of what research means and how research can be of practical use. Having worked through this unit, you should be able to:

- Define research
- Become aware of basic concepts and different kinds of research
- Understand the way research can help in developing curriculum materials

1.2 □ Introduction

Research is the art of discovering information. Research at its most basic is simply a way to gain knowledge that is useful to us. Research at its richest provides a way of experiencing the world and ourselves in a different way. Research projects assigned by teachers are often designed to help us think in a creative manner. We are given the task to investigate a particular person, a period of history, a form of literature, or a scientific discovery. We are asked to think about our research in terms of what we are learning in class and what we can add to the knowledge we already possess. However, every successful research project should follow some elemental guidelines.

1.3 □ What is Research ?

Research is the formalization of natural processes we all carry out from birth in dealing with the environment. It involves curiosity about some phenomenon and the posing of testable questions about relationships among observed phenomena.

Research is different from common sense because it is a planned systematic investigation. Its theories are testable and falsifiable and it attempts to study phenomena through careful description and identification. Sometimes the phenomena are controlled and manipulated in order to study them in isolation.

1. Define research in two different ways.

1.4 □ Research and Second Language

An important dilemma which research deals with is how we know when we have found the answer to a question. Research findings in second language studies and bilingualism are categorized according to four types of knowledge.

Type 1: Knowledge as belief

When we know something on the basis of belief, it may mean we want to believe something to be true but have never submitted it to an empirical test. The researches on bilingualism conclude that more often than not people who speak a second language are more creative and flexible at problem-solving than monolinguals.

Consumers of research must remember to ask for the source of a researcher's statements. Sometimes, the beliefs of the researcher are presented as the research when, they represent the musing of the researcher rather than facts based on actual research. If beliefs are presented as research, then the research should be treated with circumspection and seriously questioned. Conclusions which are based on belief should be regarded as possible hypotheses for research rather than as established knowledge about second language.

2. What can be the role of belief in a research undertaking?
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Type 2: Knowledge as authority

This form of knowledge is similar to Type 1 because it comes from a source which is accepted at face value. This source may be another scientist who has achieved a reputation and whose opinions about phenomena in his field of research are accepted as proven facts or as educated judgements from a respected researcher. Unfortunately, the source of this kind of knowledge is often forgotten and it achieves the same status of knowledge arrived at through careful research.

A common example of knowledge that derives from authority is the status achieved by popular language teaching methods. The Silent Way, Suggestopedia and Community Language Learning are methods accepted on the basis of authority rather than from research. That is, the status here is not accepted after controlled testing of the efficacy of the methods.

3. Which language teaching methods are accepted on the basis of authority and not from research findings?

Type 3: A priori knowledge

We arrive at this type of knowledge by starting with a set of axioms about some phenomenon and then developing our knowledge of it by using reason and logic working within the system defined by the axioms. Type 3 knowledge resembles belief. This form of knowledge is usually founded on some previous systematic empirical work of observation.

In second language research, we often begin with a priori knowledge. For example, we might begin by accepting the idea that there are universals of language acquisition and then investigate to see how extensive a particular universal might be. A linguistic universal might be that all languages conform to a set of rules for forming relative clause sentences. We then hypothesize that this set predicted the order by which second language learners acquired the rules for forming relative clauses in the second language. In order to test this prediction, we would have to carry out an experiment. In this example we began with Type 3 knowledge, which led to Type 4 knowledge.

4. What can be a priori knowledge in Second Language Acquisition?
5. What is a linguistic universal?

Type 4: Empirical knowledge

In this type, we arrive at knowing something through the processes of observation and/

or experimentation. Empirical knowledge is obtained by interacting with the real world, observing phenomena, and drawing conclusions from experience. In this method of arriving at knowing something we might begin with one of the types of knowledge described above but appeal to some process which will allow us to examine the question by externalizing it. Externalizing a research question allows us to control the effects of various extraneous factors, to propose alternative methods of investigation, and to submit the results to public inspection.

Empirical knowledge about second language can be obtained through careful observation and description. It can also be obtained through experimentation in which a single factor may be isolated for study.

6. What is empirical knowledge?

7. How is empirical knowledge about a second language obtained?

Research in second language will bring the researcher into contact with all the four kinds of knowledge discussed above. Knowledge based on belief or authority is sometimes given the status of empirical knowledge. When reading second language research, one should be aware of the basis for conclusions or claims made by the writer. The researcher will have recourse to Type 3 knowledge as a stimulus for research or may begin a study because of a commonly held, but never validated view. From Type 1 or Type 2 knowledge, the researcher will have recourse to what takes place in second language acquisition. Not all conclusions are necessarily reached on the basis of the same kind of knowledge. The conclusions of a study might be based partially on belief (Type 1) and partially on a description of a language phenomenon or the results of an experiment (Type 3 or 4).

1.5 □ Research types

Research in second language can be divided into three types: Basic or Theoretical research, Applied research, and Practical research. While each of these types of research may be carried on independently of the others, there is often an interaction between these types, with findings in one category influencing research in the others. Second language research covers a wide variety of possible topics and questions. These are:

- i. Construction of theoretical models,
- ii. Explanation of second language acquisition,
- iii. Investigations of the applications of theoretical constructs in Linguistics,

- iv. Actual language acquisition contexts,
- v. Practical utilization of theoretical and applied findings in language teaching methodologies, and
- vi. Classroom language learning.

Each category of research often contributes to revision of the content and structure of the other categories. For example, findings in applied research may lead to a revision of theories in basic research. Thus, the relationship between basic, applied and practical research is not unidirectional.

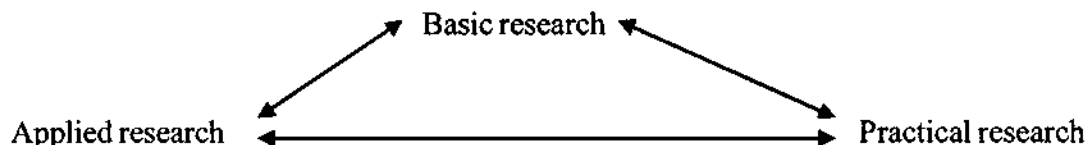


Figure 1.1. : Kinds of second language research and their relationship.

The borderlines between these categories are not always clear cut, but the division is useful when considering the field of language. Consider the following example: a linguist (A) holds the theoretical position that different languages share universal features (Type 3 knowledge). He is interested in understanding what the languages of the world have in common in terms of the rules necessary to form complement clause sentences. He examines different languages and concludes (Type 4 knowledge) that all the languages he has investigated have grammatical devices for forming their complement clauses. Now he would like to see whether the rules for forming complement clauses are same for disparate languages such as Hindi, English and Kannada. How are they similar and how are they different? What abstract principles can be arrived at which will describe all the rules necessary to form complement clauses for any of the world's languages, and yet also contain within these principles some mechanism for showing how these languages are different in some way?

Now let us consider another linguist (B) who is interested in finding out whether the description provided by linguist (A) has any validity in predicting the order in which rules of complementation in English are acquired by a speaker of another language such as Hindi (Type 4 method of knowing). Do the rules which are described conform to what people actually do when they learn a language? Do the rules predict an order of acquisition or the difficulty experienced by learners from different first languages? Does the description of linguist (A) predict the errors that will be made by language learners in research conducted by linguist (B)?

Finally, let us consider researcher (C). Researcher (C) is not a linguist but is involved in language education, specifically in using linguistic description as the basis for developing better and more effective textbook materials for teaching English as a second or foreign language. Linguistics is not necessarily the only field that a textbook writer would consult. He would also take into consideration research in learning theory, pragmatics and other relevant fields such as bilingualism, language acquisition etc.

Researcher (C) may consult the work of linguist (A) to see what such descriptions consist of, devoid of any real world context, and then consult linguist (B) to see to what extent the work of linguist (A) reflects what actual learners do when learning another language, particularly when learning how to form complement clauses in this language. (C) may then carry out a study in which materials based on (B) are compared with other materials to see if the insights provided by basic and applied research provide a superior foundation for the development of second language materials.

The above describes three stages and three kinds of research that may be conducted in second language. Linguist (A) dealt with basic or theoretical research and was concerned with developing an abstract linguistic description within a particular theory of language knowledge. Linguist (B) was not concerned with developing an independent theory of relative clauses but rather with applying the work of (A) to a specific problem — the process by which learners acquire the knowledge described by (A), when they acquire that knowledge in a second language context. These three researches thus are of the following kinds :

Type	Example
1. Basic	Universals of relative clauses
2. Applied	Order of acquisition
3. Practical	Materials development

Finally, (C) was interested in the practical aspects of relative clauses. It will probably be necessary for him to develop experimental curriculum materials which will then be tried out in a classroom context and evaluated with materials based on a different linguistic format. The example above is an idealization of the division of types of research, because practical research can have theoretical implications. Ideally, applied and practical research should influence the construction and revision of theories and hypotheses developed in basic research. The relationship between types of research should be bidirectional.

This division helps us to understand the limitations of research. Not all research is meant to be applied or have practical uses. Sometimes practical applications for basic

research are premature if theories are not tested under the conditions in which they will be applied. This is a problem of external validity.

1.6 □ Summary

In this unit we have learnt about scientific research, types of knowledge found in second language research and also about different kinds of research. Research concerns obtaining knowledge. Knowledge can come from four different sources: belief, authority, a priori hypotheses or theories and empirical evidence. Scientific research is concerned with discovering knowledge from the last two sources. Basic or theoretical, applied and practical, are three types of research.

We hope this unit will help you take informed decisions to develop experimental curriculum materials.

1.7 □ Review Questions

1. Define scientific research.
2. How can you differentiate research and common sense?
3. What are the objectives of second language research?
4. What is a priori knowledge?
5. Why knowledge as authority is similar to knowledge as belief?
6. From where can scientific research discover knowledge?
7. Why is the relationship between different types of research bidirectional?
8. What are the limitations of research?
9. What is Type 4 knowledge? How is it obtained?
10. What are the conclusions from the types of research?

1.8 □ Books Recommended

1. Cook, Vivian. 2001, *Second Language Learning and Language Teaching*. London: Arnold Publishers.
2. Seliger, H. and Shohamy, E. 1989, *Second Language Research Methods*. Oxford: Oxford University Press.
3. *The Language Curriculum* Vol 2. 1995, 2000, Teacher as a researcher. CIEFL.

Module -1 — Unit 2 □ Review of Literature

Structure

2.0. Objectives

2.1. The importance of working with Literature

2.2. Types of Literature

2.3. Finding Literature

2.4. Honing your search skills

2.5. The purpose of Literature review

2.6. Tips for writing Literature review

2.7. Summary

2.8. Review Questions

2.9. Bibliography

2.0 □ Objective

The objectives of this unit are to enable you to —

- be aware of the importance of working with Literature;
- find Literature;
- manage Literature;
- use Literature;
- have a clear idea of the formal 'Literature Review'.

2.1 □ The importance of working with Literature

'What should I be reading and what do I do with it all?'

Research may be done alone — but it is never done in isolation. The production of new knowledge is fundamentally dependent on past knowledge. Knowledge builds, and it is

virtually impossible for researchers to add to a body of literature if they are not conversant with it. That is, working with literature is an essential part of the research process. It inspires, informs, educates and enlightens. It generates ideas, helps form significant questions, and is instrumental in the process of research design. It is also central to the process of writing-up; a clear rationale supported by literature is essential, while a well-constructed literature review is an important criterion in establishing researcher credibility.

Working with literature is often seen as an onerous task. The multiple purposes, the volume and variety, the difficulty in finding it and managing it, dealing with the inconsistencies within it, the need to formally review it, and underpinning all of this, your own lack of knowledge, experience and proficiency can make dealing with literature quite daunting. The aim of this unit is to help you navigate your way through the literature. Once you realize there are people and resources you can call on, skills you can develop, and strategies you can employ, you can begin to see working with the literature as a manageable endeavour. Figure 8.1 outlines the variety of tasks involved in working with literature, and explores some of the steps you can follow to find it, manage it, use it, and review it.

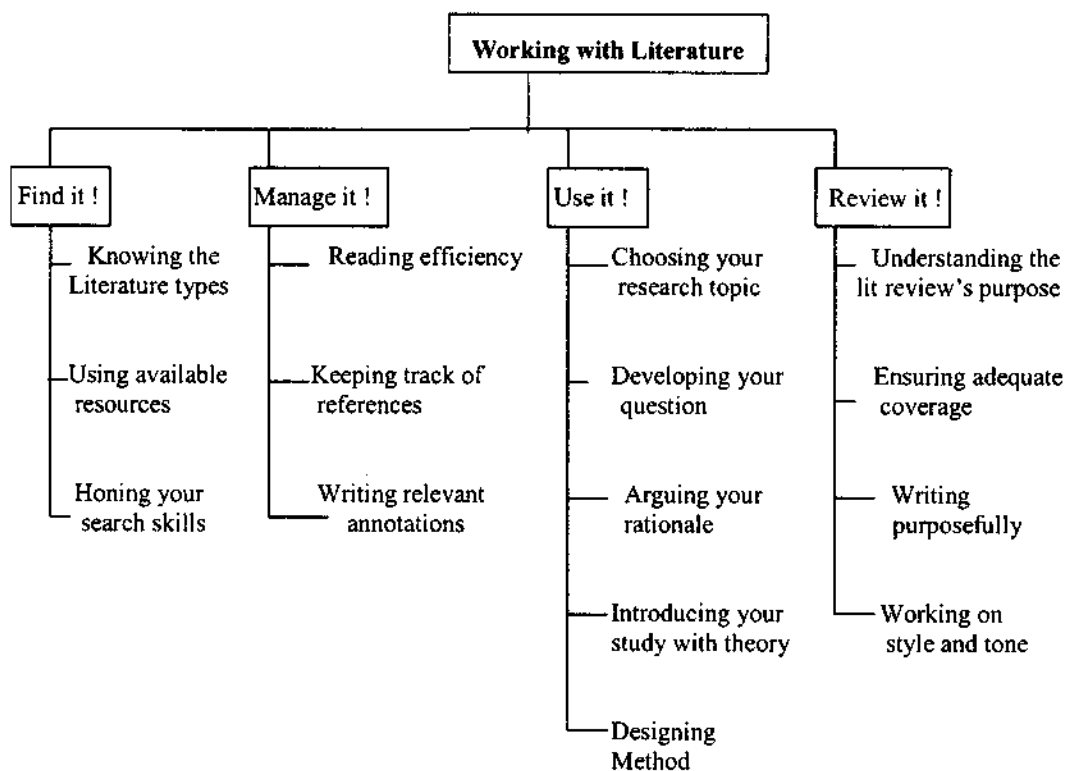


Figure 2.1 : Working with Literature (Zina O'Leary, 2005)

In order to find literature you need to have an understanding of various literature types; identify and utilise available resources; and develop search skills that will allow you to locate a range of source relevant to your topic/question.

1. What is referred to as 'literature' in research?

2.2 □ Types of Literature

Any and all types of literature are appropriate to the research process. In addition to contributing to your formal literature review, literature will be used to inform all stages of the research process, including background and context, theoretical and methodological directions, and writing up. Literature types thus include:

Discipline-based reference materials: If you are relatively new to a particular discipline or paradigm, subject-specific dictionaries and encyclopedias can help you navigate your way through the discipline's central terms, constructs and theories.

Subject-specific books: Introductory and advanced texts, anthologies, research reports popular non-fiction, and even fiction works can provide back-ground and context, while seminal or foundational works, often produced as books, can be core to your formal literature review. Books are also likely to inform theory and method.

Journal articles: These generally form the heart of a formal literature review because: (a) they are often targeted for 'academic' audiences; (b) specificity of content and regularity of production mean that articles are likely to be both relevant and current; and (c) in peer reviewed journals, articles have met bench-marks for credibility.

The array, specialization, and the accessibility of journal titles is ever increasing. However, the enormous difficulty in getting your hands on a journal not held in your own library prior to the advent of online journals and computer-based inter-library loan schemes has been overcome to a great extent.

Grey literature: this refers to both published and unpublished materials that do not have an International Standard Book Number (ISBN) or an International Standard Serial Number (ISSN). This includes conference papers, unpublished research theses, newspaper articles, and pamphlets/brochures. Most researchers generally utilise some type of grey literature in the course of their study. Recent theses and conference papers can be a valuable source of contemporary original work, while newspaper articles, pamphlets, and brochures can be used for background and context — or in the process of document analysis.

Official publications, statistics and archives: Such materials can be a valuable source of background and contextual information, and often helps shape a study's rationale. This type of literature, however, can also be used as a source of data. Secondary data analysis and document analysis is often drawn from this category of literature.

Writing aids: This includes bibliographic reference works, dictionaries, encyclopedias and thesauruses, almanacs, yearbooks, books of quotes, etc. Such resources can offer significant support during the writing-up process and can be used to improve the linguistic style of your work, add points of interest to the text, check facts, and reference those facts.

2. Match the following:

Discipline based reference materials

Subject specific books

Journal articles

Grey Literature

Official publications and archives

Writing aids

Bibliographic reference works

Secondary data

Unpublished materials

Targeted for academic audience

Introductory and advanced texts

Subject specific dictionaries & encyclopedias

2.3 □ Finding Literature

For searching and finding appropriate literature, it is advisable not to go it alone. There are excellent resources and experts who can give you the advice you need to make a start.

- Librarians
- Other Researchers/ Practitioners
- Your Supervisor (Guide)

are the experts you need to consult for searching your resources.

Librarians

Librarians are likely to be experts on the latest computer/internet searching facilities, they can often provide you with the training necessary for searching books/articles in libraries all over the world. It is also worth knowing that many librarians are designated to a particular academic area, i.e. social science, environment, humanities, etc. These 'specialists' can introduce you to relevant databases, journals (both hardcopy and electronic), bibliographies, abstracts, reviews, etc. specific to your area.

Supervisor

Talk to your supervisor/lecturers. The knowledge held by some academics is absolutely amazing. They often know the literature and are able to point you in the right direction, or can at least direct you to someone better acquainted with your topic who can give you the advice you need to make a start. Also see if you can browse through his bookshelves. While any one academic's library is unlikely to cover all perspectives or be completely up to date, academics often hold key readings that can kick start your search.

Other researchers/practitioners

Do not reinvent the wheel! There is a good possibility that another researcher has recently sourced and reviewed your area of literature— or an area quite close. Students often find only one or two recent studies that relate to their research question. The reference lists in these publications are to be carefully looked into. One journal article on your topic should lead to several relevant readings. Have a look at Masters and PhD theses as well; these works generally require large literature reviews. If you find a thesis with a topic related to your own, then you are likely to have a huge head start when it comes to sourcing the literature. Don't forget that you can also turn to practitioners — those who actually work in relevant fields often know the literature. Finally, try attending relevant conferences. It is quite likely this will lead to a wealth of leads in your literature search.

2.4 □ Honing your search skills

The tools for literature searching are certainly changing at the rate of knots. Card catalogues have been replaced by CD ROM databases, and an amazing amount research literature is now accessible on the internet using commonly available search engines. Literature far beyond the confines of the local library is now available. But commensurate with this explosion is the need to develop skills wading through it. Luckily, the skills needed for literature searching are actually becoming part of everyday computer usage. Finding anything on the internet demands an understanding of search engines, key words, and even Boolean operators.

Managing the literature

Once you find your literature, you will quickly realize that you need to develop a system for managing it. Students are often shocked at just how much literature can be relevant to a research project. If you can quickly and efficiently cull through the materials, keep track of relevant sources, and annotate your references in a manner that captures relevance, you will be that far ahead when it's time to call on these resources.

Efficient and selective reading

It is unlikely that you will be able to read every word of every piece of relevant literature you have located. But if you can quickly and efficiently wade through this literature in order to assess relevance and importance, or in other words 'get the gist', you can save yourself a lot of time and energy.

If you are reading a journal article, the first thing you should look at is the abstract or executive summary. This should give you a good sense of relevance. In a book, peruse the table of contents, the back cover blurb, and the introduction. Also have a look at the conclusion offered at chapter ends, as well as the overall conclusion. Within a few minutes you should be able to assess if a work is likely to be of value to your own research process.

3. How can one assess quickly whether a work is likely to be of value to ones research or not?

Summary

It is definitely worth developing a systematic approach to note taking that allows for a methodical and organised review of materials from the first read. Annotations are notes for your own use. This is basically a systematic review and record of all significant literature that you have sourced. They are not often an end product. You may be able to summarize a less relevant work in a sentence or two, while others will be much more instrumental to your own thinking and researching and require more in-depth coverage. Write what you think you will want to know later on, and try to not fall into the trap of trusting your memory. What you think you will remember today is likely to be forgotten, if not tomorrow, then certainly in a few months.

4. Why is summarizing necessary ?

Critical Comment

Students generally don't have many problems summarizing information. Where they often struggle, however is in their ability to be critical. Commonly the word 'critical' has a negative import, but in academic reviewing the word 'critical' means informed and considered information. Nevertheless, students often feel uncomfortable commenting on the work of published authors. But when you decide to engage in research and produce new knowledge you have decided to enter a domain that demands critical reflection on the literature. You need to be able to ask and answer the question 'What did I think of that and why?'

You may find that you have a gut reaction to a work: if so, your task is to reflect on and articulate why you had that reaction. If you don't have that gut reaction, you will need to systematically address various components of the work. Keep in mind that you can compare and contrast a work - on any number of dimensions - to others in the same area.

5. What does the word 'critical' mean in common parlance?

6. What is a critical reflection on 'literature'?

Exploring a topic

Not many students, or researchers for that matter, know all they need to know about a particular research area, and many find that engaging with a wide variety of topical literature is a good way to focus on issues. This can involve reading texts, popular media, as well as research studies that make up the scientific literature in a particular area. Given that a genuine interest in a topic or curiosity about a particular issue drives most research, students usually enjoy delving into readings that develop their own topical knowledge and expertise.

Informing your study with theory

Theoretical reading can be highly difficult for students who perceive a large gap between research and theory — something not uncommon. For some, theoretical reading is a passion and joy — and is therefore not problematic. For others, it can be an incredibly uncomfortable and laborious task. If you fall into the second category, it is important that you discuss the issue of theory with your supervisor and clearly negotiate the extent to which it is expected to inform your work.

The formal 'Literature review'

While the uses of literature in research are quite broad, a formal 'literature review' is a very specific piece of argumentative writing. It is generally the longest chapter in your thesis. It is a work that relies on scientific and academic discourse and debate to construct arguments about a current research project. Virtually all student theses require a literature review that should be relevant, critical, and comprehensive; in fact the review should represent a level of engagement in the literature that indicates a readiness to contribute to the literature itself.

7. Of what is the chapter on Literature Review usually composed?

2.5 □ The Purpose of Literature Review

Within a 'literature review', the literature is reviewed or explored so that researchers can:

- Inform readers of developments in the field — not only should a research study provide your readers with information about your particular research question, it should also provide rich learning about the general topic. The inclusion of a strong literature review should provide readers with contextual learning through an up-to-date account and discussion of relevant contextual theories, and research studies that make up a particular topic's body of literature.
- Establish their own credibility — because researchers are responsible for the production of new knowledge, it is essential they show they are abreast of the field; aware of relevant new developments; and conversant with academic and scientific discourse and debate within their research area. The literature review allows researchers to establish such credibility through rigorous and critical evaluation of relevant research works; a demonstrated understanding of key issues; and the ability to outline the relationship of their own work to the rest of the field.
- Argue the need for, and relevance of, their study — the literature review needs to make an argument for a researcher's own research agenda. It needs to set the current study within the context of past research. The literature review has the potential to identify 'gaps' that show the appropriate and significant nature of a study's research questions. It can also justify methodological approaches by critically evaluating methods generally accepted/typical for this type of research; highlighting the limitations that might be common to past studies; and uncovering the possibly unwarranted assumptions that can underpin method.

2.6 □ Tips for writing the literature review

In the previous sections we have seen that surveying the literature is necessary because scholarship is cumulative — no matter what you write, you are standing on someone else's shoulders. Scholars must say something new while connecting what they say to what has already been said. It summarizes previous investigations in order to inform the reader of the current state of research. It also identifies relations, contradictions, gaps and inconsistencies in the literature, and suggests the next step or steps in addressing the

topic or solving the problem. When organizing this chapter, remember that your goal is to inform the reader about the main trends and patterns in the literature under survey. You may think on several strategies for determining the important trends and patterns. These are:

What theory or theories are referred to most often? Is there a debate over theories? Has there been a shift in the popularity of theories?

Can you categorize the literature by the basic assumptions or methods used?

Can you see any patterns in the results, reports or conclusions drawn by previous researchers?

What authors' names pop up most frequently? Are they associated with a certain theory or type of research?

You are now aware of the fact that a literature review places your study in the context of other work that has already been done in the field. First it informs your reader about the theories your study is based on. Then, establishes the need for your investigation, typically by identifying how it fills a gap in the knowledge accumulated about the subject area. Next, defines terminology and concepts drawn upon in your study. Finally, explains the basis for your chosen research strategy.

When writing a literature review you should be selective, limiting the review to sources relevant to the topic. Concentrate on methodologically sound studies. Do not present an annotated list of the sources. Instead, organize the material for your reader, relating the citations to each other and showing trends in literature. Look for patterns in methods, subjects tested, results, conclusions and assumptions researchers have made about the topic. Emphasize the main arguments or findings made in each source. Look for gaps in the research. Think about aspects of the subject area that have not been explored, limitations that exist in the formulation of questions for research, inadequate data collection methods and inappropriate interpretations of results. You should also show the reader how the literature reviewed relates to your study.

To get started, try writing an outline of the literature review. You can organize the review around trends in the research or subtopics related to your study. The following is an example of an outline for a brief literature review:

I need to tell my reader that my general area of investigation is learning styles. Then I need to say that there are 3 basic views of learning styles: view Y, view X, and

view Z. I'll briefly describe X and Y and tell the reader that I'm not following these views. I'll then explain Z's theory in more detail, because I'll tell the reader what kinds of testing procedures have been used to test Z's theory stressing Krashen and Schmidt's work. I'll point out that these studies haven't considered age as a variable. I will say that I think age is an important variable, and I will prove it by pointing to the work on age and learning done by Lenneberg, Penfield and Singleton. Then I will say that age should also be considered when talking about learning styles, which will lead me right into my hypothesis.

8. Arrange the following steps of writing a literature review (SLA) in proper order:

- Discuss a learning theory
- State the hypothesis
- Basic views of learning
- The general area of investigation
- Argue the need for the study
- Establish own credibility

The hypothesis is a formal statement of the research question. It is a proposed explanation of an observable phenomenon. The term derives from the Greek 'to suppose' or 'to put under'. The hypothesis should be stated in a way such that a true or false answer from an experiment — analysis would support or refute the hypothesis.

For literature review as part of empirical research, a response journal can help you manage the tasks of reading, reviewing, synthesizing and organizing the literature. Keep a written record of what's happening in your head by jotting down:

- responses to books/articles as you read them
- how reading connect to each other
- reflections on how reading exemplify trends and patterns in the literature or change your hypothesis

A 'good' literature review ...

- is a synthesis of available research
- is a critical evaluation
- has appropriate breadth and depth
- has clarity and conciseness
- uses rigorous and consistent methods

- A 'poor' literature review is ...
- an annotated bibliography
 - confined to description
 - narrow and shallow
 - confusing and long winded
 - constructed in an arbitrary way

9. Which of the following are not features of a 'good' literature review?

- Clarity and conciseness
- Critical evaluation
- Confined to description
- Annotated bibliography
- Rigorous and consistent methods

A thesis statement is a statement in an essay that you plan to support, discuss or prove. Not all thesis statements can be empirically proven, but many of them represent an argument. It should stand out as an indicator of the clear direction in which you will take your research. It should be strongly worded, impossible to miss. It usually appears in the first chapter of the thesis. Usually it is no more than a sentence or two long. The subject of the thesis statement reflects the topic of the thesis. It is your answer to the central question or problem you have raised. Try out different possibilities until you find a statement that seems right for your purpose. Since the experience of writing may well alter your original plans, do not hesitate to revise the thesis statement as you write the paper.

10. Why is it necessary to revise the thesis statement?

2.7 □ Summary

In this unit you have learnt that working with literature is an essential part of the research process. It is a complex task that involves developing the skills to find, manage, use, and review the literature.

2.8 □ Questions

1. What is literature review?
2. Why is literature reviewing an essential part of the research process?

3. What are different types of literatures?
4. How to find a topic for research?
5. What is a hypothesis?
6. What is a thesis statement?

2.9 □ Bibliography

O' Leary, Zina. 2005, *The Essential Guide to Doing Research*. New Delhi: Vistaar Publications.

Somekh, Bridget. and Cathy Lewin. Eds. 2005, *Research Methods in the Social Sciences*. New Delhi: Vistaar Publications.

Module -1 — Unit 3 □ Plagiarism

Structure

- 3.1 Objectives
- 3.2 Definition of Plagiarism
- 3.3 Forms of Plagiarism
- 3.4 Consequences of Plagiarism
- 3.5 Unintentional Plagiarism
- 3.6 Searching vs researching
- 3.7 When documentation is not needed
- 3.8 Summing up
- 3.9 Review questions
- 3.10 Works cited

3.1 □ Objective

The purpose of this unit is to introduce you to plagiarism, what it means, what are its different forms and how it vitiates research. Having worked through this unit, you should be able to:

- Define plagiarism
- Identify different forms of plagiarism
- Know about consequences of plagiarism
- Understand unintentional plagiarism
- Integrate searching vs researching
- Know when documentation is not needed

3.2 □ Definition of Plagiarism

The word plagiarism, derived from the Latin word *plagiarius* (kidnapper), is a form of

cheating that has been defined as "the false assumption of authorship: the wrongful act of taking the product of another person's mind and presenting it as one's own" (Alexander Lindey, 1952). "Plagiarism includes two kinds of wrongs.

1. Using another person's ideas, information, or expressions without acknowledging that person's work constitutes intellectual theft.
2. Passing off another person's ideas, information, or expressions as your own to get a better grade or gain some other advantage constitutes fraud." (Joseph Gibaldi, 2009)

While writing your dissertation, all of the following are considered plagiarism:

- a. turning in someone else's work as your own,
- b. copying words or ideas from someone else without giving credit,
- c. failing to put a quotation in quotation marks, giving incorrect information about the source of a quotation,
- d. changing words but copying the sentence structure of a source without giving credit,
- e. copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not.

Plagiarism is a moral and ethical offence and sometimes a legal offence as well.

3.2 □ Forms of Plagiarism

The three forms of plagiarism are:

- a) Repeating or paraphrasing wording
- b) Taking an apt phrase
- c) Paraphrasing an argument or presenting a line of thinking

a) Repeating or paraphrasing wording

Suppose you want to use the material in the following passage, which appears on page 20 of the book *The World's Ten Greatest Novels* by W. Somerset Maugham.

Original Source

In the past readers seemed to have wanted their novels very long, and the author was often hard put to it to provide more matter for the printer than the story he had to tell required. He hit upon one easy way to do this. Into his novel he inserted stories, sometimes

long enough to be called novelettes, which had nothing to do with his theme or at best were tacked on to it with little plausibility. No writer did this with greater nonchalance than Cervantes in *Don Quixote*.

If you write the following sentence without documentation, you have plagiarized because you have borrowed another's wording without acknowledgement, even though you changed its form:

Plagiarism

Cervantes in his novel *Don Quixote*, inserted stories, sometimes long enough to be called novelettes, which had nothing to do with his theme.

But you may present the material if you cite your source:

As W. Somerset Maugham has suggested, Cervantes in his novel *Don Quixote*, inserted stories, sometimes long enough to be called novelettes, which had nothing to do with his theme (20).

In accordance with MLA style, the source is indicated by the author's name (W. Somerset Maugham) and by the page reference in parenthesis at the end of the sentence. In the works-cited list, at the end of the write up, the corresponding entry appears.

Maugham, W. Somerset. *The World's Ten Greatest Novels*. New York: Fawcett Publications, 1965.

b) Taking an apt Phrase

Original Source

I suggested the concept cline of bilingualism to rank bilinguals in terms of their proficiency in English. The three measuring points are the zero point, the central point, and the ambilingual point. The zero point marks a minimal bilingual in English (in India, for example, postmen, bus or train conductors, and 'bearers' in some restaurants). The central point indicates competence in one or more registers of English at the lower level of the vast administrative network, At the upper end of the cline [is] a 'standard' English-knowing bilingual ... (Kachru, *Asian Englishes Beyond the Canon*, 215)

If you write the following sentence without documentation, you have plagiarized because you borrowed without acknowledging a term ("bilingualism cline") invented by another writer:

Plagiarism

Bilingualism cline ranks bilinguals in terms of their proficiency in English. The three measuring points are the zero point, the central point, and the ambilingual point.

But you may present the material if you cite your source:

According to Kachru, Bilingualism Cline ranks bilinguals in terms of their proficiency in English. The three measuring points are the zero point, the central point, and the ambilingual point (215).

In this write up, the author's name refers the reader to the full description of the work in the works cited list at the end of the paper, and the page number in parenthesis identifies the location of the borrowed material in the work.

Kachru, Braj B. *Asian Englishes Beyond the Canon*. New Delhi: Oxford University Press, 2005.

c) Paraphrasing an argument or presenting a line of thinking

Original Source

No one has ever looked upon Jane Austin as a great stylist. Her spelling was peculiar and her grammar often shaky, but she had a good ear. ... She is apt to use the word of Latin origin rather than the plain English one, the abstract rather than concrete. It gives her phrase a slight formality which is far from unpleasant; indeed it often adds point to a witty remark and a demure savour to a malicious one. Her dialogue is probably as natural as dialogue can ever be. ... Since so many of the speeches are worded exactly as they would be today we must suppose that at the end of the eighteenth century young girls in conversation did express themselves in a manner which would now seem stilted. Jane Bennet, speaking of her lover's sisters, remarks: "they were certainly no friends to his acquaintance with me, which I cannot wonder at, since he might have chosen so much more advantageously in many respects" (W. Somerset Maugham on Jane Austin's *Pride and Prejudice* [*The World's Ten Greatest Novels*] 97).

If you write the following sentence without documentation, you have plagiarized because you borrowed another writer's line of thinking without acknowledgement:

Plagiarism

Jane Austin in *Pride and Prejudice* used the word of Latin origin rather than the plain English one, the abstract rather than concrete. It gives her phrase a slight formality which is far from unpleasant; indeed it often adds point to a witty remark and a demure savour to a malicious one. Her dialogue is probably as natural as dialogue can ever be.

... Since so many of the speeches are worded exactly as they would be today we must suppose that at the end of the eighteenth century young girls in conversation did express themselves in a manner which would now seem stilted.

But you may present the material if you cite your source:

According to W. Somerset Maugham,

"Jane Austin in *Pride and Prejudice* used the word of Latin origin rather than the plain English one, the abstract rather than concrete. It gives her phrase a slight formality which is far from unpleasant; indeed it often adds point to a witty remark and a demure savour to a malicious one. Her dialogue is probably as natural as dialogue can ever be. ... Since so many of the speeches are worded exactly as they would be today we must suppose that at the end of the eighteenth century young girls in conversation did express themselves in a manner which would now seem stilted." (*The World's Ten Greatest Novels* 97).

Here the author's name refers the reader to the full description of the work in the works cited list at the end of the paper, and the book name and page number in parenthesis identifies the location of the borrowed material in the work.

Maugham, W. Somerset. *The World's Ten Greatest Novels*. New York: Fawcett Publications, 1965.

3.4 □ Consequences of Plagiarism

The major consequence of plagiarism is that people who engage in it hurt themselves. Good research and writing involve a host of skills: for a start, evaluating sources, taking careful notes, selecting appropriate quotations, paraphrasing, and giving credit to others for their ideas and words. Students who plagiarize may never learn these skills, and life in college and beyond can be difficult without them.

Plagiarism is invariably seen as a shameful act, and plagiarists are regarded with pity and scorn. They are pitied because they have demonstrated their inability to develop and express their own thoughts. They are scorned because of their dishonesty and their willingness to deceive others for personal gain. Plagiarists do not recover the trust of those they try to deceive. The charge of plagiarism is a serious one for all writers. The course of a professional writer's career is permanently affected by a single act of plagiarism.

Research has the power to affect opinions and actions, hence, responsible writers compose their work with great care. They specify when they refer to another author's

ideas, facts, and words, whether they want to agree with, object to, or analyse the source. This kind of documentation not only recognises the work writers do; it also tends to discourage the circulation of error, by inviting readers to determine for themselves whether a reference to another text presents a reasonable account of what that text says. Knowing how to collect and analyse information and reshape it in essay form is essential to academic success. Plagiarists undermine these values.

3.5 □ Unintentional Plagiarism

The purpose of a research paper is to synthesize previous research and scholarship with your ideas on the subject. Thus, you can use other person's word, facts, and thoughts in your research paper, but the borrowed material must not be presented as if it were your own creation. You must document everything you borrow, not only direct quotations and paraphrases but also information and ideas. To avoid plagiarism, you must give credit whenever you use

- another person's idea, opinion, or theory;
- any facts, statistics, graphs, drawings—any pieces of information—that are not common knowledge;
- quotations of another person's actual spoken or written words; or
- paraphrase of another person's spoken or written words.

Unintentional plagiarism happens when students write research papers in a second language. In an effort to avoid grammatical errors, they copy the structure of an author's sentences. When replicating grammatical patterns, they may plagiarise the author's ideas, information, words and expressions.

If you realize after writing a paper that you accidentally plagiarised an author's work, you should report the problem to your instructor as soon as possible. In this way you eliminate the element of fraud. You may receive a lower grade than you hoped for. But getting a lower grade is better than failing a course or being expelled. It is also better than experiencing the shame of plagiarism.

3.6 □ Searching vs researching

Today's students learn that finding and manipulating data on the internet is a valuable skill. In research, the skills that you need to learn are interpretation, analysis and how to process the information you found. Your supervisor will be interested in seeing how you

understood the assigned topic, developed your own style and voice. Writing is a learning process and from your experiences and context you are expected to give an interesting angle on the issues.

Students may have trouble in distinguishing paraphrasing and plagiarism. In order to make their work seem original, by putting things in their own words, students may often plagiarise by changing the original too much or sometimes, not enough. Even if students are able to hide ignorance of particular facts or theories, research and writing skills make them apparent to anyone evaluating them.

Research projects begin with identifying and collecting source materials. The intellectual tasks in research are to understand the published facts, ideas and insights and integrate them with your own views. Thus you must distinguish between what you borrow and what you create.

You are never free from obligation to let your readers know the source of the ideas, facts, words or sentences you borrow. Acknowledging the author, whose work is used, is a requirement of academic standard. Published papers are readily recognizable, and teachers can often trace downloaded materials through the internet.

3.7 □ When documentation is not needed

You rarely need to give sources for familiar proverbs ("You are never too old to learn"), well known quotations ("Truth is what stands the test of experience" (Einstein)), or common knowledge ("Neil Armstrong was the first to set foot on the moon"). But you must indicate the source of any information or material that you took from someone else. If you have doubt whether you are committing plagiarism, cite your sources.

3.8 □ Summing up

In this unit we have tried to understand plagiarism, and when committed, how it affects writers. We have learnt about the reasons of plagiarism and its different forms. We hope you will now be able to avoid plagiarism while writing a research paper.

3.9 □ Review Questions

1. What is plagiarism?
2. What are the different forms of plagiarism?
3. What can be the consequences of plagiarism?

4. How can you avoid plagiarism?
5. How will you cite the materials borrowed from the internet?

3.10 □ Works Cited

- Gibaldi, Joseph Gibaldi. 2009. *MLA Handbook for Writers of Research Papers*. 7th Edn. New Delhi: Affiliated East-West Press Pvt Ltd.
- Linday, Alexander. 1952. *Plagiarism and Originality*. New York: Harper.
- Polonsky, Michael Jay and David S. Waller. 2005. *Designing and Managing a research project*. A Business Student's Guide. New Delhi: Response Books.

Module -1 — Unit 4 □ A Paradigm for Second Language Research

Structure

- 4.1 Objectives**
- 4.2 Research and the phenomena of second language**
- 4.3 Parameter 1: Synthetic and Analytic Approaches**
- 4.4 Parameter 2: Heuristic and Deductive Objectives**
- 4.5 Implicational Relationship between the different parameters**
- 4.6 Parameter 3: Control and manipulation of the research context**
- 4.7 Factors related to the degree of control and manipulation**
- 4.8 Summary**
- 4.9 Review Questions**
- 4.10 Bibliography**

4.1 □ Objectives

In this unit you will be introduced to three of the four parameters of second language research. The fourth one will be taken up in Units 3 and 4 of Module II. These parameters are unique characteristics of second language research. It is expected that you will

- a) apply the concepts of second language research in your contribution to research
- b) develop your ideas on investigating second language research
- c) be able to carry out research and discuss and compare research studies

4.2 □ Research and the phenomena of second language

Second language learning occurs all over the world for a variety of reasons, such as immigration, the demands of commerce and science, and the needs of education. Learning

another language may be the most ubiquitous of human activities after the mother tongue. Second Language Acquisition cannot be investigated from a single perspective. Research in second Language varies according to:

— *The circumstances* under which the research is conducted. Firstly, circumstances vary in relation to the context in which second language acquisition is taking place. Research on language acquisition taking place in natural environments will be different from that conducted in the classroom. Secondly, the circumstances also vary depending on whether the language being learnt is a second or foreign language. Thirdly, variation is also according to the age and other characteristics of the learners.

— *The methodology* used in research. There is no one preferred research approach for the study of all second language acquisition phenomena. Research methodologies may be determined by factors such as the philosophy of the researcher, the theory of motivating the research, and objective factors such as the conditions under which the research is conducted and the question being investigated.

— *The tools* used to study second language. Information on second language acquisition can be gathered through observation, testing, interviews, and instrumentation. Thus variation is due to the manner in which data are gathered.

1. Why Second Language Acquisition cannot be investigated from a single perspective?

The phenomena of second language learning takes into account knowledge and research methodologies from linguistics, anthropology, psychology, sociology, education etc. Each of these disciplines provides the researcher with different perspectives, goals, and tools for studying the phenomena of second language learning. Because of the variety of ways in which SLA may be studied, it would be useful to have a coherent and consistent set of characteristics. These characteristics would categorize the possible approaches, objectives, designs and data-gathering methods used in this field. This unit details an approach to research which reflects the unique characteristics and complexity of SLA.

This unit attempts to capture the interrelated and interdependent research parameters, the salient features of second language research. These parameters would provide a framework for studying the problems in carrying out research and discussing and comparing research studies. The four parameters for second language research which provide the metatheoretical basis upon which research methods can be developed are:

- i. the level at which research is *conceptualised*
- ii. the general *approach* to research problem
- iii. the *purpose* for which research is intended

- iv. the conceptual decisions at which the approach and purpose of the research are put into *operation* in the form of research *design*, *data-gathering* and *analysis*.

The questions at the conceptual level are:

1. What special conditions does the phenomenology of second language impose on how to approach research questions? Here we will discuss different ways of dealing with the complexity of second language as a composite of many elements, each of which can be studied separately, or as a whole of interacting parts.
2. What is the overall objective or purpose of the research? Is it to gather information about a second language phenomenon in order to describe it or to discover possible patterns and relationships among the factors that comprise it? Or is it to test a particular hypothesis which predicts relationships among second language phenomena? To what degree do these different purposes complement each other? Here we will discuss the differences between research which describes or generates hypotheses and research which tests hypotheses.

The questions at the operational level are:

3. What must be considered in the control and manipulation of different factors in second language research? Within this parameter, we will discuss approaches which impose little or no control and those which attempt to control identifiable factors.
4. How data are defined, collected and analysed within different second language research contexts? What are the different procedures for data collection and how are they affected by the approach, purpose, and design of the research?

2. What are the questions to be considered at the conceptual level of second language research ?

The following sections describe the parameters to characterize second language research. But, it should be recognized that even though they provide useful framework for the discussion and conduct of second language research, research does not always conform to the distinctions implied by the parameters.

4.3 □ Parameter 1 : Synthetic and analytic approaches

An examination of any single situation in which second language is studied will reveal many different interacting factors. Each of these factors can represent a separate area of study in itself. This is what is meant by the 'phenomenology' of second language. One

can study the effects of the first language on second language acquisition, the role of personality variables of different kinds of learners, the role of the social environment and the interaction of the individual with environments such as foreign or second language classroom, and the physiology and biology of human language learning and the part they play in second language acquisition. You may think of the factors involved in second language acquisition, other than these. A number of language related systems, such as the biological, psychological, or syntactic systems, have traditionally been identified as relating to or affecting second language acquisition. These systems are constructs representing the way we look at language acquisition and language. We speak of the roles of the psychological or biological systems of the learner or the phonological or syntactic systems of the first and second language. Discussing language in this way is a convenient convention developed by linguists and applied linguists to examine complex factors involved in second language acquisition.

In studying the acquisition of phonology, we might focus on the acquisition of the vowel system, the effects of the syllable structure on acquisition and the role of sociolinguistic variation in second language phonology. That is, the study of second language acquisition may be viewed as sets of nested and intersecting circles, each larger circle containing sets of other circles within it. Each circle can be regarded as its own self-contained system and studied separately as part of a larger system or as containing subsystems within itself.

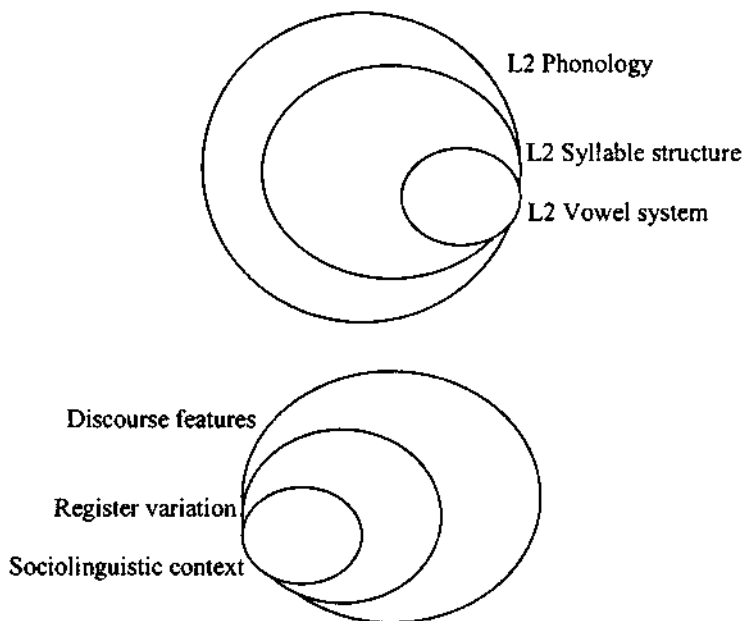


Figure 2.1 A systems view of second language acquisition

Viewing second language learning as a super-system of interacting systems allows us to grasp the enormous complexity involved in carrying out research in this area, while at the same time understanding how at any level we can approach research either by looking at the larger picture or any of its parts.

There are two ways to approach the study of a field with many component parts: either we attempt to grasp the whole or large parts of it in order to get a clearer idea of the possible interrelationships among the components, or we identify small parts of the whole for careful and close study, attempting to fit the small pieces into a coherent picture of the whole at a later stage. If we take the example of second language phonology above, we might study the problem of age and foreign accent at a general level or target a very specific aspect of phonology such as the acquisition of the stress system for learners of a particular age group.

The well-known story of the five blind men describing an elephant is an appropriate metaphor for these two approaches to the investigation of second language. Each blind man described the small part of the elephant that he was able to grasp and tried to infer a picture of the whole animal from that small part. In the case of second language research, it would be helpful to have a sixth blind man who could feel the whole animal, however inadequately, before trying to fit all of the descriptions of the small parts together.

Research in second language can be approached from a synthetic/holistic perspective, which emphasizes the interdependence of the parts of the field, or from an analytic/constituent perspective, which focuses on the role of the constituent parts that make up the total phenomenon. By 'synthetic' or 'holistic' we mean an approach to second language phenomena that allows us to view the separate parts as a coherent whole. By 'analytic', we mean an approach that will identify and investigate a single factor or a cluster of factors which at some level are constituents of one of the major systems. (See figure 2.2.)

Synthetic / Holistic Analytic / Constituent

Figure 2.2. Parameter 1: Approaches to the study of second language phenomena.

While each type of research has legitimate purposes or value by itself, synthetic/ holistic research and analytic/ constituent research may be seen as complementing each other.

3. What is the difference between Synthetic and Analytic approaches?

If we decide to investigate the relationship between one constituent of the biological system, age, and one constituent of the language system, phonology, then the two systems might be approached from a holistic or synthetic perspective. That is we would investigate the relationship between the biological factor (age), and the acquisition of the second language sound system as expressed in the general sense of foreign accent.

The synthetic/ holistic view of a language phenomenon may be the more valid, in studies where analysing a second language variable into its component parts may result in a distortion of the phenomenon. For instance, a study of the turn-taking behaviour of children acquiring a second language in a classroom might benefit more from an approach that examines turn-taking for all learners and the teacher at the same time. Focusing on only one group of learners or a particular kind of turn-taking may not give a valid picture.

In the case of 'foreign accent', the relationship between the biological component and the language component can be further analysed so that we may investigate a specific constituent of the notion 'foreign accent'. It might be decided that one aspect of foreign accent is related to the vowel quality of the learner's performance in the second language. We might decide to limit the investigation to adult learners from the same first language, who are above the age of thirty, and to study the acquisition of the vowel phonemes of English. The investigative process now involves analysis of the phenomenon into its sub-parts.

The analytic process can be extended to more specific levels of investigation. For example, acquisition of vowels might be studied by a panel of judges who would employ a subjective evaluation in order to arrive at a conclusion, focusing only on specific vowels. Alternatively, in order to limit the effect of the subjectivity of the judges, the vowel phonemes can be analysed on a spectrograph, which would give us a picture of the vowel phonemes of the non-native speaker for comparison with the spectrographs of native speakers.

4. Why the analytic process needs to be extended to specific levels of investigation?

4.4 □ Parameter 2 : Heuristic and deductive objectives

The second parameter is concerned with the purpose or the objective of the research. Research may have as a heuristic objective the discovery or description of the patterns or relationships yet to be identified in some aspect(s) of second language, or its aim may be to test a specific hypothesis about second language. In the former case, the objective

may be to describe what happens or to gather data and generate hypotheses about the phenomena studied. In the latter case, the aim is to test hypotheses in order to develop a theory about the phenomena in question. Heuristics is a method of solving problems by finding practical ways of dealing with them, learning from past experience. Heuristic teaching and education will encourage you to learn by discovering things for yourself.

5. What are heuristic and deductive objectives?

Heuristic or hypothesis-generating research

Heuristics is a method of solving problems by finding practical ways of dealing with them, learning from past experience. Heuristic teaching and education will encourage you to learn by discovering things for yourself. If the aim of the research is heuristic, the investigator observes and records some aspect or context of second language. There may be no complete theories or models to guide the researcher or to stimulate specific research questions at this point. Data are collected in an attempt to include as much of the contextual information as possible. These data may be categorized or analysed or written up descriptively. Often the result of such research may be the formulations of hypotheses.

Example

A study is interested in finding out why some second language learners are more successful than others. It is decided to observe language learners in classroom environments and to record as much information as possible about the learning process in that context. The aim is to observe as many factors as possible which might be related to successful second language acquisition (learners raising hands to participate, writing in notebooks, talking to themselves and to their peers, etc.)

We may have some general ideas, based on the work of other researchers as to why some learners achieve more than others. We may nonetheless choose to approach the question with as few preconceptions as possible. In the process of analysing the data, we may find ourselves with lists of a great many observed behaviours. We may then decide to look at all of the different behaviours and try to categorize them into the patterns which seem to emerge from what has been observed. For example, our observations may reveal that verbal and non-verbal behaviour should be considered as separate categories. The verbal interactions of teachers with learners may also reveal patterns which are different from those of the learners with each other.

Here the aim of the research is heuristic, with an effort to avoid preconceptions about what good language learners do. We proceed from the data, the actual behaviour

or unprocessed observations, to patterns which are suggested by the data themselves. This process is considered to be heuristic because of its inductive nature. This inductive character often allows the research situation and the data to define the shape and the flow of the investigation. Having a heuristic objective to the research enables us to discover patterns, behaviours, explanations and to form questions or actual hypotheses for further research.

Deductive or hypothesis-testing research

In this type of research, the investigator may begin with hypotheses which are based on observations suggested by heuristic research, or hypotheses found in second language acquisition theory or in other areas which appear to have relevance to second language. The deductive approach, as distinct from the heuristic approach, begins with a preconceived notion or expectation about the second language phenomena to be investigated. In this sense, it may be said that deductive research is hypothesis-driven. That is, the research begins with a question or a theory which narrows the focus of the research and allows the second language phenomenon to be investigated systematically. The question or hypothesis may relate diverse second language factors to each other or show that one causes another. Deductive research in second language might also be driven by theories or questions developed in other fields. It might be hypothesized that a theory developed in another field has explanatory value for understanding a given second language phenomenon.

Example

In cognitive psychology, the constructs or notions of 'field independence' and 'field dependence' were developed. This theoretical construct claims that some subjects are able to perceive a geometric figure embedded in a background pattern while others cannot. That is, subjects can be categorized as either dependent on the field or background upon which the pattern appears (field dependent) or independent of that field or background (field independent). This construct is thought to apply generally as a characteristic of learning style.

The first thing to notice in this example is that we begin with a possible idea about how to categorize learners and, rather than discovering a category for learners, we begin with an assumption or hypothesis that this categorization may apply to second language learning as well. If we apply this concept to second language learning, we may hypothesize that good language learners may be 'field independent', allowing them to extract language rules from the language data in which the rules are embedded, while poor language learners are 'field dependent', which would explain their difficulty in learning a language

from natural language data. The concept of field dependence can thus become the source of hypotheses about second language acquisition.

Heuristic	↔	Deductive
Data-driven		Hypothesis-driven
No preconceptions		Makes predictions
Can generate hypotheses		Tests hypotheses
Product: description or hypotheses		Product: theory

Figure 2.3. Parameter 2: Characteristics of heuristic and deductive researches.

Figure 2.3 summarizes the end points and differences discussed above between the heuristic and deductive research objectives. Between each of these end points there are possible research formats which may combine attributes from both sides. The type of question asked in the research will determine what the objective or purpose of the research will be.

6. State whether the following are features of synthetic, analytic, heuristic or deductive research

Constituent

Holistic

Theory

Predictions

Generate hypothesis

Tests hypothesis

Data driven

7. Mention which of the above four types of research can be applicable for investigating:

Age and Second language Phonetics

Turn taking behaviour in children in acquiring a second language

Learning foreign-accent

Acquisition of vowels

Verbal and nonverbal behaviour

Good language learners are field independent

4.7 □ Factors related to the degree of control and manipulation

i) Restriction of scope/ focus

In any study, decisions must be made as to whether and how to set limits on the scope or focus of the investigation. These decisions tend to affect the kinds of designs and methods which will be used in the research. Low levels of restriction on scope or focus will mean that it will be more difficult to control for the effects of different factors or variables in the research context. However, this may be a conscious decision on the part of the researcher who wishes to pursue a heuristic approach to the research question and who may fear that restriction or control may distort the study of the second language phenomenon under consideration. A decision to restrict the research to a narrow scope or focus will facilitate the control of variables and the use of deductive hypothesis-testing methods. In general, the more restricted the scope, the more the research context will have to be manipulated since restriction implies the selection of some aspect within the research context for closer study. For example, the study of children's acquisition of a second language in the classroom, through the synthetic approach may have to be conducted in which case the scope is as unrestricted as possible. This would mean that the investigation would try to record anything and everything of note without deciding which observed phenomena were of significance and which were not. On the other hand, adopting an analytic approach to such a study would require us to narrow the scope.

It may be decided to investigate the relationship between the development of the children's metalinguistic abilities (as in a phoneme segmentation task in the second language) and the acquisition of reading skills. In order to carry out this study, it would be necessary to limit the focus of the research to very specific aspects of language and reading, to develop appropriate tests to evaluate children's metalinguistic abilities and to use methods which would identify the relationship between reading and metalinguistic ability as devoid of any extraneous factor. This kind of study would narrow the focus to a particular kind of data, such as reading test scores and the performance of the subjects on metalinguistic tests.

9. For investigating a child's second language acquisition in the classroom which approach can one adopt? Why?

ii) Control of variables

Research may be characterized by the degree of control exercised by the research design and methodology over the variables, identified and unidentified, in the research context. Here the variables may be taken to be those different factors which play a role in a study such as language, the characteristics of the subjects or learners, or the specific factors being studied, such as metalinguistic ability.

The restrictions on the scope of the phenomena to be investigated and the control of variables are interrelated. The more the investigation is limited in scope, the more it is necessary to control for the effects of factors which may confuse the interpretation of the results. The researcher must be able to say that the results are due to the particular factors and not to anything else, identified or unidentified, that may have been present at the time the research was conducted.

We have discussed two possible examples of research on children's second language acquisition in the classroom. In the first, a few variables are controlled, because they are unidentified. In fact, the purpose of the study might be to describe what the possible factors are. In the second example, the study of reading and metalinguistic ability, it is assumed that the primary factors that could affect the outcome of the study have been identified. Those factors which are not relevant to the central research question can be controlled through various measures, such as the way the research is designed and the way data are collected.

10. For investigating metalinguistic abilities what are the non relevant factors?
How can they be controlled?

iii) Attention to form/subject awareness

One of the unique aspects of research involving language is that language can be studied as a medium for communication as well as an object in itself. When we use language as a tool for communication, we usually pay more attention to the content we wish to communicate and less to the form of language itself. If the object of research is to examine the form of language such as syntax rather than its content, one of the many possibilities open to the researcher is that the performance of second language learners using the language in a natural setting could be analysed. Or, a specific task could be developed to constrain the learners to produce the form which is the focus of the study.

In the case of investigating language acquisition in a natural setting, we might collect samples of language in an interview or a role-play situation in which the speakers are focused on the content of language and not on its form. In order to obtain data which are truly representative of this naturalistic use of language, the subject should be unaware

that data are being recorded at all. If the object of the research is a specific form, learners might be asked to imitate sentences, to transform sentences into questions, or to judge the acceptability of sentences presented to them by the researcher.

In general, it may be stated that the more the focus is narrowed, the more it may be necessary to manipulate the research context and the more likely it is that the learners/ subjects will become aware of being involved in a study. While narrowing the focus and manipulating the context is necessary for certain kinds of studies, the concomitant effect may be to sensitize the subjects to the very act of research. Because they know that they are participating in research, there is a possibility that their performance will not be the same as it would be if they were performing the same task in a natural environment. The subjects may now shift their conscious attention to that aspect of language performance under observation, and change or edit it in some way.

In research in which the focus is not clear to the subjects (informants), it is more likely that the data collected will be representative of what learners normally do. Tarone (1979, 1982) has referred to this difference in learner performance as the difference between colloquial and superordinate forms. The former is thought to be more natural, with little attention to form, while the latter is carefully edited with a high level of attention to form.

In studies which are more controlled and manipulated, there should be a concern for the validity and representativeness of the findings.

11. In case of investigating language acquisition in a natural setting how can samples of language be collected?
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iv) Researcher subjectivity

Often, the less controlled and focused a research study is, the more the interpretative abilities of the researcher are called into play. Limiting the role of subjectivity in the interpretation or description of second language phenomena may therefore be seen as a function of the degree of manipulation and control exerted over the research environment. The more focused the object of the investigation, the more likely it is that researchers will have to use tools outside of or in addition to their own interpretative powers.

For example, research which is both synthetic and heuristic and places fewer restrictions on the scope of the phenomena to be studied, must depend on judgements made by the investigator as to what will be recorded and what will be ignored. When data collected in this kind of research are reviewed, they are placed into categories established by the researchers, who impose a structure on the data which was not there

before. The nature of that structure depends to a great extent on their perception of the data. The broader the scope and focus of the research, the more some form of selectivity and inferencing must inevitably be involved.

The fourth parameter for second language research is data and data collection. We will learn about this in the next module.

4.8 □ Summary

In this unit we have learnt about the characteristics of second language research within the framework of four parameters at the conceptual and operational levels. These parameters are interdependent. Decisions about the manner in which data will be collected cannot be made before decisions have been made at the conceptual level to determine the approach of the research and purposes it is expected to serve. Second language acquisition is an area of investigation which draws on many other fields such as linguistic theory, education, first language acquisition, psychology and others. It cannot adopt the research paradigm of any one of these related fields but must develop research methodologies of its own which allow for a variety of approaches and flexibility in investigating research questions.

4.9 □ Review questions

1. What are the different perspectives in second language research?
2. What are the salient features of second language research?
3. What questions must the researcher address at the conceptual level?
4. What must the researcher decide on at the operational level?
5. What is the implicational relationship among different research parameters?
6. Think on the following;

Theoretical research—Linguistics in recent years has been concerned with the theory of universal grammar and how it pertains to language acquisition (Chomsky 1981). Some have seen this theory as having potential for explicating issues in second language acquisition and have adopted it (Cook 1985). This is in a sense research about research.

7. Ponder on :

Empirical research is heuristic or deductive and not based on a particular theory or hypothesis. It is based on data. If theory is taken as a potential explanation of SLA, it should predict the kinds of errors learners will make. Define what rules will likely be

transferred from the first language and what rules are likely to be learned independently of the first language.

8. Distinguish hypothesis testing and hypothesis generating research.
9. A researcher wants to decide the degree of control which will be imposed on the research context and how this degree of control will affect the outcomes of the investigation. Which parameters and which levels are in his research framework?
10. At which level the research addresses questions dealing with the approach which will be taken with respect to the study of second language phenomena and the objective of the research?

4.10 □ Bibliography

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Module -2 — Unit 1 □ The preparatory stages of research

Structure

1.1 Objectives

1.2 Introduction

1.3 Where do research questions come from?

1.4 Phase 1: The general question - sources for question

1.5 Phase 2: Focusing the question

1.6 Summary

1.7 Review questions

1.8 Bibliography

1.1 □ Objectives

In this unit you will learn about research questions. After reading this unit you will be able to

- select a topic for research
- learn about the pathways of developing and conducting research
- develop a research question

1.2 □ Introduction

In this unit we shall discuss the beginning stages of setting up actual research from the general conception of the research idea to the formulation of a research plan or hypothesis. At the preparatory stages of research, researchers in second language may have to select a topic for research. Sometimes the researcher does not know where to begin the creative act of starting a new research. Sometimes the topic chosen is trivial or impractical or there is a leap from the conception of an idea to an experiment with no considerations of other alternatives or obstacles which may arise.

Conceiving and carrying out research is as much a creative process as it is a scientific one. There are many pathways which may be followed in developing and conducting research. The steps in this unit attempts to provide a sense of logical progression which, in the case of the experienced researcher, is often intuitive.

There is an integral relationship between the development of good research questions and the execution of the research itself. If the questions are inaccurately or vaguely posed, the total structure of the research and its significance will be affected. A skill to be acquired by every researcher is the ability to formulate good questions. Formulation and fine-tuning of the research question contributes to reliable, valid and significant results.

1. Why is the formulation of a good research question necessary for its execution ?

1.3 □ Where do research questions come from ?

The preparation for research is an evolutionary phase, with each successive phase being a refinement on the preceding one. That is, the preparatory steps of research are cyclical in nature with each phase encompassing a narrower, more focused vision of the preceding step. In the case of any particular research, there must be preparatory steps before the actual research can be carried out. These preparatory steps can best be described as the phases that researchers go through initially before reaching the point of conducting an experiment, carrying out observation in the field, or collecting data in some way. These preparatory steps should precede any actual research such as *observations* and *data collection* or putting into operation a concrete experimental design. The research study or design is itself the end product of a process of careful preparation.

Research may take different forms depending on a number of factors, the most important being the type of question being investigated and the research format most appropriate for the investigation. At different points in the development of a research project, decisions such as whether the research should be approached synthetically or analytically and whether the research objective is to describe or test a hypothesis about a second language phenomenon will affect future steps in the development of the research.

Sources for questions: Experience and interests

Other research

Sources outside second language

Good scientists are observant of phenomena around them. Their state of curiosity derives from a lack of understanding of something. In the field of second language studies, curiosity and the resultant questioning can arise from a number of sources. These sources provide the stimuli for questioning the phenomena associated with second

language. Figure 1.1 illustrates the development of a research question in the form of a flow chart.

2. What preparatory steps precede an actual research?
3. Name two important factors owing to which research may take different forms.

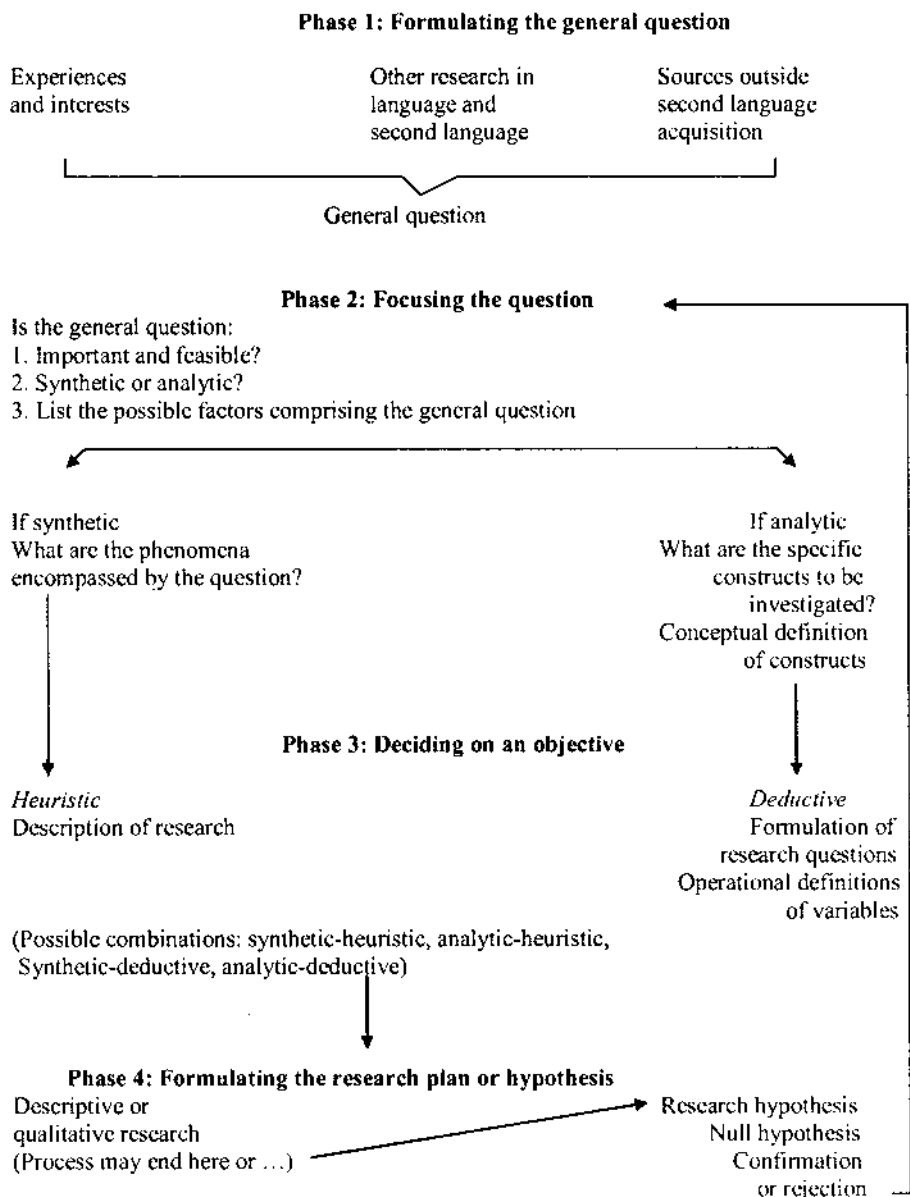


Figure 1.1. Preparatory phases of research.

1.4 □ Phase 1 : The general question – sources for question

1 Experience and interests

Questions for research can derive from everyday experience with language learning. Curiosity can be aroused by something observed in a personal language learning experience which leads to further questioning and perhaps to the development of original research from this questioning.

You may come to the field of second language acquisition with questions from other areas in which you have an interest and which can be related to research in this field. For example, the theories and methodologies of the field of reading may hold implications for research in second language acquisition. To what degree is learning to read in a second language the same as learning to read in a first language? Does the ability to read in the first language facilitate learning to read in a second? Do the metalinguistic abilities related to reading in a first language help or hinder learning to read in a second? How does the ability to read in a language with a different orthographic system affect learning to read in the target language?

With the development of research in metacognitive processes, there has been renewed interest in language learners keeping diaries documenting their experiences and conscious thought processes while in the language class or other second language learning contexts. Such diaries might include the author's feelings during the actual language lesson but recorded after class, attitudes to language learning, attitudes toward the teacher, self-analysis of the methods used for practising the language and so on. While these diary reports are subjective in terms of what is reported and recalled, they can raise interesting questions for further controlled research. In other words, they may be a place to begin. Teachers may wish to keep diaries of things observed in a language lesson or of any student behaviours that seem to have some effect on language learning. By sifting through informal observations, it may be found that a number of factors are of interest for further research. From the evaluation or description of these factors, a single factor may emerge which may be isolated for further controlled study.

4. Why keeping diaries of experiences and conscious thought processes are important for language learners?

2 Reading other research in language and second language

Reading research in a field such as second language learning and teaching can itself become a source for further questioning and curiosity about claims made by a theory or the way a study was conducted. A theory which claims that learners monitor output in terms of grammatical rules learned in the classroom (Krashen 1987) can lead to research on how grammatical rules are learned and used by learners, and whether such rules can make a difference in the learners' performance (Seliger 1979).

While reading research in second language acquisition and other fields, readers should ask themselves a number of questions to stimulate their own thinking about possible original research, such as:

1. Does this research test or generate hypotheses?
2. If the research is descriptive, where do the data come from?
3. If the data are gathered from other studies or sources, how reliable do the data seem to be?
4. What is the hypothesis or theory being tested?
5. Is the design or methodology appropriate for the kind of research?
6. Does the research really test the hypothesis or the theory?
7. How are the conclusions reached by the research supported by the research and the data?
8. Are theoretical claims made by the research supported? How?
9. Does the research make a clear distinction between the results of the study based on data and extrapolations which may go beyond the data?
10. Are hypotheses which still remain to be tested presented as conclusions or results?
11. Are there good alternative explanations to those given by the author?

The questions above are to stimulate thinking while reading research. It is productive for comprehension to read research with a questioning mind and it can lead to the eventual development of researchable questions.

5. How can one find researchable questions while reading research materials?
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3 Sources outside second language acquisition

While the examples above are taken from linguistics, similar research of a theoretical or empirical nature is found in psychology, sociology and education. Here too, questions and hypotheses for research in second language can be found. Most of the more interesting theories about second language acquisition have been derived from these fields and have become tools for investigation within second language research. According to Pasteur,

"Research questions are not the result of chance or wild guesses but develop naturally in 'prepared minds,' that is, minds occupied with ideas and concepts and sensitized to observation."

Once questions have been raised in the mind of the researcher as a result of curiosity, observation, and reading, these questions must be formulated in a general sense. Referring back to Figure 1.1, we find that before entering into Phase 2 or Phase 3, the question must be stated in a form which will allow it to be further narrowed. For the researcher, this is often a difficult stage because it requires the careful analysis of the general question in order to reduce it to a level where it may be considered researchable.

Let us take an example to see how we might move through the steps in Phase 1:
Observation: learners acquire language at different rates.

Curiosity: are different rates of acquisition due to characteristics of learners or teachers? Are different rates of acquisition due to some aspects of method or material?

As we consider this observation, we arrive at a general question about the phenomenon of different rates of acquisition.

General question: Why do learners of a second language progress at different rates?

The problem with this general question is it is too broad and too inclusive. In its current formulation we do not know whether we are speaking of children or adults, learning in a classroom or in nature, learning all skills or a specific skill such as reading, learning a foreign language, or a second language, and so on. In other words, before we can decide whether to approach this question on a synthetic or analytic basis, there are many other questions which must first be asked. This brings us to Phase 2.

6. From which fields did theories of Second Language Acquisition develop?

1.5 □ Phase 2 : Focusing the question

Is the general question feasible? Should it be approached synthetically or analytically? If synthetically, what are the phenomena encompassed by the question? If analytically, what are the specific factors to be investigated?

Feasibility

While it may be easy to agree that the general question is important, it is more difficult to decide if it is feasible. Another way of asking whether there is an answer to the general question is to ask whether the question can be investigated given the researcher's or the world's state of knowledge, the intellectual, academic, and research tools available, and

the conditions under which the research would have to be conducted. In brief, we are asking, 'Is finding an answer to the general question feasible?'

If the researcher is able to test the general question for feasibility before progressing to more advanced phases of developing the research, waste of time and energy can be avoided. It is best to ask the following questions at this stage to avoid aborting a study at a later stage because of some unforeseen problems.

1. How can the answer to the general question be found? What does it entail? Will finding the answer necessitate setting up an experiment? Will it require the development of test or a survey questionnaire?
2. Does the researcher have the prerequisite background knowledge to investigate the question? Is knowledge of linguistics or sociolinguistics necessary? How much statistical analysis appears to be involved? Will someone with more expertise be required? If the study is to be related to other peripheral areas, how much research should be done before proceeding to the next phase?
3. Are the terms and concepts used in the formulation of the general question defined clearly and consistently? Are the concepts and terms used in a way that is consistent with how other researchers have used them?
4. What logistical and practical problems can be anticipated? If the general question asks about the language acquisition of children or adults will the researcher have access to the number of subjects required to investigate the question? Who will collect the data? Is it necessary to train assistants? If computer analysis of data is necessary, will the researcher need to be trained in the use of computer statistical analysis?

7. What is feasibility in second language research?

The question of feasibility may be divided into several subparts. Let us now apply these questions of feasibility to the general question, why do learners of a second language progress at different rates?

1. How?

In the case of this general question, there are several possibilities. The research could be conducted in a school setting or in a natural setting by studying individuals in the process of second language acquisition. It could be studied synthetically, by observing groups of learners and describing their activities, or analytically, by focusing on some specific aspect of language acquisition such as the acquisition of a synthetic form or a discourse strategy associated with acquisition. It might be possible to select learners who have already been identified as learning at different rates and test them for various characteristics

that have been related to successful language learning. In other words, there are many possible ways to investigate this question and it would be wise, before beginning, to explore them for possible advantages and disadvantages.

2. Prerequisite knowledge

Investigating this question would require different kinds of knowledge depending on the direction which the researcher decides to take. If the goal is to observe the social processes involved in second language acquisition, then it is necessary to acquire background knowledge in areas such as group behaviour, language interaction patterns in groups, and theories relating to the role of the social environment in language acquisition.

If, however, the focus of the research is on the linguistic factors involved in the development of language competence by good and poor language learners, then the research will require familiarity with linguistic theories pertaining to second language acquisition, methods for analysing linguistic data, and methods for collecting such data.

8. What special type of knowledge is necessary in studying social processes in second language research?

3. The consistent definition of concepts and terms

In the case of the general question under consideration, the definition of terms such as language learner, language learning, rate of learning, will have to be narrowed considerably in order to be useful for phase 2, in which the general question will become more focused.

It is clear that in a study concerned with rates of acquisition, a consistent definition of language learning or acquisition is crucial. Will acquisition be defined in terms of scores on a test? Will a functional measure of acquisition be used, such as the ability to perform specified discourse functions? This does not mean that definitions of terms used must be universally accepted. If the research carefully defines how terms will be used for the purposes of the particular study, problems of ambiguity and inconsistency will be avoided.

9. Why is definition of concepts and terms required ?

4. Logistical and practical problems

This aspect of feasibility includes factors bearing on the logistics of the investigation. Do we have direct access to groups of subjects? How much time will be required to study this question?

Under the heading of practical problems, no detail should be left unexamined. If it is decided to develop data from video tapes of subjects performing a language task or interacting in a language lesson, additional judges may be necessary in order to record

and agree upon what is being observed. However, this means that these judges will have to be trained in methods of observation; coding instruments which can be used in a consistent manner will have to be developed.

We will learn about Phase 3, deciding on an objective, and Phase 4, formulating the research plan in Unit 2.

10. How can logistics be brought in second language investigation?
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1.6 □ Summary

Thus we find that formulating and focusing the research question are the first two preparatory phrases of research. For your research you may make a preliminary record of observations based on which data can be collected for the actual research. This observation, should be feasible, verifiable and evident amongst the subjects (from where you have collected data), later on. Once you are through with this stage, you are ready for the next step of research.

1.7 □ Review Questions

1. What are the preparatory stages of research?
2. What are the sources for research questions?
3. Discuss the factors which make up research question.
4. What are the subparts of feasibility?
5. What are the questions one can ask while reading research in second language acquisition?

1.8 □ Bibliography

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Module -2 — Unit 2 □ The Stages of Research

Structure

- 2.1 Objectives**
- 2.2 Introduction**
- 2.3 Which approach: synthetic or analytic?**
- 2.4 Phase 3: Deciding on an objective or purpose**
- 2.5 Phase 4: Formulating the research plan — the hypothesis**
- 2.6 The research hypothesis and null hypothesis**
- 2.7 Summary**
- 2.8 Review questions**
- 2.9 Bibliography**

2.1 □ Objectives

From this unit you will learn

- about the feasibility of synthetic and analytic approaches
- how to decide on an objective and a purpose
- how to write a hypothesis

2.2 □ Introduction

In continuation with our discussion from unit 1, here we will learn about Phase 3: deciding on an objective and Phase 4: formulating the research plan or hypothesis, of the preparatory phases of research.

2.3 □ Which approach : synthetic or analytic ?

Having considered the level of feasibility of the general question, it is necessary to decide which approach, synthetic or analytic, would be suitable.

A synthetic approach would view the research holistically, as a composite of factors which might not be easily or validly analysable into separate parts. An analytic approach would select one or several factors which make up the phenomenon for close analysis, in a controlled study. Either perspective has implications for research design and method.

It is useful, deciding before which approach to take to the general question, Why do learners of a second language progress at different rates?, to consider the factors which might be involved in determining some of these factors might be more suitable for an analytic approach, others for a synthetic approach. There are also factors involved in the rate of acquisition which could be investigated by either approach:

1. The learner's previous language learning experience.
2. The learner's attitude toward the language class, the teacher, or the materials.
3. The learner's aptitude for language.
4. The learner's first language.
5. The amount of practice which the learner engages in both in and out of the language class.
6. The kind of practice which the learner experiences - drill versus communicative use of the target language.
7. Personality characteristics of the learner.
8. Cognitive characteristics of the learner.

The synthetic approach

It may be decided to approach the research from a synthetic perspective. This may be because of the nature of the factor or factors to be studied, or because it is felt that a particular phenomenon is best studied from a holistic point of view and that taking an analytic approach will distort the nature of the phenomenon. For example, if it is felt that something related to the manner or amount of practice in the language class is responsible for different rates of acquisition, it may be decided to look at all or many aspects of classroom practice such as practice in drills, group practice, individual practice, controlled practice, spontaneous practice, or practice in pairs. All of these forms of practice are part of the total phenomenon which we refer to as 'practice' and to isolate one from the others may distort its role, while taking a synthetic approach may allow us to evaluate the relative contribution that each form of practice makes to the overall process of acquisition.

At this stage, then, the decision would be concerned with what phenomena would be included in the composite concept of 'practice'. That is, because we may not have a clear idea of what kind of practice or how much practice plays a part in varying rates of acquisition, we would decide to look at a whole range of types of practice and how

practice plays a part in varying types of acquisition. We may look at a whole range of types of practice and how they interrelate and interact as they naturally occur in the language class.

The analytic approach

An analytic approach means that the second language phenomenon is analysed into constituent parts and one or a cluster of these constituent parts is examined in greater detail to the exclusion of other factors. When an analytic approach is taken, it usually means that the investigation will benefit from looking at some aspect of the second language problem in isolation; that a constituent approach to the phenomenon is possible and will not distort the nature of the phenomenon itself; and that enough is known about the constituent factor chosen for it to be studied in isolation.

Returning to the particular factor of practice, let us suppose that we had grounds for believing that some aspect of individual practice was responsible for differing rates of acquisition. In an analytic approach, a single factor or clusters of factors relating to individual practice in the language classroom would be isolated for further study. For example, we might decide to study individual practice in formal settings, such as drills, or combine a study of individual practice in formal and communicative settings.

For an analytic approach, it is necessary to define the terms used in the general question precisely. At this stage, we are concerned with arriving at a conceptual rather than an operational definition. That is, we must define conceptually what we mean by 'practice', 'formal practice', 'communicative practice' and other related terms.

1. State the approaches for the following investigations

Practice in a language class

Individual practice in formal settings

Individual practice in communicative settings

Group practice

Practice in drills

Controlled practice

Practice in pairs

2.4 □ Phrase 3 : Deciding on an objective or purpose

Once an approach has been decided, the objective of the research must be considered. Is the purpose to discover or describe or is it to test a hypothesis that is based on previous work?

Heuristic	Deductive
Description of research procedures, observations; some operational factors; definition of terms	Operational definition of terms or formulation of research question or hypothesis

Table 2.1. Phase 3: Deciding on an objective or purpose.

Heuristic research

Heuristic research is characterized by its *inductive* and *descriptive* nature. The researcher may begin with a general notion about some aspects of second language learning and gather data in various ways to learn more about the phenomenon under study. Descriptions or hypotheses may then develop from this data.

Research might have a heuristic purpose or goal but can be combined with a synthetic or an analytic approach to the research problem. We might have synthetic-heuristic or analytic-heuristic research depending on the approach to the second language phenomenon and the goals of the research. For example, in analytic-heuristic research, if we suspect that a specific factor involved in classroom language learning played a part, but were not certain what that part was, had no theory, hypothesis, we might conduct a heuristic study focused on that particular constituent of classroom language learning. The synthetic-heuristic research combination may be decided upon if the research is inclusive without any predisposition for assigning more importance to one factor or another. Heuristic research does not necessarily begin with preconceived hypotheses. If the purpose of our research is on the question of rates of acquisition, to discover what factors most affect it, we do not begin with a hypothesis to be confirmed or rejected.

2. Why heuristic researches do not begin with preconceived hypotheses?

Deductive research

Research with a deductive objective begins with a preconceived notion about what may be found. This preconceived notion is then formulated as a prediction or hypothesis to be confirmed or rejected. The hypothesis is usually grounded in a theory which attempts to explain the behaviour in question.

Deductive research can be combined with synthetic or analytic approach. An example of synthetic-deductive research is an investigation in which a relationship is predicted between a large number of related variables or factors on the one hand and language ability on the other. Since a group of factors is seen as interdependent in some

way, they are first treated synthetically as a composite whole to see whether in combination they correlate with language ability. In a study of factors which predict a second language learner's ability to acquire accurate pronunciation, Purcell and Suter (1980) examined twenty variables which they hypothesized would predict accuracy in pronunciation. Gradually, through statistical procedures, the authors limited the size of the group factors, first to a set of twelve and finally to a set of two factors which best predict pronunciation accuracy.

Let us look at an example in the form of a focused question about the relationship between practice and rates of acquisition:

Does the amount of practice affect the learner's rate of acquisition?

The description and definition of the factors which relate practice and rate of acquisition maybe arrived at through the following questioning:

- A How is 'language practice' to be defined? How will it be measured?
- B How is 'acquisition' defined? Will it be defined in terms of grammatical competence, communicative competence, or a combination of the two? How will it be measured?
- C What kind(s) of practice are thought to affect rate of acquisition?
- D How is the amount of practice thought to affect rate of acquisition?
- E How will measures of language practice be related to measures of language acquisition?

In order to answer these questions, the researcher may have to translate conceptual definitions into operational definitions, defining the terms of constructs which will be studied. Methodological issues are also addressed at this stage as to whether research can be carried out with a small number of subjects by conducting in-depth case studies of a few learners or whether research requires many subjects in order to test the hypothesis.

It may be that after review of the literature, we find two competing definitions of 'language practice'. One related to the frequency of repetitions of a sentence pattern (A) and another related to the meaningful use of language in a communicative context (A_1). Let us assume that we will define language acquisition as the learner's ability to function with language in real life situations (B). Exploring the implications of the questions raised under A and A_1 leaves us more focused with questions about relationships between practice and acquisition. (See Figure 2.2).

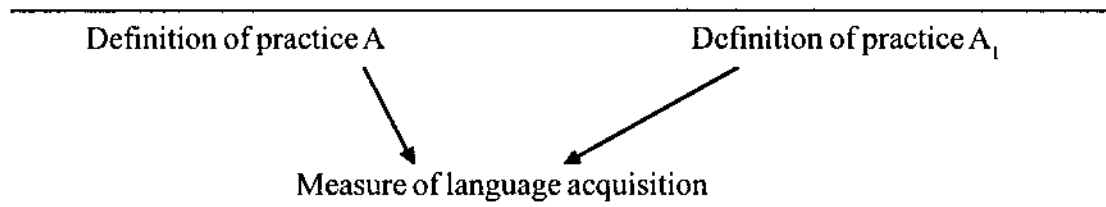


Figure 2.2. *The relationship between practice and acquisition.*

Questions D and E put the theoretical construct *language practice* into more concrete or operational form. It is required to consider how the behaviour we are researching can be quantified and what quantification might mean for the underlying research question. What, for example, can be considered a unit of 'practice'? What will be considered 'acquisition'? How will these units be measured and interpreted?

However, constructs cannot be translated into concrete or operational form in an actual study or experiment until there are clear answers to the questions A and B. If the construct 'practice' is not clearly defined, it would be foolish to design and carry out research measuring this ill-defined idea. We might define 'practice' as the number of times a subject repeats a sentence from a language laboratory tape or as the number of self-generated sentences that a subject produces in a face-to-face communicative context. Each definition will produce different outcomes and different interpretations about the role of practice.

3. When is Deductive approach combined with Synthetic or Analytic approach?

2.5 □ Phase 4 : Formulating the research plan – the hypothesis

If the study is to be some form of heuristic research, this last phase will consist of deciding on appropriate procedures and designing methods for collecting data relating to a single factor or a synthesis of factors which may affect the rate of acquisition. Deductive research requires the demonstration of a clear relationship between the factor or variable which is thought to be closely related to or responsible for the rate of acquisition. A hypothesis is not supposed to lead to conclusions which cannot be tested further. So what is a hypothesis?

A hypothesis is a preliminary or tentative explanation or postulate by the researcher of what he considers the outcome of an investigation will be. It is an informed/ educated guess. It indicates the expectations of the researcher regarding certain variables. It is the most specific way in which an answer to a problem can be stated. The word hypothesis literary means 'a placing under,' from hypo 'under' + thesis 'a placing proposition'. Thus a hypothesis is a proposition that is consistent with known data, but has neither been verified nor shown to be false.

Why is a hypothesis formulated?

A hypothesis is formulated after the problem has been stated and the literature study has been concluded. It is formulated when the researcher is totally aware of the theoretical and empirical background to the problem. Before formulating a hypothesis, keep in mind the following:

- The purpose and function of a hypothesis.
- It offers explanations for the relationships between those variables that can be empirically tested.
- It should strive to furnish an acceptable explanation of the phenomenon.
- It must be verifiable.
- It must be formulated in simple, understandable terms.
- It should correspond with existing knowledge.

Types of hypotheses

Hypotheses can be classified in terms of their derivation (inductive and deductive hypotheses) and in terms of their formulation (research — directional and non-directional and statistical or null hypotheses).

Research hypothesis — it is a relationship between variables and indicates the nature of the relationship.

If A is valid, B follows If you hit a child with a cane, he/she will cry.

Schools in which pupil-teacher relations are open/ friendly will have less unrest than comparable schools where pupil-teacher relations are closed/ tense.

Null hypothesis - there is no difference between pupil - teacher relations in unrest schools and pupil-teacher relations in comparable schools which experience no unrest.

An important requirement for hypotheses is testability. A condition for testability is clear and unambiguous concepts.

A research hypothesis (in empirical research) has to do with relationships between empirical phenomena. The concepts in a research hypothesis must possess single references (indicator) or denotations to identifiable phenomena in reality.

Writing a good hypothesis requires formulating a question and answering that question specially and with many details before conducting the research to prove it.

4. What are the different types of hypotheses ?

The difference between a hypothesis and a problem.

Both a hypothesis and a problem contribute to the body of knowledge which supports or refutes an existing theory. A hypothesis differs from a problem. A problem is formulated in the form of a question. It serves as the basis or origin from which a hypothesis is derived. A hypothesis is a suggested solution to a problem (question) which cannot be directly tested. A hypothesis can be tested and verified.

Testing a hypothesis

Suppose we are given a value and told that it comes from a certain distribution, but we don't know what the parameter of that distribution is. Suppose we make a null hypothesis about the parameter. We test how likely it is that the value we were given could have come from the distribution with this predicted parameter.

The parameters of a distribution are those quantities that one needs to specify when describing the distribution. A normal distribution has parameters μ and σ^2 . Poisson distribution has parameter λ .

If we know that some data comes from a certain distribution but the parameter is unknown, we might try to predict what the parameter is. Hypothesis testing is about working out how likely our predictions are.

The null hypothesis, denoted by H_0 , is a prediction about a parameter. So if we are dealing with a normal distribution we might predict the mean or the variance of the distribution. We also have an alternative hypothesis, denoted by H_1 . We then perform a test to decide whether or not we should reject the null hypothesis in favour of the alternative.

For example, suppose we are told that the value of 3 has come from a Poisson distribution. We might want to test the null hypothesis that the parameter (which is the mean) of the Poisson distribution is 9. So we work out how likely it is that the value of 3 could have come from a Poisson distribution with parameter 9. If it's not very likely, we reject the null hypothesis in favour of the alternative.

5. What is the method of testing a hypothesis?

2.6 □ The research hypothesis and the null hypothesis

Question: Does the amount of practice affect the learner's rate of acquisition?

Let us assume that we have arrived at a satisfactory conceptual and operational definition of all the terms which are found in the question. The next step is to convert this question into a research hypothesis. The research hypothesis in this example might take one of the following forms:

- H1 Learners who exhibit high levels of practice will acquire at a faster rate than those who do not.
- H2 Learners who exhibit high levels of practice will acquire at a slower rate than learners who do not.
- H3 Learners who exhibit high levels of practice will acquire at the same rate as those who do not.

The first two hypotheses are 'directional'. They make prediction about the direction of the possible outcome of the research. The only problem with directional hypothesis is, it is very difficult to argue unambiguously for a specific factor causing the directional effect. The results may be due to high levels of practice, and may be due to other factors as well.

Since it is difficult to 'prove' a directional hypothesis conclusively, the research hypothesis is usually stated in the form of a null hypothesis. The third hypothesis, H3, is the null hypothesis. It states that no differences exist between the rate of acquisition of high level practitioners and low level practitioners. There are statistical tests which may then be applied to the data to show there is or is not a significant difference between the groups. If the null hypothesis cannot be rejected at a statistically significant level, that is, it cannot be shown that the high and low level practitioners are not different in rates of acquisition, then the research hypotheses (H1 and H2) are automatically rejected.

It is usually the hope of the researcher to reject the null hypothesis. If this hypothesis is rejected, it is interpreted as meaning that one of the other two research hypotheses is supported. Since it is unlikely that high levels of practice will lead to slower rates of acquisition, the rejection of H3 is assumed to provide indirect support for H1. In actual practice, the research hypothesis, being the focus of research, is not the hypothesis that is tested. A null hypothesis is formulated for the purpose of the research. It is usually a statement of what the research really hopes to disprove. It is stated so that its falsification or rejection will lead to acceptance of one of the research hypotheses.

Confirmation or rejection of the hypothesis is not the end of the research process. The outcome of the research is recycled back to the theory or hypothesis from which it emanated (Figure: 1.1), requiring an adjustment in the original theory or rethinking of the original hypothesis for the purposes of continued research.

6. What is the difference between a research hypothesis and a null hypothesis?
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2.7 □ Summary

In this unit we have learnt how to decide on an objective and how to formulate a hypothesis. These are important logics in developing a research idea in second language. Once you are through the four phases, you are already into the core of your research, on the work for the core chapters of your thesis.

2.8 □ Review questions

1. Which approach would you adopt to find out
 - a) A learner's attitude toward the language class, the teacher, or the materials.
 - b) A learner's aptitude for language.
 2. Decide on the objective — heuristic research or deductive research for:
 - a) Personality characteristics of a learner.
 - b) Cognitive characteristics of a learner.
 3. Write the research hypotheses and null hypothesis for:
 - a) The amount of practice which the learner engages in both in and out of the language class.
 - b) The kind of practice which the learner experiences — drill versus communicative use of the target language.
 4. Can there be combined research approaches for the following study? Write the question and explain.
 - a) A learner's first language.
 - b) A learner's second language.
-

2.9 □ Bibliography

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Module -2 — Unit 3 □ Data Collection and Primary Data

Structure

3.1 Objectives

3.2 What are data?

3.3 Primary data (and its types)

3.4 Summary

3.5 Review questions

3.6 Bibliography

3.1 □ Objectives

This unit introduces you to:

- ~ primary data
- ~ data collection through the observation method
- ~ personal interview
- ~ telephone interview
- ~ mail survey

3.2 □ What are data ?

In second language research, data might include *all behaviors observable* by the researcher in a language lesson, *sentences* of a specific type that learners utter in response to stimuli controlled by the investigator, or subjects' *opinions* about speakers of the second language. A review of second language research reveals that the term 'data' covers a wide variety of phenomena. Data can be of two kinds: primary and secondary. The data which is collected for the first time by direct observation is called primary data. The data which is obtained from existing records, publications, etc., is known as secondary data.

1. Define primary data and secondary data.

3.3 □ Primary data

The data which are collected from the field under the control and manipulation of an investigator is known as primary data. Primary data are useful for current studies as well as for future studies. Hence, it should be collected with utmost care. The different methods which are used for primary data collection are

- i. observation method
- ii. personal interview
- iii. telephone interview and
- iv. mail survey

3.3.1. Observation method

In the *observation method*, the investigator collects data through personal observations. Consider an example in which an investigator collects the data about the organizational climate in an organization through direct observation. In this study, the investigator will speak to the employees at different levels of the organization, observe the behaviour of the employees to assess the organizational climate.

Consider the case of work sampling in a shop floor to determine the standard time of a job which is manufactured by a set of machines. In such a study, the investigator observes the state of these machines through random sampling. The state of a machine may be either in working state or idle state. At the end of the study, based on the direct observations, the investigator will determine the standard time of the job, which is manufactured by a set of machines.

Continuous monitoring of stock exchange index and share prices movements through newspaper and magazines is an example of observational method which will help investment companies and individuals effective management of portfolios.

Generally, observation method of data collection deals with the recording of the speech behaviour of respondents/sampling units. In this method, the investigator will observe the behaviour of the respondents in disguise. Take the case of customers transacting with a bank. Here, the behavior of the customers like, patience while waiting, way of moving with the bank employees, helping fellow customers in filling different forms, informing the bankers if there is any excess credit in their pass books, returning excess currency to the cashier if given by him, opinion of the customers about the bank through their casual discussions, time spent in reading circulars in the notice board, etc.,

will be observed by the investigator. The identity of the investigator should not be revealed to the customers. If it is known to the customers, they may change their behaviour.

This method helps capture the behaviour of customers directly. But it is a time consuming and costly exercise. Also, it suffers from personal biases of investigators which will distort the findings.

3.3.2. Personal Interview

Personal interview is a survey method of data collection which employs a questionnaire. The components of the personal interview are the researcher, the interviewer, interviewee and the interview environment. Under the guidance of the researcher several interviewers will be sent with questionnaires to meet the respondents/ interviewees of the survey for seeking responses to the questions in the questionnaire under the defined interview environment. The environment is defined in terms of place, time and factors which will influence interviewees. Personal interview can be classified into door-to-door interview, executive interview, mall intercept surveys, self-administered questionnaires and purchase intercept technique.

In *door-to-door interviewing*, the interviewer will go to the residence of each selected respondents/ customers and obtain responses for the items in the questionnaire by direct interviewing with him/ her for customer goods or any other topic of study. This is a detailed in-depth survey method which seeks responses with better precision. It is a time-consuming and costly process.

Executive interviewing is same as door-to-door interviewing except that the interviewees are industrial executives and the products are industrial goods. This is a costly and time-consuming process. The average waiting time of the interviewers at the offices of the executives before commencing the interview process is too long because of the busy schedule of the executives.

Mall intercept interview is conducted in shopping complexes where a diverse spectrum of customers can be interviewed. The people who pass through that place will be used as respondents for filling the questionnaires. In this method, the interviewers are stationed in a particular place of an area and the people who come to that area will be sampled and served with questionnaires. Hence, it is a less costly and quick process.

In *self-administered interview*, the respondents will be issued with questionnaires and they will be asked to fill them on their own. This means that the interviewers will be absent while filling the questionnaires. This method has the advantage of removing interviewer's bias. But, the absence of the interviewer will make the respondents to assume some irrelevant responses for some open ended questions for which the respondents have limited knowledge/ doubt. It is a less costly and quick process.

Purchase intercept technique is a direct interviewing method in which the customers will be intercepted and interviewed after they select their items from the showroom. The main advantage of this method is that it will enable the buyers to have better recall and compare the product of interest with competing brands with greater accuracy since they are yet to complete the buying process. But, in this method, the sampling is restricted to the buyers who completed the selection of some items to buy. Hence, a complete randomized selection of sampling units is prohibited in this method.

3.3.4. Telephone Interview

Telephone interview is considered to be cost effective and dominant data collection method because of the following reasons:

- The travel time of interviewers is totally eliminated
- The cost of travel of interviewers is also eliminated
- Greater possibility of reaching the customers all over the geography
- Total time of conducting the interview of the sample is least when compared to other methods
- Greater possibility of random selection of respondents among the population having telephone connection
- There is a greater probability of reaching the respondent unlike the non response problems of personal interview

Though the telephone interview has many advantages, it has the following drawbacks:

- Impossible to employ visual aids
- Exclusion of population who are not having telephone connection
- Interviewee may discontinue conversation in the mid-way unlike the personnel in which there is greater probability of completing the interview fully because of the rapport developed between the interviewer and the interviewee through personal contact.

The components of the telephone interview are same as the personal interview, viz., the researcher, the interviewer, interviewee and the interview environment. The unique features of telephone interview are selecting telephone numbers, call outcomes, call timing and call report.

Selection of telephone numbers

Telephone numbers must be selected such that they cover the entire population of interest. The methods of selection of telephone numbers are as follows:

- Telephone directory reference
- Random-digit dialing
- Systematic random-digit dialing
- Plus-one dialing

The traditional method of selection of telephone numbers is the selection of numbers from telephone directory. The sampling frame is designed by randomly selecting telephone numbers from the respective telephone directories of different regions.

In random-digit dialing, without the help of telephone directory, the telephone numbers are dialed randomly by specifying area code and within each area code a randomly generated telephone number. This process is repeated till the required number of respondents are interviewed.

In systematic random-digit dialing, initially an area code and a telephone number are randomly selected. Then a constant number is added to the initial number to get the second number which is to be dialed. Similarly, the same constant number is to be added to the immediate preceding number generated to find the remaining required number of telephone numbers of the respondents.

The plus-one dialing is a directory assisted telephone interview. In this method of interview, the required number of telephone numbers is generated from one or more telephone directories. Then the constant '1' is added to say, each of the last four digits of each selected telephone number. This generates a new sample of telephone numbers. This sample may also contain the telephone numbers which are not present in telephone directories because the telephone numbers of new subscribers will be absent in telephone directories till they are updated. So, this method can overcome such deficiency.

Call outcomes

In telephone interview, the following outcomes of a call may be noticed:

1. The telephone is not in service.
2. The number dialed is busy.
3. No one answers the call.
4. The number dialed is a fax number.
5. Answering machine responds.
6. The call is responded by someone else instead of the targeted respondent.
7. The person belonging to the dialed number is not in the sampling frame.
8. The call is responded by the targeted respondent.

Following are important guidelines for handling call outcomes:

1. If the telephone is not in service, then eliminate that number from the sampling frame.
2. If the number dialed is busy, then contact that number later.
3. If the call is not answered by any one, try later.
4. If the number dialed is a fax number, give a fax to that number requesting to provide the respondent's telephone number and possible time of contact.
5. If the call is answered by an answering machine, then leave a message about yourself and the purpose of your call, and dial the same number later.
6. If the call is responded by someone else instead of the targeted respondent, then introduce yourself and brief about the purpose of your study and try that number later.
7. If the person belonging to the dialed number is not in the sampling frame, then eliminate that number once for all.
8. If the call is responded by the targeted respondent and if he/ she is free, conduct the interview; otherwise contact him/ her again at his/ her convenience.

Call timing

The timing of the calls should be such that maximum numbers of respondents are available for interview on first dialing. The respondents may be classified into working, non-working, and business groups.

For consumer survey, it is preferable to call the respondents belonging to all the three groups mentioned above in evening time during weekdays and day time during weekends. For survey relating to industrial marketing, the respondents belonging to a business group and part of working group should be called during 10 a.m. and 4 p.m. only on weekdays. The remaining part of the working group may be called during weekends.

Call report

It is a catalogue of events about telephone interviewing. The interviewer should record telephone numbers called, and for each number, the name of the respondent, call date and time, duration of the call, any special remark of the respondent etc., in the call report. This report is a kind of database for the interviewers which is served to manage the respondents who are yet to be interviewed.

3.3.5. Mail Survey

Mail survey is a data collection method in which questionnaires are mailed to potential

respondents who in turn fill and return them at their convenience. This method has the following advantages:

- Less cost of data collection
- Less time of data collection
- Wider coverage of population
- Better accuracy of data
- Absence of interviewer's bias

But it has the following drawbacks.

- The identity of the respondents is not known to the interviewers.
- The questionnaire may be filled in by the assistant/family members of the respondent.
- Some respondents may not return filled-in questionnaires.
- There may be delay from the part of the respondents in returning the filled-in questionnaires.

In mail survey, the researcher selects the required number of potential respondents of the study from mailing list/ mailing panel provided by some organizations. Then a carefully designed questionnaire is dispatched to each of the potential respondents. The mailing of questionnaires involves the following tasks:

- Selecting the type of envelope
- Determining the mode of postage
- Designing covering letter
- Deciding questionnaire length, content, layout and format
- Notification and follow-up details
- Type of incentive, if any, to be given to potential respondents.

In some cases, even before mailing the questionnaire, a notification is sent to the respondents which make them aware of the purpose of the study before hand. After mailing the questionnaires, reminders are to be sent to the respondents at predetermined intervals to speedup the matter.

If the response rate is very poor, then more reminders should be mailed to the respondents. In spite of this effort, if the response rate is low, to cope up with the deficit (number of respondents), either the personal interview or the telephone interview may be used.

As an alternative, a kind of extrapolation can be done based on the responses of the respondents who replied very late. These delayed respondents are equated to non-response type respondents for the purpose of extrapolation.

As an alternative to mail survey, with the emergence of communication facilities, one can use either *fax survey* or *Web survey*. In a fax survey, the questionnaire is sent to the respondents through fax. In turn, the respondents are expected to send the filled-in questionnaires through fax or mail. This method quickens the entire process. The success of this method relies on the infrastructural facilities available with the respondents. Hence, this is used only for the organizational respondents for whom such facilities are available. In the spirit of the study, organizations support their employees to use such facility. In a Web-based survey, the questionnaire is posted on a secure Web site. The invitation to participate in the Web survey would be posted on a company Web site which receives high traffic from target customers. If a customer visits that particular Web site and clicks that particular invitation banner, then the customer will be connected to the secure Web site, where a detailed interview is conducted. After finishing the interview, the customer is placed back to his/ her station. When compared to other methods, this one has the provision of even filtering nonsensical responses. It is considered to be the fastest method of data collection. But, the units of the sampling frame are limited to the customers who own computers or visit Web sites very often on rental machines.

2. Mention the type of data collection for the following:

- a) Continuous monitoring of stock exchange index and share prices movements through newspapers and magazines
- b) Purchase intercept technique
- c) Web-based survey
- d) Customers transacting with a bank

3.4 □ Summary

In this unit we have learnt about data and procedures of collecting primary data through the interview, observation and survey methods. After reading this unit in detail you can decide on which type of procedure you are going to use and how you would collect primary data for your specific research objective.

3.5 □ Review Questions

1. Define data with examples.
2. What are the methods of collecting primary data?
3. What is an observation method? Explain it with examples.
4. Classify and elaborate the different types of personal interview.
5. Discuss the features of a telephone interview.
6. What are the methods of selecting telephone number in telephone interview? Explain them.
7. What are the possible outcomes of call outcomes?
8. Write short notes on call timings.
9. What is a mail survey? What are the tasks in mailing questionnaires?

3.6 □ Bibliography

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Module -2 — Unit 4 □ Questionnaire Design and Data Presentation

Structure

- 4.1 Objectives**
- 4.2 Questionnaire Design**
- 4.3 Deciding question wording**
- 4.4 Questionnaire sequence**
- 4.6 Editing of primary data**
- 4.7 Data presentation**
- 4.8 Secondary data**
- 4.9 Summary**
- 4.10 Review questions**
- 4.11 References**

1.1 □ Objectives

This module will introduce you to the steps of designing a questionnaire and various data presentation tools. It is expected that your experience of working through all the sections and activities will help you to:

- understand and design a questionnaire that you may need for your research
- edit primary data
- know about sources of secondary data
- classify and present research data

4.2 □ Questionnaire Design

As mentioned in the previous unit, the different methods of primary data collection, viz., personal interview, telephone interview and mail survey come under survey methods.

The success of survey methods depends on the strength of the questionnaire used. A questionnaire consists of a set of well-formulated questions to probe and obtain responses from respondents. Though there is a variation in the form and content of questionnaires from situation to situation, the generalized steps of designing a questionnaire are the following.

Identification of research issues

The definition of research issues and related objectives is an important task while designing questionnaire because the content of the questionnaire mainly depends on these issues based on which measurements are made. Hence, they should be clearly identified and defined properly. If a researcher is not clear about the kind of measurements to be made, then the questionnaire will suffer from ambiguous questions. The answers to these questions will have no value for the study. So, the researcher should define different hypothesis for various issues of research which in turn help him/ her to decide about the measurements to be made.

1. What do you understand by the term 'identification of research issues'?
--

Formulation of questions and format

If the types of measurements to be made are clearly known, then the researcher can formulate necessary questions relating to each measurement. While formulating a question, its content should be such that each respondent grasps the intention of the question very quickly as originally thought by the researcher. This will minimize the distortion of the research focus. Also, the format of each question in relation to that of the overall questionnaire should be decided. The format of a question can be of three types:

- Open-ended questions
- Close-ended questions and
- Structured questions

Open-ended questions: in this type of question, the interviewer writes the answer of the respondent verbatim. In this type, there is no pre-coded classification of answers to the questions. For example, in a survey to find customer opinion on the interest rate of housing loan, a sample open-ended question without classification is as:

What are the reasons for availing housing loan?

The possible answer for this question may be:

Mainly to avail tax benefit and inculcate saving habit in me.

The open-ended questions may bring unconventional answers which are not known to the researcher. Generally, this type of question is used for probing type questions, introductory questions to get opinion about the components of the system of study, sensitive questions etc. if the number of alternative answers is many, then one can resort to this type of question. This is alternatively known as an *unstructured* question.

Though it has certain benefits, the answers to unstructured questions may not be realistic as expected if the respondents are not articulate and educated. In telephone interviews interviewers find it difficult to write verbatim the answers given by the respondents' open-ended questions.

Close-ended questions

Close-ended questions are structures questions. It has two formats.

1. Questions with multiple responses out of which the respondents have to select one or more choices
2. Questions with rating scale with discrete responses or continuous range

A sample format of the first type is as shown below:

What is the number of dependents with you?

- (a) none (b) one (c) two (d) three (e) four and above

A sample format of the second type is demonstrated based on the joint family system as follows:

Question: "Joint family system leads to better GDP of a nation." Please tick one of the following:

- (a) Strongly agree (b) Moderately agree
(c) Strongly disagree (d) Moderately disagree
(e) Neither agree nor disagree

An extreme form of close-ended question has only two responses. The respondent has to select one of these two responses which is demonstrated with reference to a study on consumer survey. This question has dichotomous responses. For example;

Have you used any one of our company's products?

- (a) Yes (b) No

2. Distinguish between open-ended and close-ended questions.
--

4.3 □ Deciding question wording

The wording of each question should fully convey its meaning to the respondents. The degree of the level of understanding varies from person to person. If questions are not easily understood by the respondents, they will respond with random answers to questions, which may distort the research findings.

Guidelines for question wording are as follows:

1. The vocabulary used should be simple, direct and familiar to all respondents.
2. The words of the question should not have vague or ambiguous meaning.
3. As far as possible each question should have a single part. Otherwise, the respondents will have difficulty in answering all the parts of the questions.
4. Questions should not be leading to answers which will suffer from biases.
5. Questions should be loaded with more interrelated items, which bring out the respondents, attitude and real opinion in the form of their responses.
6. The instructions of the questions should be clear.
7. The questions must be applicable to all the respondents in the sampling frame.
8. Keep the number of words of each question as minimal as possible.

3. Why is it important to decide on the question wording carefully?

4.4 □ Questionnaire sequence

After formulating necessary questions, they should be arranged in an appropriate sequence such that respondents are able to have better grasp of them and provide accurate responses. A preferred sequence of questions is:

- Initial questions should be screening and rapport questions. These questions relate to personal details of the respondents.
- Then in the second stage you ask all the research specific questions.
- Main body of the questionnaire should contain questions to obtain needed information.
- In the last stage you ask demographic questions.
- Questions should flow logically from one to the next.
- The researcher must ensure that the answer to a question is not influenced by previous questions.
- Questions should be from the more general to the more specific.

- Questions should be focused, relating to objectives and issues of the research.
- Questions should flow from the least sensitive to the most sensitive.
- Factual and behavioral questions should precede attitudinal and opinion questions.

4. What should the questionnaire sequence ensure?

Pre-testing of questionnaire

Once the questionnaire is ready, it should be pre-tested through a pilot survey involving the respondents in the proposed sampling frame. This exercise is mainly intended to test the degree of understanding the meaning of the questions, difficulty in understanding the questions by the respondents if the meaning of the questions is conveyed correctly, to check the relevance of the questions, to ascertain the interest of the respondents, etc. The purpose of pre-testing of questionnaire is to obtain information to improve its content, format and sequence. Based on the information, the questionnaire should be revised in its format, content and sequence for final use in the survey.

A SAMPLE QUESTIONNAIRE

Study on Teacher Expectations and Profiles of ELT Teachers in West Bengal

Teacher's personal profile:

1. Name:
2. Age: (a) 19-24 yrs (b) 25-35 yrs (c) 36-45 yrs
 (d) 46-55 yrs (f) More than 55 yrs
3. Gender: (a) Male (b) Female
4. Monthly household income:
 (a) Less than Rs 5000 (b) Rs. 5000-10000
 (c) Rs. 10000-15000 (d) Rs. 15000-25000
 e) More than Rs. 25000
5. Occupation:
 (a) Service sector (b) Government
 (c) Public (d) private
 (e) Coaching center

6. Institution: Please mention the name of your institute

(a) School

(b) College

(c) University

7. Qualification:

(a) School

(b) Undergraduate

(c) Graduate

(d) Postgraduate

(e) Doctorate

(f) Others

Data profile:

1. In your opinion, which is more important — literature teaching or language teaching? Why?

.....
.....

2. What do we actually teach when we teach a language?

(a) Language skills — listening, speaking, reading, writing

(b) Grasping and interpreting — texts (prose, poetry) according to the syllabus

(c) Comprehension, vocabulary, focus on pronunciation

(d) All of the above

3. Is there a purpose for need analysis (analysis of student needs) at the beginning of the course/ session?

(a) Yes

(b) No

4. Which do you think is a better way of teaching?

(a) traditional ways of teaching

(b) Communicative Language Teaching

5. Can we as teachers truly incorporate the principles of the communicative approach?

(a) Yes

(b) No

6. How do you plan your session or course?

.....
.....

.....

.....

7. Is there a need for a sequence in teaching the topics in the syllabus? Why?

.....

.....

8. How good are your students at English for practical purposes?

(a) letter writing - very good, good, fair, bad, very bad

(b) reporting - very good, good, fair, bad, very bad

(c) describing - very good, good, fair, bad, very bad

(d) writing resume - very good, good, fair, bad, very bad

(e) script writing - very good, good, fair, bad, very bad

9. Can your students perform everyday functions through English -

(a) Asking for information

(b) Making a request

(c) Giving instructions

(d) Apologizing

(e) Complaining

10. Have you taught English from the functional perspective?

(a) Yes

(b) No

11. Would you like to teach English the functional way?

.....

12. What are the key issues in second language acquisition?

.....

.....

.....

Thank you for your cooperation

4.5 □ Editing of Primary Data

After collecting the data from primary source, the next step is its editing. Editing means the examination of collected data to discover any error or mistake before presenting it. It has to be decided beforehand what degree of accuracy is wanted and what extent of errors can be tolerated in the inquiry. It is essential to review the answers of the respondents provided in the questionnaire from the angle of legibility, completeness, consistency and homogeneity.

Legibility

To transform the responses into useful information, the responses must be legible. The filling of questionnaires by some of the interviewers may not be legible. Under such situation, the research investigator should ask the respective interviewers to rewrite it or it can be corrected by the investigator with the knowledge of the interviewers.

Completeness

All the items in the questionnaire should have respondents' answers. But, some of the items may be unfulfilled. This may be due to the negligence of the interviewers while recording data or he/ she would have forgotten to ask such items. If it is due to the negligence on the part of the interviewers, then he/ she may be asked to recall the responses for those items from his/ her memory or from his/ her scratch pad. If no attempt has been made about those items, then the respective respondent may be approached again to seek his/ her responses for those items.

Consistency

The investigator should examine the data for consistency. The responses should be accurate and match the realistic figures. Sometimes there may be mismatch of responses of related items of the questionnaire. By applying logical analysis, one can easily identify such flaws and rectify them with interpolation or extrapolation of responses based on other answers. As an example, language teaching may not match with language learning. Under such a situation, the researcher should identify the true response out of the two responses—teaching a course and learning from a course— and estimate the other responses using either interpolation or extrapolation.

Homogeneity

The investigator should randomly check a sample of questionnaires collected by each interviewer for homogeneity of data. This means that whether the questions have been

understood in the same way by all respondents from the point of view of dimensions like, language acquisition and language learning. Similarly, there should be homogeneity in learning strategies. Here, two dimensions are involved, viz, the level and the method. In child language acquisition, these two dimensions should be kept in mind.

5. What do the following terms in editing of primary data mean?

Legibility -

Completeness -

Consistency-

Homogeneity-

4.6 □ Secondary Data

Secondary data from social sciences includes censuses, large surveys, organizational records and data collected through qualitative methodologies or qualitative research. Primary data, by contrast, are collected by the investigator conducting the research. In research, secondary data is collecting and possibly processing data by people other than the researcher in question. In sociology primary data is data you have collected yourself and secondary data is data you have gathered from primary sources to create new research. In terms of historical research, these two terms have different meanings. A primary source is a book or set of archival records. A secondary source is a summary of a book or set of records.

Advantages to the secondary data collection method are — 1) it saves time that would otherwise be spent collecting data, 2) provides a larger database (usually) than what would be possible to collect on ones own. However there are disadvantages due to the fact that the researcher cannot personally check the data so it's reliability may be questioned.

Secondary data are of two kinds, internal and external. Secondary data - whether internal or external — are data already collected by others, for purposes other than the solution of the problem on hand.

Internal sources of secondary data are student performance records, student activity, course expenditure information, student feedback etc.

External sources of secondary data are various government publications, foreign government publications, journals, books, magazines, newspapers, annual reports, research reports in universities, teachers' handbook, students' handbook, census data etc.

4.7 □ Data Presentation

After collecting data, they must be classified and presented in meaningful forms to have better insights of a research problem. Different tools of classification and presentation of research data are listed as follows:

- Frequency distribution
- Cumulative frequency distribution
- Relative frequency distribution
- Charts

4.7.1. Frequency Distribution

If data are of repeating nature, then they should be presented in forms of the number of occurrences of each value of the data of a particular type.

The frequency distribution can be classified into discrete frequency distribution and continuous frequency distribution which are demonstrated in Tables 4.1 and 4.2, respectively.

Table 4.1 Discrete Frequency Distribution

Standard	Number of learners (frequency)
Primary learner	300
Secondary learners	200
Higher secondary learners	100

Table 4.2 Continuous Frequency Distribution

Student performance (in class)	Number of students (frequency)
Average Primary students	20
Average Secondary students	30
Average Higher Secondary students	40
Good Primary students	60
Good Secondary students	30
Good Higher Secondary students	20

4.7.2. Cumulative Frequency Distribution

The cumulative frequency distribution is a modified form of frequency distribution, as shown in Table 4.3. In a given row, the value in the last column is the cumulative value of the frequencies shown in its last but one column up to that value.

Table 4.3 Cumulative Frequency Distribution

Student performance (in class)	Number of students (frequency)	Cumulative frequency
Average Primary students	20	20
Average Secondary students	30	50
Average Higher Secondary students	40	90
Good Primary students	60	150
Good Secondary students	30	180
Good Higher Secondary students	20	200

4.7.4. Relative Frequency Distribution

The relative frequency distribution is a modified form of frequency distribution, as shown in Table 4.4. In a given row, the value in the last column is the ratio between the frequency of that row and the total frequency.

Table 4.4 Relative Frequency Distribution

Student performance (in class)	Number of students (frequency)	Relative frequency
Average Primary students	20	$20/200 = 0.10$
Average Secondary students	30	$30/200 = 0.15$
Average Higher Secondary students	40	$40/200 = 0.20$
Good Primary students	60	$60/200 = 0.30$
Good Secondary students	30	$30/200 = 0.15$
Good Higher Secondary students	20	$20/200 = 0.10$

4.7.5 Charts

Data can be presented in graphical form (or charts), such as: pie chart, bar chart, stacked bar chart, histogram, frequency polygon and ogive curve.

Pie chart - this is a chart in which the area of a circle is divided into different sectors representing different learners, such that the angle of each sector is proportional to the frequency of the corresponding category. The data shown in Table 4.1 are shown in the form of a pie chart in Fig 4.1.

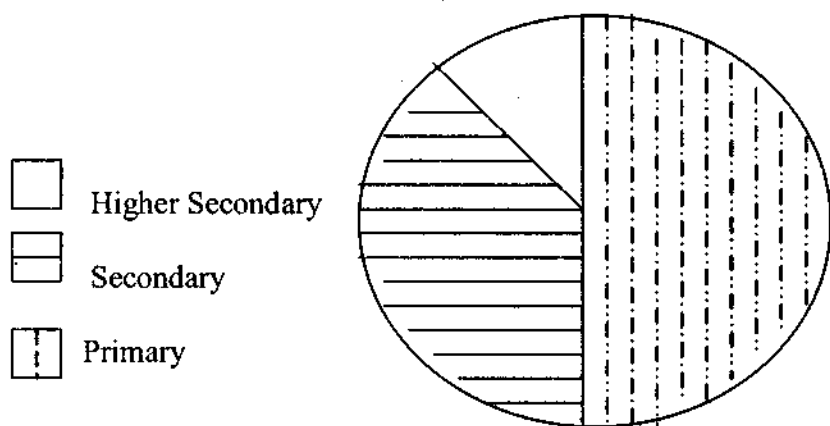


Figure 4.1 Pie Chart

Bar chart - *Bar chart* is a graphical view of the given data such that the frequency of each category is shown as a vertical strip against that category in proportion to the heights of other such vertical strips. The data shown in Table 4.1 are shown in the form of a bar chart in Fig. 4.2. In this figure, each category is taken on X-axis and a vertical bar corresponding to its frequency in proportion to other frequencies is marked in Y direction.

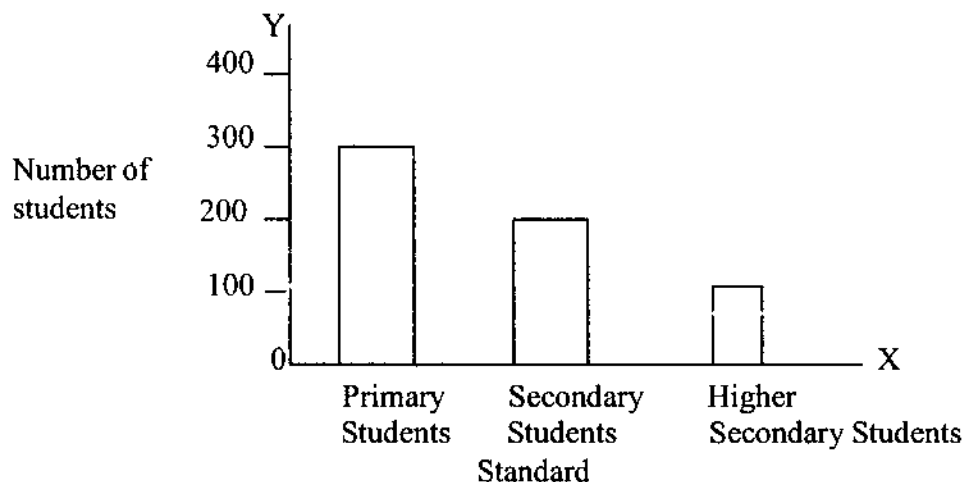


Figure 4.2 Bar chart of student standard

Stacked bar chart - *Stacked bar chart* is a graphical view of the given multiple data such that the frequency of each category of the multiple data is shown as an adjacent vertical strip against that category in proportion to the heights of other such vertical strips within that multiple data at each point on X-axis and across different points on X-axis. Consider the data, shown in Table 4.5.

Table 4.5 Discrete Frequency of Number of Respondents

Standard	Number of learners (frequency) <i>School 1</i>	Number of learners (frequency) <i>School 2</i>	(Number of Learners (frequency) <i>School 3</i>
Primary learners	300	500	600
Secondary learners	200	300	200
Higher secondary learners	100	200	100

The data shown in Table 4.5 are shown in the form of a stacked bar chart in Figure 4.3. In this figure, each category of standard is taken on X-axis and a vertical bar corresponding to the frequency of number of students of each region in each standard is shown as an adjacent vertical strip in that standard in proportion to other such frequencies which are marked in Y direction.

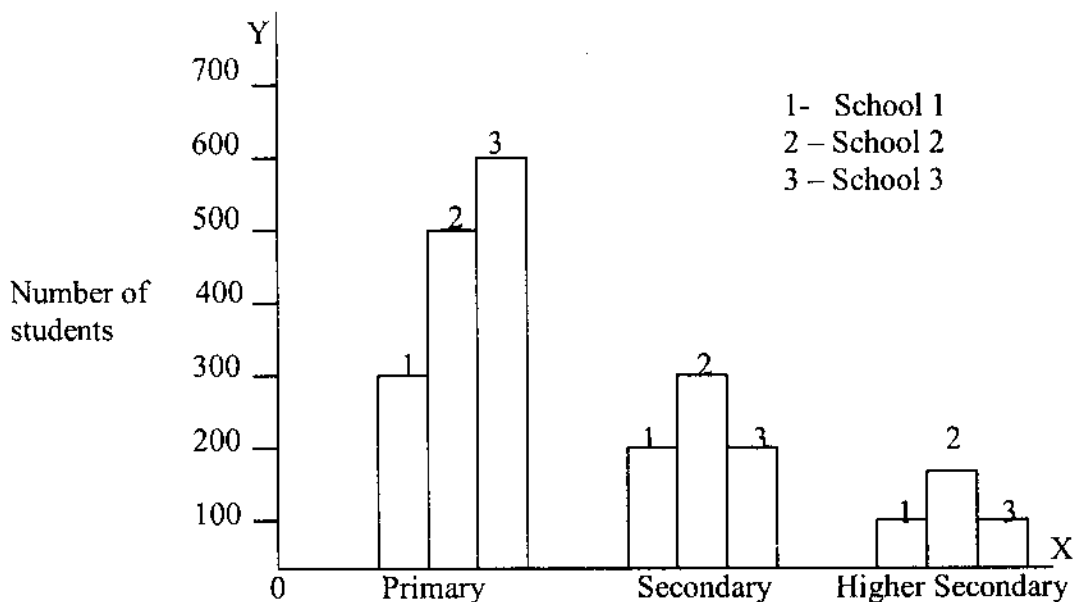


Figure 4.3 Stacked bar chart of number of respondents

Histogram - *Histogram* is a graphical view of the given data such that the frequency of each range of the variable of interest is shown as adjacent vertical strip against that category of students in proportion to the heights of other such vertical strips. The data shown in Table 4.2 is shown in the form of a histogram in Figure 4.4. In this figure, for each category, the corresponding vertical bar proportionate to its frequency is placed in Y direction over its category on X axis.

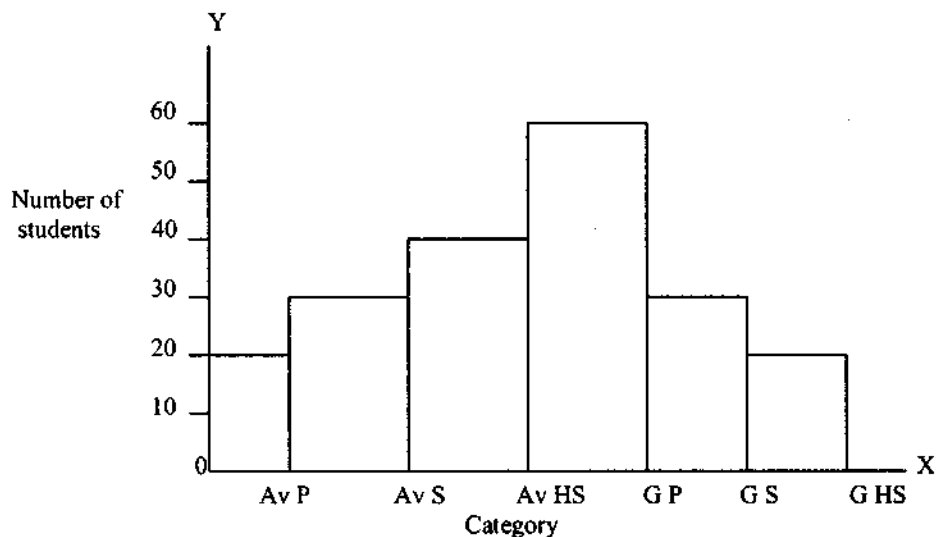


Figure 4.4 Histogram of student category

Frequency polygon - *Frequency polygon* is a line diagram connecting the mid-points at the top of different vertical strips of the histogram of a given problem. The data shown in Table 4.2 are shown in the form of a frequency polygon in Figure 4.5.

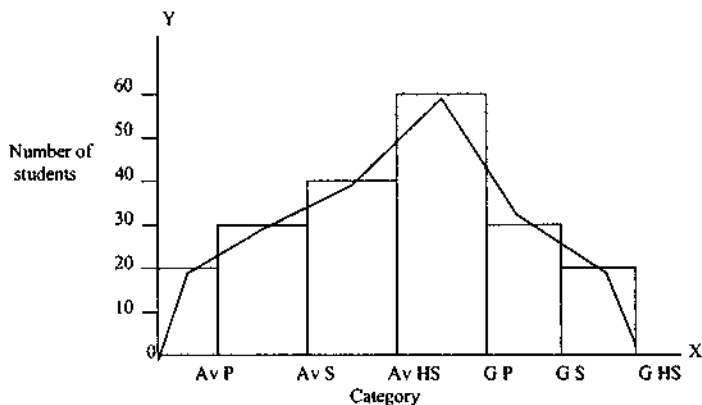


Figure 4.5 Frequency polygon of student category

Ogive curve- *Ogive curve* is a cumulative frequency curve. This can be classified into less-than-ogive curve and more-than-ogive curve. In less-than-ogive curve, there is an upper limit of each category (student performance), which is taken on X-axis in increasing order. For each such upper limit on X axis, the cumulative frequency of all the students is taken on Y axis. The data shown in Table 4.2 are converted into a form, which is suitable for less-than-ogive curve, as shown in Table 4.6. The corresponding less-than-ogive curve is shown in Figure 4.6.

Table 4.6 Cumulative Frequency Distribution for Less-than-ogive Curve

Student performance (in class)	Number of students (frequency)	Cumulative frequency
Below Average Primary students	20	20
Below Average Secondary students	30	50
Below Average Higher Secondary students	40	90
Below Good Primary students	60	150
Below Good Secondary students	30	180
Below Good Higher Secondary students	20	200

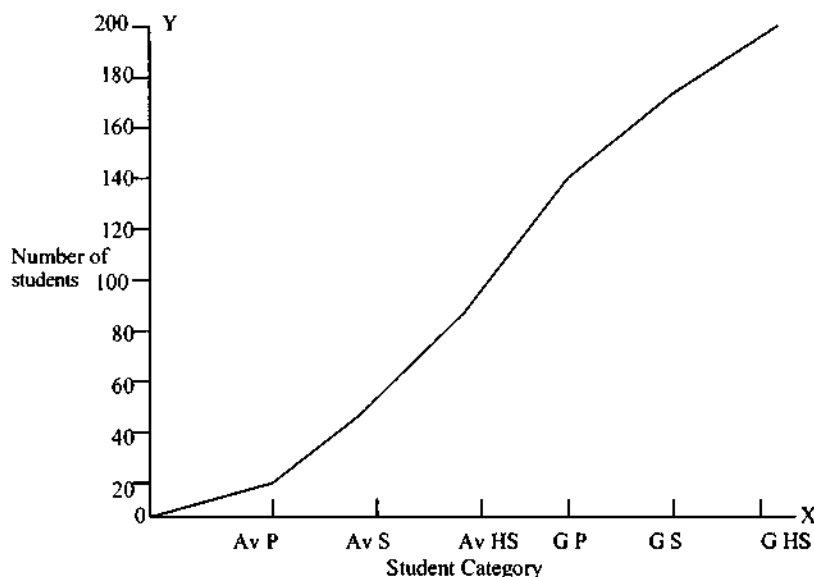


Figure 4.6 Less-than-ogive curve of student performance

In more-than-ogive curve, the lower limit of each category (student performance) is taken on X-axis in increasing order. For each such lower limit on X-axis, the cumulative

frequency of all the students is taken on Y axis. The data shown in Table 4.2 are converted into a form which is suitable for more-than-ogive curve, as shown in Table 4.7. The corresponding more-than-ogive curve is shown in Figure 4.7.

Table 4.7 Cumulative Frequency Distribution for More-than-ogive Curve

Student performance (in class)	Number of students (frequency)	Cumulative frequency
Above Average Primary students	20	200
Above Average Secondary students	30	180
Above Average Higher Secondary students	40	150
Above Good Primary students	60	110
Above Good Secondary students	30	50
Above Good Higher Secondary students	20	20

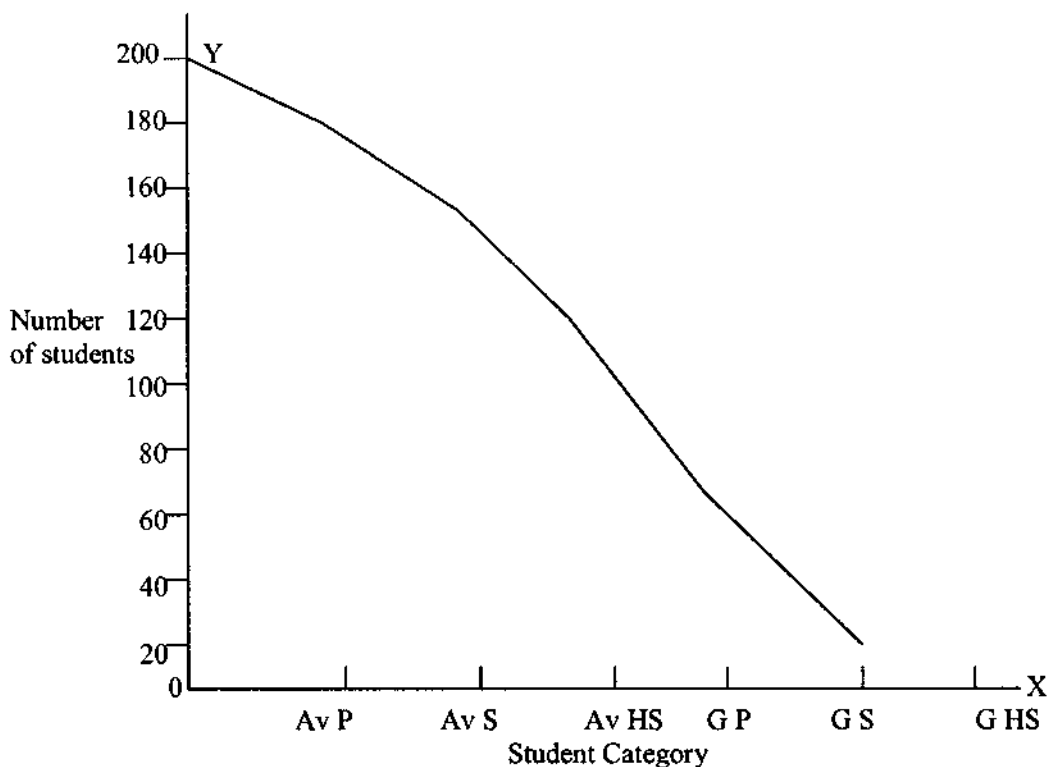


Figure 4.7 More-than-ogive curve of student performance

7. Match the following:

Frequency distribution

Relative frequency

Pie chart

Frequency polygon

Ogive curve

is the ratio of cumulative frequency & total frequency

Can be discrete or continuous

the angle each sector is proportional to the frequency of the corresponding category

can be classified into less-than and more-than

is a line diagram

8. Distinguish between

Bar chart, Stacked bar chart and histogram

4.8 □ Summary

In this unit we have tried to understand all the aspects of questionnaire design required for collecting data. In data presentation, we have learnt about frequency distribution and charts. For continuous frequency distribution, and frequency curve, one will need variables (digits) which are near the base at the terminals and towering in the middle. If you do not have this variable pattern then the tools for data presentation discussed here would not be applicable.

4.9 □ Review Questions

1. Discuss the steps of questionnaire design.
2. Why do you need to edit primary data?
3. What are secondary data? What are the internal and external sources of secondary data?
4. What are the data presentation tools?
5. What is frequency distribution? Give an example.
6. How can you get the cumulative frequency of a data? Give an example.
7. What is relative frequency?
8. Define histogram.
9. Explain cumulative frequency curves.
10. What are the points to be considered while deciding on the question wording in a questionnaire?

4.10 □ References

- Alston, Margaret and Wendy Bowles. 2003. *Research for Social Workers: An Introduction to methods*. Second Edition. New Delhi: Rawat Publications.
- Panneerselvam, R. 2005. *Research Methodology*. New Delhi: Prentice Hall of India Private Limited.
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Module -3 — Unit 1 □ Report Writing and Presentation

Structure

- 1.1 Learning objectives**
- 1.2 Introduction**
- 1.3 Types of report**
- 1.4 Guidelines for reviewing draft**
- 1.5 Report format**
- 1.6 Summary**
- 1.7 Review questions**
- 1.8 Bibliography**

1.1 □ Learning Objectives

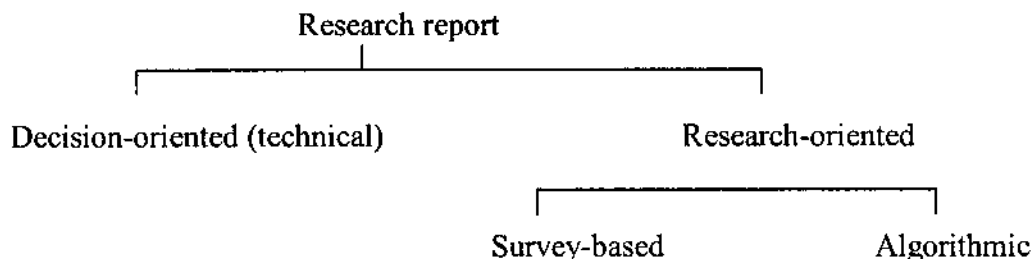
In this unit you will learn

- How to draft a research report
- About report format
- Organisation of chapters

1.2 □ Introduction

The purpose of conducting a research is to come out with inferences and suggestions. Generally, a research involves utilization of different types of resources. The outcome of the research should be well documented in the form of a research report for implementation and future use. The design and presentation of the research report involves a pre-specified sequence of steps which are presented in the following sections.

1.3 □ Types of report



1.3.1 Decision-oriented (Technical) Report

The steps of preparing decision-oriented report are presented below:

- i. Identification of the problem
- ii. Establishment of objectives
- iii. Generation of decision alternatives
- iv. Evaluation of decision alternatives
- v. Selection of the best decision alternative
- vi. Development of action plan
- vii. Provision for correction plan after implementation of the decision.

Problem identification is the process of selecting a problem which will give very good pay-off in terms of value addition to the organization. The objectives or criteria of the decision problem should be listed and finally a meaningful combination of the objectives is to be selected by taking the ground realities of the decision environment into account. The objectives/ criteria of the decision problem can be achieved by many ways. The researcher should list all meaningful decision, alternatives of achieving the set of criteria for the decision problem. Then, the best combination of the decision alternatives is to be selected such that the value/pay-off of the decision is maximized. The next step is to draw an action plan to implement the selected set of decision alternatives to achieve the objectives of the decision problem. Sometimes, there is deviation from the action plan while implementing the decision alternatives. So, the decision maker should be provided with a contingency plan of tackling such a situation.

1.3.2 Survey-based research report

The main body of the report for the survey-based research contains the following:

- i. Problem identification
- ii. Objectives of the research

- iii. Research methodology
- iv. Data analysis
- v. Interpretation of results and suggestions
- vi. Conclusions.

1.3.3 Algorithmic research report

Production scheduling, supply chain management, line balancing, layout design, portfolio management etc., are problems which exist in reality. The solution for each of the above problems can be obtained through algorithms. For a combinatorial problem, the researcher should attempt to develop an efficient heuristic. The algorithmic research report can be classified into the following categories:

- Algorithmic research report for combinatorial problem
- Exact algorithmic research report for polynomial problem.

Algorithmic research report with modeling for combinatorial problem

The main body of this type of research report will contain the following:

- i. Problem identification
- ii. Literature review
- iii. Objectives of the research
- iv. Development of mathematical model
- v. Design of algorithm
- vi. Experimentation and comparison of the algorithm with the model in terms of solution accuracy
- vii. Experimentation and comparison of the algorithm with the best existing algorithm (heuristic) in terms of solution accuracy.
- viii. Case study
- xi. Conclusions.

In this type of research, the results of the algorithm will be compared with the optimal results of the mathematical model as well as with the results of the best existing algorithm to check its solution accuracy through a carefully designed experiment (i.e. ANOVA). This type of report is mainly applicable for research on combinatorial problems.

Note: In a research related to combinatorial problems in a new and complex area, development of a mathematical model to obtain the optimal solution may not be easy. Under such a situation, the results of the algorithm (heuristic) should be compared with that of the best existing heuristic alone for checking its solution accuracy through a carefully designed experiment (ANOVA).

Exact algorithmic research report for polynomial problem

The main body of this type of research report will contain the following:

- i. Problem identification
- ii. Literature review
- iii. Objectives of the research
- iv. Design of exact algorithm
- v. Experimentation and comparison of the exact algorithm with the best existing exact algorithm in terms of computational time
- vi. Case study
- vii. Conclusions.

In a research related to polynomial problem, the researcher will have to develop an efficient exact algorithm in terms of computational time and compare it with the best existing exact algorithm for that problem through a carefully designed experiment. The comparison in terms of solution accuracy does not apply here because all exact algorithms will give optimal solution.

1.4 □ Guidelines for reviewing draft

The draft of the report should be reviewed for an appropriate number of times so that the errors are completely avoided. While reviewing the draft, certain guidelines are to be followed, as indicated below:

- The text of the report should be free from ambiguity.
- The text should convey the intended message.
- Because the readers are with different profiles, the style and presentation of the text of the report should suit the profile of the targeted group of readers; otherwise, the purpose of the report will be lost.
- The content of the report should fully reveal the scope of the research in logical sequence without omitting any item and at the same time it should be crisp and clear.
- The report should be organized in hierarchical form with chapters, main sections, subsections within main sections, etc.
- There should be continuity between chapters and also between sections as well as subsections.
- The abstract at the beginning should reveal the essence of the entire report which gives the overview of the report.

- The chapter on conclusions and suggestions is an enlarged version of the abstract with more detailed elaboration on the inferences and suggestions.
- A reading of abstract and conclusion of a report should give the clear picture of the report content to the readers.
- Avoid using lengthy sentences unless warranted.
- Each and every table as well as figure should be numbered and it must be referred in the main text.
- The presentation of the text should be lucid so that every reader is able to understand and comprehend the report content without any difficulty.
- The report should have appropriate length. The research report can be from 100 to 200 pages, but the technical reports should be restricted to 50 to 75 pages.

1.5 □ Report format

The outcomes of research works are to be conveyed to end-users or recorded for future use. The research efforts will be useful to end-users only when they are documented in the form of reports. So, a standardized format for the report will help researchers present their contributions and findings more systematically.

The different items of a research report are presented here.

1. Cover page
2. Introductory pages
 - Acknowledgements
 - Abstract
 - List of contents
 - List of tables
 - List of figures
 - List of variables
3. Text
 - Chapters
 - Main sections
 - Subsections
 - Footnotes
 - Conclusions
4. Bibliography
5. Appendices

1.5.1 Cover page

The cover page gives the title of the research, department/ faculty to which the thesis/ report is submitted, degree for which it is submitted, name of the researcher, name of the supervisor, university/ organizational emblem, name of the university/ organization and its address, month and year of submission. A sample cover page is:

**Development of New Efficient Heuristic for Deterministic
Assembly Line Balancing Problem**

A thesis submitted to the [University name]

for the award of the degree of

[Degree]

by

[Name of researcher]

Name of Supervisor

Designation

University Seal

University Name

Date

1.5.2 Introductory pages

Acknowledgements

In the process of carrying out any research, the researcher would have received help from different persons and organizations. So, all those helps should be acknowledged under this heading. In an academic research, a sample list of people who are to be acknowledged is as follows:

- Researcher supervisor
- Organizational head
- Colleagues of the department who rendered their valuable suggestions and criticism during the research period
- The executives in different organizations who provided data and literature for the research
- Any other help rendered by any body.

1.5.3 Abstract

Abstract gives the overview of the research report outlining the title of the research, objectives, shortcomings of existing literatures, need for further research, proposed measure of performance and research methods, results of comparison and highlights of inferences and a brief mention about a case study.

1.5.4 List of contents

List of contents is the catalogue of the research report which summarizes every aspect of the report. The table of contents of an algorithmic research report is shown in exhibit 1.2. The cover page and table of contents of a survey based research are shown in exhibit 1.3 and exhibit 1.4 respectively.

1.5.5 List of tables

In research reports, the data and results are presented in the form of tables for quick grasp. Each and every table must be numbered. The numbering should be such that it is internal to each chapter. For example, if the total number of tables in Chapter 4 is 10, then the numbering should be from Table 4.1 to Table 4.10.

1.5.6 List of figures

In research reports, the results are presented in the form of figures for better understanding and comparison. Each and every figure must be numbered. The numbering should be internal to each chapter. For example, if the total number of figures in Chapter 5 is 5, then the numbering should be from Fig. 5.1 to Fig. 5.5. Figures and charts help infer the relative comparison of results of a research study. The geographic locations and conceptual foundations of the research are also presented in the form of figures. Further, the decision making logic, algorithmic processing logic, etc., are presented in the form of figures to augment their stepwise presentation.

Exhibit 1.2. Table of contents of an algorithmic research report

	Page
Acknowledgements	iii
Abstract	v
List of Tables	vi
List of Figures	xii
1. Introduction	1-14
1.1 Production and Productivity	1

1.2	Assembly Line Balancing Problem	1
1.2.1	Description of Assembly Line	1
1.2.2	Line Balancing Problem	2
1.2.3	Definition of Assembly Line Balancing	3
1.3	History of Assembly Line Balancing	4
1.4	Classification of Assembly Line Balancing	5
1.4.1	Single Model Deterministic Problems	5
1.4.2	Single Model Stochastic Problems	6
1.4.3	Multi/Mixed Model Deterministic Problems	6
1.4.4	Multi/Mixed Stochastic Problems	6
1.5	Assembly Line Balancing Terminology	8
1.6	Benefits of Assembly Line Balancing	8
1.6.1	Technical Benefits	8
1.6.2	Economic Benefits	8
1.7	Methodologies to Solve Assembly Line Balancing Problems	9
1.7.1	Exact or Optimum Methods	9
1.7.2	Heuristic Methods	9
1.8	Need for the Current Study	9
1.9	Research Problem	10
1.10	Objectives of the current Research	11
1.10.1	Objective of Assembly Line Balancing Problem	11
1.10.2	Objective of the Research	12
1.11	Phases of Research	12
1.12	Findings	14
2.	Literature Review	15-62
2.1	Introduction	15
2.2	Single Model Deterministic (SMD) Assembly Line Balancing Problems	15
2.2.1	Optimum Methods or Single Model Deterministic Problems	15
2.2.2	Heuristic Methods or Single Model Deterministic Problems	20
2.3	Single-model Stochastic (SMS) Assembly Line Balancing Problems	29
2.4	Multi/Mixed Model Deterministic (MMD) Assembly Line Balancing Problems	38
2.5	Multi/Mixed Model Stochastic (MMS) Assembly Line Balancing Problems	43
2.6	Focus of this Research	60
2.7	Findings	62

3. New Efficient Heuristic (NEHU) for Assembly Line Balancing Problems	63-93
3.1 Introduction	63
3.2 Phases of NEHU	63
3.3 Types of NEHU	63
3.3.1 Heuristics for Assembly Line Balancing (HAL)	65
3.3.2 Composite Weight Factor (CWF) Heuristic	65
3.3.3 New Global Search Heuristic (NGSH)	67
3.4 Illustration of NGSH	70
3.5 Summary	93
4. Comparison of New Efficient Heuristic with HAL	94-99
4.1 Introduction	94
4.2 Design of Experiment	94
4.3 Model of Randomized Block Design	95
4.4 Inference	99
5. Case Study	100-108
5.1 Introduction	100
5.2 Turbo-chargers: An Introduction	101
5.3 Company Profile	102
5.4 Balancing the Assembly Line of Turbo-charger	102
5.4.1 Method Used	102
5.4.2 Input	102
5.4.3 Output	104
5.5 Inference	108
6. Conclusion	109-110
Annexure	111-197
I Generalized Algorithm	111
II Details of Test Problems	114
Bibliography	197-207
Index	209-210

Exhibit 1.3 Cover Page and Table of contents of Survey-based Research

A Study on Usage of Operations Research Techniques in Indian Industries

A thesis submitted to Alpha University in partial fulfillment

of the requirements for the award of the degree of Master of
Business Administration

by
D Janakiraman

Research Supervisor
G. Kumaraguru, Ph. D.
Professor

[University Seal]

Alpha University

January 2010

Exhibit 1.4 Table of Contents

	Page
Acknowledgements	i
Abstract	ii
List of Tables	iii
List of Figures	iv
1. Introduction	1-15
1.1 Operations Research	1
1.2 Interfaces of Operations Research	4
1.3 Operations Research - Productivity Improvement Tools	8
1.4 Score of Operations Research	10
1.5 Plan of Research	15
2 Literature Review	16-39
2.1 Techniques of Operations Research	18
2.2 Classifications of Operations Research	20
2.2.1 Deterministic Operations Research Techniques	26
2.2.2 Stochastic Operations Research Techniques	29
2.3 Operations Research Techniques in Indian Industries	35
2.4 Operations Research Softwares	38
2.5 Summary	38

3. Objectives and Hypothesis	40-55
3.1 Primary Objectives	40
3.2 Secondary Objectives	45
3.3 Formulation of Hypotheses	55
4. Research Methodology	56-101
4.1 Research Design	56
4.1.1 Design of Sampling Plan	59
4.1.2 Factors Affecting Implementation of Operations Research Techniques In Indian Industries	65
4.1.3 Design of Experiment	74
4.1.4 Design of Questionnaire	80
4.1.5 Determination of Sample Size	84
4.1.6 Design of Sampling Frame	94
4.2 Execution of Survey	100
4.3 Presentation of data	101
5. Data Analysis	102-143
5.1 Percentage Analysis	102
5.1.1 Pie Chart for Types of OR Techniques	108
5.1.2 Bar Chart for Number of Companies Using OR Techniques in industries	120
5.1.3 Bar Chart for Annual Budget for OR Implementation in Industries	140
5.1.4 Inferences	142
5.2 Statistical Analysis	144-169
5.2.1 Factorial Experiment to test the Effects of Factors Affecting implementation of OR Techniques	148
5.2.2 Regression Model to Estimate Incremental Revenue of Using OR Techniques	154
5.2.3 Ranking of OR Techniques in Terms of Value Addition	160
5.2.4 Testing of Hypothesis	165
6. Conclusions	170-188
6.1 Summary of the Findings	170
6.2 Conclusions	175
6.3 Suggestions for Future Research	185
Appendix	189-196
I Questionnaire	189

II Catalogue of OR Techniques	195
Bibliography	197-210
Index	211-215

1.6 □ Summary

In this unit we have learnt about report writing. This kind of format is for project reports, where one has a few months or 1-2 years research time. The different types of reports are for the kinds of topics one may have for the research. For research in Second Language, one may adopt decision oriented research, while for a topic related to Mathematical models and Linguistics, one may need algorithmic research report.

1.7 □ Review Questions

1. What can you make out from a research report?
 2. What are the types of report?
 3. What are the contents in a survey based report?
 4. What should you mention in the abstract of a project report?
 5. In exhibit 1.4, what is the need to annex the questionnaire to the report?
-

1.8 □ Bibliography

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Module -3 — Unit 2 □ Contextualization of research

Structure

2.1 Objectives

2.2 Introduction

2.3 Broadening the perspective and narrowing the question

2.4 Focusing on the relevant information

2.5 Locating the sources for literature review

2.6 Organising and reporting the review of literature

2.7 Reporting the literature review

2.8 Summary

2.9 Review questions

2.10 Bibliography

2.1 □ Objectives

This unit is on

- Review of literature in different stages of research
- Academic study skills and second language research

2.2 □ Introduction

Once the area, topic, or problem of the research has been chosen and defined, the research needs to be placed in a broader context by reviewing the related literature. This will be referred to as contextualizing the research. The reasons for contextualization of research are:

- a) it helps the researcher broaden the view and perspective of the research
- b) it helps the researcher to narrow down the topic and arrive at a focused research question

These two purposes which seem to be contradictory are actually complementary, because in research there is a need to both expand the perspective and to narrow it down in order to arrive at a workable research question.

Therefore a review of the literature should take place a number of times during the research process. In the preparatory phase it helps the researcher select an area, topic, or problem. In the second stage, once the topic has been selected, a thorough and systematic review of the literature is necessary to broaden the perspective of the research and to familiarize the researcher with the theoretical framework underlying the selected topic. Finally, the literature is reviewed once more when the researcher needs to narrow down the topic in preparation for the actual administration of the research. It should be noted, however, that in carrying out actual research these different purposes are not pursued in strict sequence.

2.3 □ Broadening the perspective and narrowing the question

Once the topic is selected, it needs to be expanded by investigating prevailing theories relating to it. During this stage, a researcher conducts a more thorough systematic review of the literature by examining and reviewing current theories in a number of related disciplines such as applied linguistics, linguistics, psychology, neurolinguistics, sociology and education. At this stage the researcher cannot simply rely on the bibliography list obtained in a university course, but needs to collect references from other sources as well. Indices such as *Resources in Education and Language and Language Behaviour Abstracts* are likely to include references to additional articles not encountered in the earlier literature review. A researcher may also conduct a computer search, to generate updated references on the topic and obtain a large pool of references.

In reviewing the literature, a researcher will have to make a decision on relevant and useful references by reading the abstracts that precede most articles. The recent articles which relate to the research topic should be reviewed first and then work towards less recent ones. Following this, other relevant areas may be explored. For example, if a researcher is working on acquisition of phonology by different learners in different learning contexts, then other relevant areas are: Studies on differences in the learning of other school subjects in formal versus informal contexts, work on the relationship between age and learning, cognitive, affective and neurological aspects of child development, and research on the rate of language acquisition of monolingual and bilingual learners of different ages. Readings in such areas will provide a better understanding of how different

aspects of language are acquired at different stages of development in a variety of learning contexts. In reviewing the literature a researcher may encounter research studies similar to the ones he/ she is planning to conduct. These will provide useful ideas to design ones own research.

1. What does the term 'Broadening the perspective and narrowing the question' mean?

2.4 □ Focusing on the relevant information

In reading the literature, a researcher may be interested to find out

- Why, where and who conducted the research?
- Whats were the underlying assumption?
- Which procedures and methodologies were used for collecting the data?
- The major findings of the research.
- How such studies added to the body of knowledge on the topic?

By getting acquainted with the relevant literature, a researcher obtains a comprehensive and broad understanding of the topic, and thus will be able to arrive at a clear and well defined question for conducting the research. For example, if much of the survey research focuses on the acquisition of phonology in informal contexts, it may provide a framework, or a rationale for conducting research on the effect of age on the acquisition of phonology in a formal context. The findings obtained in informal contexts are useful for creating hypotheses about another setting. If the literature review reveals that there are conflicting findings about the topic, this can provide a rationale for examining the same question from a different point of view, possibly with improved methodology, so as to offer more convincing findings and more clearly defined hypotheses. For example, if studies show that there is no direct relationship between age and the acquisition of phonology in informal contexts, the researcher could hypothesize that no direct relationship will be found in formal contexts either. Or, if in reviewing the literature on age, the researcher learns about the significance of the critical period in acquiring phonology in informal contexts, he may pose a research question which relates to the effect of age on children's learning ability before or after that period.

While reading, the researcher will summarize and keep records of all the above information. This includes use of index cards, or storing the information on a computer database and compilation of a bibliographic list which will be used for writing the literature review. To summarize, the process of contextualization helps the researchers to:

1. generate and select a research topic

2. expand and broaden their knowledge and perspective of that topic
3. arrive at a researchable and well-defined question for the research.

The literature review helps the researcher to realize that the problem she/ he is interested in is part of a larger body of knowledge. The review will also indicate whether there have already been important findings within this research area, whether there are still areas to be investigated, and whether the research that is about to be conducted is likely to add new information to that body of knowledge.

2. What points are to be kept in mind while focusing on relevant information?

2.5 □ Locating the sources for the literature review

As mentioned in section 2.3, material for literature review can be located within the second language acquisition discipline and in adjacent areas such as linguistics, education, psychology, sociology, or any other discipline considered relevant to the specific research topic.

Reading the literature

Once the material is located, the researcher needs to sift through it to determine its relevance to the specific research topic. It is important at this point to decide how much reviewing should be done, which reference should get more emphasis, and which aspects the researcher should focus on so that the material becomes meaningful for the contextualization of the research. Once the researcher has read the material she/ he must decide how the material should be organized, presented and reported in the literature review section.

Determining the relevance of the material

Many of the sources emerge during the process of enquiry. A fairly common situation is that the literature review becomes an unending path and the researchers find it difficult to stop. If the scope of the readings is too broad, the researcher may be discouraged and may lose the right perspective on the research, if it is too narrow, on the other hand, they may overlook studies which contain important and relevant information. However, the literature review never really ends, since the researchers will go on reading before, during and even after the study is finished. So it is important to set boundaries, which is determined by the relevance of the study material.

The initial decision is to determine whether or not the content of the report which the researcher reads is relevant to the research problem under study. If it is not relevant,

it can be deleted; if it is relevant, the information it contains must be summarized or put into a usable form so that it will be retrievable again when the researcher needs it later.

The most useful way for researchers to determine whether certain material is relevant or not, is through reading the abstracts which appear in most indices and which accompany articles. The descriptions in the abstracts provide useful information on various aspects of the material.

One criterion for determining relevance is the degree to which the content of the article is *directly related* to the topic of the research. Another criterion is the source of the report. Materials taken from journals are more relevant than secondary sources, such as report of another author on the research. Secondary sources should be used to obtain access to primary sources. Another criterion of relevance is the more recent research.

3. How is relevance of material determined?

Compiling and summarizing the information

Once the researcher has selected the relevant materials and deleted the irrelevant ones, each report needs to be compiled and organized. This phase includes a) compiling a bibliography list, and b) writing an abstract which contains the most important information of the report.

The bibliography list should be arranged alphabetically and each entry should contain the name(s) of the author(s), the title of the report, facts about publication, page numbers, and so on. If it is a journal article it should include the name of the journal, volume, and inclusive page numbers. If it is a book, it should include information about the publisher, and place and date of publication.

The abstract of each report should include the most important information of the report as well as criticism. It should be written in such a way as to be easily retrievable when the researcher has to write the literature review, which is usually arranged in alphabetical order and according to different sub-headings related to the research topic. It is recommended that each abstract be entered on a 3 x 5 card or preferably in the database of a computer. Word processor has facilities for compiling bibliography lists in databases according to a number of different categories.

The information in the abstracts should consist of a description of the most important points of the study, and the researcher should focus on points such as the reasons for conducting the research, the underlying assumptions of the study, the procedures and methodologies used for collecting data, the major findings of the research, the specific

new information which the study added to the research area, and a critical perspective of the research.

Table 3.2 provides a list of questions which researchers may find helpful in reading, summarizing, and criticizing research reports. The abstract should be brief, yet as accessible as possible when needed later in writing the literature report.

Table 3.2 Questions for reading, summarizing, and criticizing research

A. About the research topic

1. What is the main research area?
2. What is the research problem?
3. What are the major research questions or hypotheses?

B. About the research context

1. What other research studies were conducted in the same area?
2. What were their main findings?
3. What is the rationale of the research?
4. Why was it important to conduct the research?

C. About the research method

1. What are the main variables of the study?
2. Which research design was used? (experimental, correlational, descriptive, multivariate, ethnographic?)
3. Description of the population, sample, and selection procedures
4. The data collection procedures — information about their development, reliability, validity, pilot study
5. Description of the data collected

D. About the data analysis

1. What are the specific data analysis procedures used?
2. Were they quantitative or qualitative, or both?

E. About the findings

1. What were the main findings?
2. What does the researcher conclude from them?
3. How do the findings relate to the research context and to the underlying theories?
4. What are the implications of the findings?
5. What recommendations does the researcher make on the findings?
6. What recommendations are drawn from the results?

F. Criticism of the research

Consideration of A-E above and specifically:

1. the statement of the problem
2. the identification of the hypothesis
3. the description and definition of the variables
4. the appropriacy of the design of the study
5. the appropriacy of the instruments
6. the appropriacy of the data analysis procedures
7. the consistency of the results with the analysis
8. whether the conclusion, implications, and recommendations are warranted by the results.

Not all questions are applicable to all research reports

4. Match the following:

Research topic	Consistency of the results with the analysis
Research context	Recommendations drawn from the results
Research method	Qualitative or quantitative
Data analysis	Data collection procedures
Findings	Rationale of the research
Research criticism	Main research area

2.6 □ Organizing and reporting the review of the literature

After the material for the review has been collected, reviewed, and summarized, the researcher needs to synthesize it and write the review of the literature, to decide how to organize the information, and to compile the abstracts in the literature report.

Often the nature of the research problem determines the organization of the literature review. The review can be organized according to the amount of information bearing directly on the research problem, that is, each question or hypothesis of the research is substantiated by the relevant literature. For example, in the study on the relationship between age and second language learning which includes hypotheses about age and the sex of the learner, age and the language learning context, and age and the learning style, each of these hypotheses could be preceded by a review of the relevant literature.

Alternatively, the review can be organized according to the specific variables of the study. Thus in the same example, variables such as age (of children and adults) or

context (formal and informal) are addressed separately. All the variables are eventually integrated and lead to the final set of variables of the study, that of the relationship between age and second language learning in a formal context.

Another approach is to present the literature chronologically or historically. The researchers either begin by reviewing the least recent literature on the topic and move towards the more current research in the field, or present the most current research first and work back to the less recent material. For controversial research topics, the literature review can be reported in a way that represents the different points of view or different schools of thought, focusing on specific research studies which represent each of these groups.

5. What are the three approaches in organising a literature review?

2.7 □ Reporting the literature review

Once the material is organized, it is synthesized in a special section of the thesis entitled literature review. (See also Module 1 Unit 2). The following are two examples of reviews of literature reports taken from journal articles:

Example 1

In a study on the use of recall tasks (Lee 1986) the researcher first contextualizes the topic by describing the extensive use of recall tasks in second language acquisition research, and the types of task used. He then reviews the literature by reporting on a number of studies which resulted in variations in the results. The description of the extensive use of recalling in second language research and the variations that exist in the use of recalling tasks, provide the author with the rationale and purpose for conducting his study: 'Given the difference across research designs, the present study was intended to investigate the effect of certain variations in design. The following factors were tested: 1) planned versus unplanned recalls, and 2) recalling in L1 versus L2. To date, no direct comparison of recalls done in L1 has been made. No such study has been conducted for L2 reading.' (p. 204)

Example 2

A researcher (Dunkel 1988) conducted research on the relationship between context of L1 and L2 students' lecture notes and test performance. She contextualizes the research by describing the facilitative effects of taking notes in learning, the numerous programmes to teach these skills, the limited empirical knowledge as to the relationship between the

content of the subjects' notes and their test performance, and the lack of information as to what constitute 'good notes'.

She then continues with the literature review where she reports on a number of studies which investigated some of these issues.

The literature review is organized according to different topics: studies which examined the relationship between the content of notes and test performance, studies which attempted to determine how 'quality of notes' relates to the post-lecture recognition or recall performance, those which examined notes taken by college students and their grades in certain courses, and those studies which investigated student variables related to lecture notes.

The literature report, and especially the finding regarding gender differences between note-takers, leads the researcher to the rationale for her own study: 'If gender differences between note-takers exist, it is possible that there may be other differences attributable to ethno-cultural background or language proficiency among note-takers from different regions.' 'Such differences might provide important information concerning the note-taking strategies employed by these students as well as the relationship between the content of L1 and L2 students' notes and their comprehension and retention of English language lecture material Thus in light of the dearth of research concerning cross-cultural differences in students' notes, the complete lack of research on the content of L2 students' notes, and the increased pedagogical focus placed on training L2 students to develop listening and note-taking skill in English, a study was conducted to ...' (p. 263). Here she continues with a description of the purpose and plan of her own study.

In the above two examples, the researcher began by contextualizing her research problem. She then reviewed and reported on the relevant literature, organized according to different topics, and this led her to the rationale and purpose of her own study. More specific research questions followed, leading in turn to a description of the design of her research and the procedure used in conducting it.

2.8 □ Summary

In this unit we learnt about why we need to contextualize research. While locating sources for the literature, you may find a single source (library) is not enough. Then you need to locate libraries (at other Institutes located at your city or cities other than your place of research) where you will find your relevant reference materials.

The different sources for locating the literature are: references to existing material, such as indices, computer searchers and bibliographies, and the actual material such as

journal articles and reviews. We have learnt about the procedures for reading the literature in preparation for conducting research and ways of organizing it.

2.9 □ Review questions

1. What do you understand by the phrase 'broadening the perspective and narrowing the question' in contextualization of research?
 2. Research studies show, that age is correlated positively with the learning of grammar. The older the people are, the better they acquire grammar. Frame a research question on the statement.
 3. Younger children seem to have an advantage in acquiring phonology. How can you broaden the perspective for the topic.
 4. In what ways can the process of contextualization help researchers?
 5. What are the sources for the literature review?
 6. What are the criteria for determining relevance of the material?
 7. What is the procedure for organizing a review of literature? Discuss with an example.
-

1.10 □ Bibliography

- Dunkel, P. 1988. "The Content of L1 and L2 Student's Lecture Notes and its Relation to Test Performance" *TESOL Quarterly*, 22 : 259-281.
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Module -3 — Unit 3 □ Components of Research

Structure

- 3.1 Objectives**
- 3.2 Planning and organising the components of research**
- 3.3 Making predictions and controlling variables**
- 3.4 Making the research more effective**
- 3.5 Types of data and variables**
- 3.6 Internal and external validity**
- 3.7 Internal validity in heuristic research**
- 3.8 External validity**
- 3.9 Summary**
- 3.10 Review questions**
- 3.11. Bibliography**

3.1 □ Objectives

In this unit we will know about

- The research plan and type of research
- How to make predictions and control variables
- How to make the research effective
- Types of data and variables
- Internal and external validity

3.2 □ Planning and organising the components of research

From the beginning research must be guided by a plan. With a coherent plan, it would be possible to give concrete expressions to hypotheses which have been developed from general questions as well as to pursue answers to general questions. There is no one plan for researching a question but there are many possible plans and different research formats.

The nature of the question or hypothesis will determine which approaches and objectives are preferable.

One way to view research is to see it as the search for explanations of cause-and-effect relationships. Where one factor regularly varies in presence of another, we may be dealing with either a cause or an effect. Sometimes, we do not know what causes what; all we have is the co-occurrence of the phenomena. Another possibility is, that co-occurring factors may not be related at all and their co-occurrence is purely coincidental. One of the functions of statistical tests in research is to determine the degree to which the relationships found are significant or coincidental.

Rather than being concerned with trying to *predict* what will happen (A causes B), it may be sufficient to *describe* the phenomena or the patterns of their co-occurrence. In Module 1, Unit 4, we have noted that research might have either a heuristic or a deductive objective. In *heuristic* research, we claim that we do not know enough about the phenomenon or that a deductive approach is inappropriate because of the nature of the phenomenon being studied. We therefore attempt to describe it in order to *discover* possible underlying patterns or relationships from the description.

In heuristic research, procedures are used to gather data which are then organized according to patterns or a structure which emerges with the research. Because of this, heuristic research is more inductive and more likely to arrive at new insights into the phenomena being studied. Planning heuristic research is concerned with deciding how to collect or gain access to data. For example, in research describing the development of a sentence type in the interlanguage grammar of the second language learner, researchers, must attempt to decide in advance how the data will look. They must first decide on the best methods of collecting such data to see if instances of the target sentence type have been found.

In deductive research we make assumptions and try to predict cause-and-effect relationships or the co-occurrence phenomena. We attempt to support our predictions by designing an investigation, collecting data, and statistically examining the results. Deductive research is concerned with the problems of the control of the factors or variables of relationships and internal and external validity.

1. What are the procedures for heuristic and deductive research?
--

3.3 □ Making predictions and controlling variables

a) Independent and dependent variable

A single variable or *predictor* (Mill) predicts what will happen to a second single variable

to which it is related in some way. The predictor variable is called the *independent variable*. The variable about which predictions are made is the *dependent variable*. Variations in the independent variable predict corresponding changes in the dependent variable. Also, the independent variable is the factor or phenomenon which the investigator manipulates in order to see what effect any changes will have. The *dependent* variable is the means by which any changes are *measured*.

The following is an excerpt from a piece of published research (Genesee et al. 1983). The independent variable is enclosed in brackets [] and the dependent variable is italicized.

The present research tested the hypothesis that predictions concerning second language (SL) achievement and use would be improved by considering [the motivational support the learner expects from the target language group] ... The hypothesis was tested by asking adolescent English-speaking Canadian students why they were learning French as a second language and why French-speaking Canadians wanted them to learn English. Regression analyses were used to examine the relationships between the motivational predictors and *the respondents' SL proficiency and use*.

2. What is a predictor?

b) Other variables

For some research, the researcher may investigate more than one variable at a time and make multiple predictions concerning the interactions of the variables being studied. While the researcher may think only one independent variable is being studied, there may be other, unrecognized variables which might also explain the results found. Because of this, much research design and methodology is concerned with controlling or explaining the effects of variables that may not be the focus of the research but which can interfere with the outcomes of the research.

Hypothesis: there is a correlation between level of intelligence and performance on a language achievement test.

Let us suppose it is decided to test this hypothesis among children learning a second language in a school setting. What other factors (variables) might affect the outcome of the investigation? We shall assume that the children in the study are of the same language and cultural background. In addition, males and females play different sex-determined roles in educational settings. It is expected that males will be more daring, outgoing while females are introvert and more conformist.

It is decided that language ability will be measured with a language test which is very thorough and takes two hours to administer. The research will be conducted over a

period of approximately one school year. The children in the study are drawn from three different classes with three different teachers.

The factors or variables that play a role in this study might be the following:

1. The first language of the subjects
 2. The distribution of males and females in different classes being studied
 3. The ages of the children
 4. The teachers: personalities, teaching styles etc.
 5. Teaching methods used in different classes
 6. Settings in which the tests are taken
 7. How the tests are administered
 8. Who administers the tests
 9. The amount of time the test takes
 10. The effect of the passage of time on the subjects
 11. The problem of children moving to other classes or leaving the school before the study is completed.
-

Table 3.1 Other variables which might affect the hypothesis that IQ predicts success in second language learning

The variables listed in Table 3.1 can be categorized into the following four general categories in Table 3.2.

1. The independent variable: IQ scores
 2. The dependent variable: scores on a language test
 3. Subject variables: sex, age, reaction to testing, distribution of males and females
 4. Extraneous variables: teachers, method of language teaching, effect of time on subjects, attrition of subjects and so on.
-

Table 3.2 Four categories for variables

For the researcher, the first two categories of variables, the independent and the dependent, are the focus of the research. The *subject* and *extraneous* variables are those whose effects must be controlled so that they cannot be used as an explanation for the interaction between the independent and dependent variables. In language research, the role played by subject characteristics, the subject variable should be maintained as a separate category.

The allocation of any variable to one of the four categories is dependent on the focus of the research. For example, a characteristic associated with sex might become the independent variable in a different study, while the IQ might be transferred to the subject variable category.

3. How would you define extraneous variables?

3.4 □ Making the research more effective

Before the start of the research, the researcher can make certain that hypotheses will be tested validly or, in the case of heuristic research, data will be authentic and collected reliably. In non-experimental research, case studies, and qualitative research, the nature of the data may not be known until they are actually collected. For example, in a case study of a child acquiring a second language, there is no way to predict in advance what kind of utterances the child will produce. In other cases, the researcher may have some idea about the general characteristics of the data which will be collected and the kinds of questions which have been addressed by previous researchers. In these latter situations, it is important to consider ways to strengthen the reliability of the data. Some of the ways in which this can be done will be discussed in the following sections.

3.5 □ Types of data and variables

Different categories of variables contribute different kinds of data to the study. In Module 2, Unit 3 we discussed the nature of data from the conceptual perspective of how to define 'data' in second language acquisition. In this section we will discuss the operational definitions of data. Some kinds of data, such as test scores can be manipulated mathematically, while other kinds, such as sentences produced by learners cannot.

Qualitative data may be grouped into three types - *nominal*, *ordinal*, and *metric* (or *interval*). It is important to consider the question of data type because all of the procedures (collection, analysis, and the drawing of conclusions) are a function of the kind of data in the study.

The term *nominal data* refers to *names* or categories of phenomena which cannot be treated numerically in terms of such operations as computing averages. The purpose of a nominal categorization is to group subjects or instances of data according to some attribute. The separate categories in themselves have no necessary relationship to each other and cannot be added together to form a single pool of data. For example, if a

language class is made up of males and females, or students from Japan, Korea, France and Switzerland, we cannot speak about the average sex of the class or the average nationality. These nominal categories can play a significant part if the subject group is biased in the direction of one language or nationality. In second language studies, other typical examples of nominal data are grammatical classifications such as *past tense*, *-ing forms*, *article*, etc., or subject characteristics such as attitude type (instrumental or interrogative).

The fact that the category of nominal data does not lend itself to mathematical manipulation is important in decision about which type of research approach (synthetic/holistic or analytic) and objective (heuristic or deductive) to employ.

Ordinal data are data which can be *ordered* or *ranked* according to some hierarchical system such as test score, degree of presence of some characteristic, or the relative number of occurrences of some sentence type among a group of subjects. In addition, while different rankings can be compared statistically in various ways, the ranks themselves have no numerical value. Ranks have an ordinal value only when they are relative to other ranks. On the other hand, dichotomized nominal data such as attitude type cannot be treated as ordinal data because two categories cannot be ordered in any meaningful way. In ordinal data, the top rank will always be *one* regardless of what the score is. The difference between the first rank and the second will always be exactly one rank regardless of how different the scores are.

Nominal data can be treated as ordinal data if we group different nominal categories of the same type such as *past*, *-ing*, *article*, *possessive*, and create a single class such as *grammatical morpheme*. Each of the different morphemes might then be treated ordinally by being ranked according to frequency of occurrence in the production of language learners. This is possible because there are enough different grammatical morphemes to allow for ranking.

Metric or *interval data* are data which have numerical value and can be manipulated mathematically. If we are considering the actual scores of subjects on a test, or times on the performance of a task, these data can be averaged and manipulated arithmetically in order to find, how far from the average scores range, what the median point of the scores is etc. while we cannot speak of the average attitude of a language class, it is possible to add up all of the test scores on a language test and divide the total by the number of tests to arrive at an average score.

If data are treated as metric, then actual numerical values are important. For example, if the scores of subjects in an experiment are treated as ordinal data and *ranked* from highest to lowest, differences in scores from one rank to the next will not be an important consideration. If the scores are considered as numerical values and treated *metrically*, then the differences between the scores will become important to consider.

4. Complete the following sentences

Grammatical classifications such as past tense, -ing forms, article arecategories.

Nominal data can be treated as ordinal data if

Metric data can be

3.6 □ Internal and external validity

Any research can be affected by different kinds of factors which, while extraneous to the concerns of the research, can invalidate the findings. For this reason, translating research questions into conceptually consistent definitions and then operationalizing these concepts for the purposes of the research is important. If terms are not consistently defined and used in the research, the validity and the reliability of the results may be called into question.

Findings can be said to be *internally invalid* because they may have been affected by factors other than those thought to have caused them, or because the interpretation of the data by the researcher is not clearly supportable. They may be *externally invalid* because the findings cannot be extended or applied to contexts outside those in which the research took place.

3.6.1 Factors affecting internal validity

Sometimes the manner in which the research plan or experiment is conceived can affect the validity of the outcome. When the results of the research are deemed invalid because of the design or manipulation of some of the internal components that make up the research, this is considered a problem of internal validity. The major factors which affect the *internal validity* of research are:

-
1. Subject variability
 2. Size of subject population
 3. Time allotted for data collection or the experimental treatment
 4. Comparability of subjects
 5. History, attrition and maturation
 6. Instrument/ task sensitivity
-

Table 3.3 Factors affecting internal validity

3.7 □ Internal validity in heuristic research

Validity in analytic-deductive research is concerned with being able to demonstrate an unambiguous relationship between treatment effects and results. Synthetic-heuristic and analytic-heuristic research are concerned with many of the factors affecting internal validity discussed above. These approaches are also concerned with the ability to demonstrate unambiguously that phenomena have been observed and that the interpretation of these data is not dependent on the subjective judgment of an individual researcher. Validity in this sense is related to three areas: *representativeness*, *retrievability* and *confirmability* of the data.

5. Analytic-deductive research is concerned with.....

The three related areas of validity are.....

Representativeness

The degree to which observed data represent the normal behaviour of the second language learner is a factor, which can affect the validity of descriptions of that behaviour. The degree to which data are distorted by the research activity or the presence of the research may be seen as a measure of the invalidity of data. Research which is considered 'naturalistic' or 'qualitative' must be able to show that the act of research or the presence of an observer has not distorted the nature of the data collected.

Jacob (1987) provides an extensive review of different qualitative research traditions. He emphasizes the various measures that different kinds of heuristic methodologies adopt in order to ensure that the data collected are truly representative of the natural behaviour of the group. For example, the observer may actually participate in the activity, or less noticeable or intrusive methods of collection may be found.

Retrievalability

This aspect of validity refers to the researcher's access to the subjects' responses or to records or protocols of data, so that the same responses or behaviours may be inspected. Retrievalability is important so that records, protocols, and other forms of data can be repeatedly reviewed for analysis. The retrievalability of data can be increased by collecting it by some mechanical means, such as video or audio recording. Collected in this way, the original data are accessible for inspection by independent judges. However, measures

taken to make data more representative may conflict with measures necessary to make data retrievable. For example, the presence of video cameras in a language classroom may alter the behaviour, not only of the students, but also of the teacher.

Confirmability

This aspect of validation in heuristic research is related to representativeness and retrievability. Assuming that the data collected are representative of second language behaviour and that they are retrievable for continued inspection, confirmability is concerned with the ability of the researcher to confirm findings, either by re-inspection or by demonstrating the same findings through different sources.

This latter is referred to as 'triangulation' (Long 1983). It is not always possible to collect the same second language data using different sources. This is especially true in studies which use learner self reports as data for studying strategies or metacognition. For example, asking a learner to self-report or 'introspect' about a language error immediately after the act and again some time later is not drawing on the same source. In this case we could not use one kind of self-report to support the other. However, data drawn from observation or manual transcription could be confirmed by data drawn from video or audio tapes made at the same time as the observation.

6. Match the following

Representativeness	manual transcription, video or audio tapes
Retrievability	intrusive method of data collection
Confirmability	inspection of responses

3.8 □ External Validity

Internal validity is concerned with being able to state that the relationship between the independent and the dependent variables is unambiguous and not explainable by extraneous variables. A study may be said to have external validity if the findings can be applied or generalized to situations outside those in which the research was conducted.

Questions about the external validity of second language research relate to the categories of research are identified as basic, applied, and practical. Often the questions arise when applying findings from one type to another, but can also arise when the findings of two studies in the same category conflict.

I. Basic or applied to practical

This refers to the relationship between research and language teaching in general. Classroom practitioners expect language acquisition research to help them directly, that is, language acquisition research is viewed as applied science not as a basic science.

II. Basic to applied

This involves the relevance of a specific theoretical development to a particular aspect of language learning. For example, recent developments in theoretical linguistics suggest aspects of a universal grammar may determine the order in which a first language is acquired. Recent research in second language has attempted to apply these theoretical findings to understand the process of second language acquisition. In a sense, this research is testing the external validity of the theoretical claims.

III. Basic to basic or applied to applied

This involves the comparability of research findings, testing the same hypothesis but conducted under different conditions or using different research designs. For example, the critical period hypothesis applied to second language acquisition claims that adults beyond puberty will be unable to acquire the phonology of the second language to the point of having native speaker competence. One study may test this hypothesis by having native speakers judge taped interviews with non-native speakers (Oyama 1976). Another study may test this hypothesis by having non-native speakers produce phonetic segments under strictly controlled laboratory conditions (Olson & Samuels 1973).

7. Identify the categories of research for the following:

Language acquisition is basic science.

Universal grammar determines the order of first language acquisition.

Adults beyond puberty learning a second language are unable to acquire native like competence in phonology.

The question of external validity arises with regard to the degree to which the two studies are testing the same hypothesis and to what degree their findings are comparable and generalizable. Given that one study used interviews in a free discourse context and the other recorded controlled responses in a laboratory, are they in fact testing the same hypothesis? Can the findings of one study be used to contradict or support the other? Table 3.6 summarizes factors which can affect external validity.

-
1. Population characteristics
 2. Interaction of subject and research
 3. The descriptive explicitness of the independent variable
 4. The effect of the research environment
 5. Researcher or experimenter effects
 6. Data collection methodology
 7. The effect of time
-

Table 3.6 Factors affecting external validity

1. Population characteristics

In the discussion of internal validity, we stated that sample populations used in research are thought to be representative of a larger group with the same characteristics. In the case of external validity, we are concerned with the degree to which the sample population in the study has the same characteristics as the population to which the research findings are to be applied. Is the population used in the research a specific subset of the larger population? If the research is carried out with adults, can the findings apply equally well to children? In experimental research, the ability to perform a task may be dependent on the maturational or educational level of the subjects. Research which requires adult learners to respond in a manner dependent on adult cognitive abilities may not be generalizable to populations of child language learners. Research carried out with university students may not be valid when applied to foreign guest workers, even though both populations are adult.

2. Interaction of subject selection and research

One of the problems which all researchers experience is finding an adequate number of subjects. The problem is especially evident when subjects have to experience different treatments in an experiment or participate in a longitudinal study over an extended period. In most cases, experiments require subjects to take time from their normal schedules in order to participate. Because of this, subjects may be paid or asked to volunteer. In terms of external validity, to what degree do paid or volunteer subjects represent the general population to which the research will be generalized?

When the experimenter chooses the population for research, it may be claimed that the selection is random. In the case of volunteers, the question of self-selection arises. In studies dealing with second language, the affective learner variables are learning style, attitude and motivation and metacognition.

3. The descriptive explicitness of the independent variable

As we have noted previously in this unit, defining and operationalizing terms in a clear and consistent manner is important for both internal and external validity. In order for research findings to be either replicated or generalized to a broader population, the independent variable must be described as explicitly as possible. If the independent variable is a language teaching method, for instance not only must the components of the method be described, but also the conditions in which it was used, the characteristics of the teachers using it, and the size and nature of the classes.

The same is true if the independent variable is a language variable. If the study is concerned with the acquisition of relative clauses, what are the criteria for deciding whether the learner has produced a relative clause, a near-relative clause, or a sentence construction resembling a relative clause but intended to be something else? If these details are not available, replication and application of research findings are at best difficult.

4. The effect of the research environment

The fact that learners are aware that they are participating in a study may affect them in ways that will make their behaviour different from a population not participating in a study. Results in a study may be influenced by what is called the 'Hawthorne effect'. This effect is named after a manufacturing plant where it was found that workers in a study increased their production whether working conditions improved or worsened. When workers were interviewed, they reported that they increased their production in order to remain in the study because it brought them added prestige in the eyes of their fellow workers.

Second language learners may become more motivated simply because they are told that they are participating in a study that will help the researchers understand the process of language learning.

Example

In a study of participation patterns in the language classroom, observers sat in the back of the class and using a coded system, noted different types of turn-taking by the class members. The class members were not told of the purpose of the observation. One alert language learner noticed that the observer made marks on a paper whenever anyone seemed to speak. Not knowing what the marks were, he began to increase his turn-taking. When he saw that the observer noted his turn-taking, he increased even more.

In the example above, the learner was reacting to the fact that some aspects of his behaviour was being observed. It is possible that if the observers were present in the classroom over an extended period of time, their presence and their note-taking would become less obvious and less distracting to the learners, and would, in time, be ignored.

If there is a possibility that the research environment will distort the data in some way, longitudinal studies, conducted over a longer period of time, are preferable to cross-sectional studies, in which data are collected once and considered to be representative of data collected over a period of time.

5. Researcher or experimenter effects

This threat to the external validity of research stems from the possible effect of something which the researcher does either during the actual research or during the interpretation of subject behavior, while collecting or evaluating data.

For example, the researcher may unintentionally indicate to the subject the kind of response desired. In the examples on the effects of the research contexts, we stated that subjects may change their behavior when they become aware that they are participating in a study. The researcher may also inadvertently provide clues through changes in tone of voice, raising eyebrows, or other forms of body language.

6. Data collection methodology

In evaluating the external validity of a study, the method used to obtain the results must be considered. For example, data obtained through structured interviews may differ qualitatively from data gathered through a test, as in the examples of studies of the critical period hypothesis, at the beginning of the section on external validity. In the Oyama (1976) study, the data consisted of taped anecdotes which the subjects related to the researcher, while in the Olson and Samuels (1973) study, data were collected through a pronunciation test.

It would be difficult to compare the findings of these studies since each approached the problem in a different way. The studies could be compared to show how different methods and different approaches to the same research question can produce different methodologies and different results. A comparison might also show how different approaches can be difficult to claim that each was testing the same hypothesis.

The fact that findings obtained with different methods cannot be compared directly does not mean that one method is necessarily better than another. The diversity of second language research question implies that different methods may be equally valid in investigating a question. What the researcher has to keep in mind is that each method of data collection has underlying theoretical assumptions about the nature of data.

7. The effect of time

With reference to internal validity, the effects of experimental treatments or the appearance of target data may not always occur within the time-frame defined by the research plan.

There is, therefore, a possibility that the hypothesis may be rejected for the wrong reasons.

In applying this concept to external validity, we are concerned with the degree to which the time frame established by the research context can be extended to the real world to which the results of the research will be generalized. That is, will the results of the research be valid when they are applied to situations in which the conditions of time are not controlled and where, as in second language acquisition, the concern is with long-term change?

The question is especially important when a post-test is used as the dependent variable. The post-test may show that there is some significant difference between groups in an experiment. However, it may, in fact, be measuring short-term differences of recall after an experimental treatment. In real life, these seemingly significant differences between groups may disappear over the long term and considering external validity, it is important to define the type of learning measured by the dependent variable.

The time allotted for the research can have important effects both on the replication of research (the same time constraints should be observed) and on the application of research findings to non-research environments such as the language classroom. Since second language acquisition is a long-term process and language teaching is concerned more with long-term effects, the time elapsing between treatment and testing will have important implications for evaluating the external validity of the research. That is, the success of applying research findings to non-research environments will be affected by the time constraints within which the research itself was conducted.

3.9 □ Summary

This unit is concerned with the stage of research which begins after the research question or a hypothesis has been developed. Planning the research takes place after the focus or objective of the research has been identified. In synthetic or analytic-deductive research, planning requires the careful development of a plan to control and manipulate the independent, dependent, subject and extraneous variables.

Research which focuses on variables is of the deductive type. Heuristic research does not attempt to control or manipulate variables. Validity in heuristic research is more a question of the quality of the data collected, and is concerned with the representativeness, retrievability and confirmability of the data.

3.10 □ Review questions

1. Why do you need a plan for a research?

2. An ethnographer might be convinced that the only valid way to research a language question is by studying the language phenomena within natural contexts. The experimentalist may believe that only after the particular phenomenon has been totally isolated from other distorting factors, it can be adequately studied. What can you say comparing these two approaches?
3. State research plans for a heuristic and a deductive research.
4. How can you define a variable? What are the types of variables?
5. a) Whether a phenomenon is called independent or dependent depends on the role assigned to that phenomenon in research. - Do you agree with this statement?
b) In a research, if language teaching is an independent variable, then what are the dependent variables?
6. Let us assume that we suspect that a relationship exists between level of intelligence and success at language learning in a school environment.
a) Frame a hypothesis
b) Mention the independent and dependent variables
7. Give an example of basic to practical category of research.
8. What factors can affect external validity? Discuss with examples.
9. What could be different data collection methodology for studies on critical period hypothesis?
10. Compare heuristic and deductive research plans.

3.11 □ Bibliography

- Alston, Margaret & Wendy Bowles. 2003. *Research for Social Workers – An Introduction to Methods*. 2nd Edn. New Delhi : Rawat Publications.
- Cook, Vivian. 2001. *Second Language Acquisition Research and Language Teaching*. London : Arnold Publisher.
- Jacob, E. 1987. "Traditions of Qualitative Research : A Review." *Review of Educational Research*, 57 : 1-50.
- Olson, L. & Samuels, S. J. 1973. "The Relationship Between Age and Accuracy in Foreign Language Pronunciation." *Journal of Educational Research*, 66 : 263-267.
- Oyama, S. 1976. "A Sensitive Period for the Acquisition of Non-Native Phonological System." *Journal of Psycholinguistic Research*, 5 : 261-285.
- Seliger, Herbert W. & Elana Shohamy. 1989. *Second Language Research Methods*. Oxford : Oxford University Press.

Module -3 — Unit 4 □ Documentation : Preparing the List of Works Cited

Structure

- 4.1 Objectives**
- 4.2 Documenting Sources**
- 4.3 MLA Style**
- 4.4 The list of works cited and other source lists**
- 4.5 Format of the list of works cited**
- 4.6 Arrangement of entities**
- 4.7 Citing book and other non-periodical publications**
- 4.8 Summary**
- 4.9 Review questions**
- 4.10 Work cited**

4.1 □ Objectives

The purpose of this unit is to give you an idea of what documentation is and what are the procedures for documenting

- Books, an article in a book, an introduction, a book without publication information
- Pamphlets, published proceedings in a conference
- An unpublished dissertation
- Articles in journals, newspapers, magazines
- A review
- Non-print sources; an interview
- Different kinds of electronic publications

4.2 □ Documenting Sources

Documenting means showing where you got source information that's not your own. Remember, a research paper blends your ideas with ideas and information from other sources. Documentation shows the reader what ideas are yours and what information and ideas you've taken from a source to support your point of view. By correctly documenting, you establish your credibility as a writer and researcher. You're letting your reader know that you've consulted experts whose ideas and information back up your own thoughts and ideas.

As you prepare your paper, you should document your source by indicating what you borrowed — whether facts, opinions, or quotations, and where you borrowed it from.

Consequently, you make your viewpoint or argument more believable. If you don't document, you could inadvertently plagiarize. We have learnt about what to document in a paper, in the unit on plagiarism (Module 1 Unit 3).

4.3 □ MLA (Modern Language Association) Style

In MLA documentation style, you acknowledge your sources by keying brief parenthetical citations in your text to an alphabetical list of works that appears at the end of the paper. The parenthetical citations that concludes the following sentence is typical of MLA style.

The nineteenth-century scholar Wilhelm von Humboldt divided all the languages of the world into three types — 'inflectional', 'agglutinative' and 'isolating' (Palmer 55).

The citation "(Palmer 55)" tells readers that the information in the sentence was derived from page 55 of a work by an author named Palmer. If readers want more information about this source, they can turn to the works-cited list, where, under the name Palmer, they would find the following information.

Palmer, Frank. Grammar. England: Penguin Books Ltd., 1971.

MLA style is not the only way to document sources. Many disciplines have their own documentation systems. MLA style is widely used in humanities. Although generally simpler and more economical than other documentation styles, it shares with most others its central feature: parenthetical citations keyed to a works cited list. Documentation styles differ according to discipline because they are shaped by the kind of research and scholarship undertaken. For example, in the sciences, where timelines of research is

crucial, the date of publication is usually given prominence. In the style recommended by the American Psychological Association (APA), a typical citation includes the date of publication (as well as the abbreviation *p.* before the page number). Compare APA and MLA parenthetical citations for the same source.

APA

(Palmer, 1971, p. 55)

MLA

(Palmer 55)

In the humanities, where most important scholarship remains relevant for a substantial period, publication dates receive less attention: though always stated in the works-cited list, they are omitted in parenthetical references. An important reason for this omission is that many humanities scholars like to keep their texts as readable and as free of disruptions as possible.

In an entry for a book in an APA-style works-cited list, the date (in parenthesis) immediately follows the name of the author (whose first name is written only as an initial), just the first word of the title is capitalized, and the publisher's full name is generally provided. In APA style, the titles of books and journals are italicized.

APA

Marcuse, S. (1975). *A survey of musical instruments*. New York: Harper & Row.

By contrast, in an MLA style entry, the author's name appears as given in the work (normally in full), every important word of the title is capitalized, the publisher's name is shortened, and the publication date is placed at the end. A book title is underlined. In both styles, the first line of the entry is flushed with the left margin, and second and subsequent lines are indented.

MLA

Marcuse, Sibyl. A Survey of Musical Instruments. New York: Harper, 1975.

4.4 □ The list of works cited and other source lists

Other names for the list of works cited are *Bibliography* (literally, "description of books") and *Literature Cited*. Usually, however, the broader title *Works Cited* is most appropriate, since research papers often draw not only on books and articles but also on films, recordings, television programs, and other non print sources.

Titles used for other kinds of source lists include *Annotated Bibliography*, *Works Consulted* and *Selected Bibliography*. An annotated bibliography, also called *Annotated List of Works Cited*, contains descriptive or evaluative comments on the sources.

Thompson, Stith. *The Folktale*. New York: Dryden, 1946. A comprehensive survey of the most popular folktales, including their histories and their uses in literary works.

The title *Works Consulted* indicates that the list is not confined to works cited in the paper. The heading *Selected Bibliography*, or *Selected List of Works Consulted*, is appropriate for lists suggesting readings in the field.

4.5 □ Format of the list of works cited

The list of works cited appears at the end of the paper. Begin the list on a new page and number each page, continuing the page numbers of the text. For example, if the text of your research paper ends on page 10, the works-cited list begins on page 11. The page number appears in the upper right-hand corner, half an inch from the top and flush with the right margin. Center the title, *Works Cited*, an inch from the top of the page. Double-space between the title and the first entry. Begin each entry with the left margin; if an entry runs more than one line, indent the subsequent line or lines one-half inch (or five spaces on a key board) from the left margin. This format is sometimes called hanging indentation, and you can set your word processor to create it automatically for a group of paragraphs. Hanging indentation makes alphabetical lists easier to use. Double-space the entire list, both between and within entries. Continue the list on as many pages as necessary.

4.6 □ Arrangement of entries

In general, alphabetize entries in the list of works cited by the author's last name, using the letter-by-letter system. In this system, the alphabetical order of names is determined by the letters before the commas that separate last names and first names. Spaces and other punctuation marks are ignored. The letters after the commas are considered only when two or more last names are identical. The following examples are alphabetized letter by letter.

Descartes, Rene
De Sica, Vittorio

MacDonald, George
McCullers, Carson

Morris, Robert
Mortis, William
Morrison, Toni

Saint-Exupery, Antoine de
St. Denis, Ruth

If two or more entries citing coauthors begin with the same name, alphabetize by the last names of the second authors listed.

Scholes, Robert, and Robert Kellogg
Scholes, Robert, Carl H. Klaus, and Michael Silverman
Scholes, Robert, and Eric S. Rabkin

If the author's name is unknown, alphabetize by the title, ignoring any initial *A*, *An* or *The*. For example, the title *An Encyclopedia of the Latin-American Novel* would be alphabetized under *e* rather than *a*. An alphabetical listing makes it easy for the reader to find the entry corresponding to a citation in the text.

Other kinds of bibliographies may be arranged differently. An annotated list, a list of works consulted, or a list of selected readings for a historical study, for example, may be organized chronologically by publication date. Some bibliographies are divided into sections and the items alphabetized in each section. A list may be broken down into primary and secondary sources or into different research media (books, articles, recordings). Alternatively, it may be arranged by subject matter (literature and law, law in literature, law as literature), by period (classical utopia, Renaissance utopia), or by area (Egyptian mythology, Greek mythology, Norse mythology).

4.7 □ Citing books and other non-periodical publications

4.7.1 A book by a single author

One of the most common items in students' works-cited lists is the entry for a book by a single author. Such an entry characteristically has three main divisions:

Author's name. Title of the book. Publication information.

Here is an example:

Fukuyama, Francis. Our Posthuman Future: Consequences of the Biotechnology Revolution. New York: Farrar, 2002.

Author's name

Reverse the author's name for alphabetizing, adding a comma after the last name (Porter, Katherine Anne). Put a period (full stop) after the complete name.

Fukuyama, Francis.

Apart from reversing the order, give the author's name as it appears on the title page. Never abbreviate a name given in full. If for example, the title page lists the author as "Carleton Brown," do not enter the name as "Brown, C." but use initials if the title page does.

Eliot, T. S.

McLuhan, H. Marshall.

Similarly, you may give the real name of an author listed under a pseudonym, enclosing the added name in square brackets.

Le Carre, John [David Cornwell]

In general, omit titles, affiliations, and degrees that precede or follow names.

On Title Page

Anthony T. Boyle, PhD

Sister Jean Daniel

Gerard Manley Hopkins, SJ.

Lady Mary Wortley Montagu

Sir Philip Sidney

Saint Teresa de Jesus

In Works-Cited List

Boyle, Anthony T.

Daniel, Jean.

Hopkins, Gerard Manley

Montagu, Mary Wortley

Sidney, Philip.

Teresa de Jesus.

A suffix that is an essential part of the name - like Jr. or a roman numeral - appears after the given name, preceded by a comma.

Rockefeller, John D., IV.

Rust, Arthur George, Jr.

Title of the Book

State the full title of the book, including any subtitle, as given on the title page of the book. If the book has a subtitle, put a colon directly after the main title, unless the main title ends in a question mark, an exclamation point or a dash. Place a period after the entire title (including any subtitle), unless it ends in another punctuation mark. Underline the entire title, including any colon, and punctuation in the title, but do not underline the period that follows the title.

Fukuyama, Francis. Our Posthuman Future: Consequences of the Biotechnology Revolution.

Publication Information

In general, give the city of publication, publisher's name, and year of publication. Take these facts directly from the book, not from a source such as a bibliography or a library catalogue. The publisher's name that appears on the title page is generally the name to cite. The name may be accompanied there by the city and date. Any publication information not available on the title page can usually be found on the copyright page (i.e., the reverse of the title page) or at the back of the book. Use a colon between the place of publication and the publisher, a comma between the publisher and the date, and a period after the date.

Fukuyama, Francis. Our Posthuman Future: Consequences of the Biotechnology Revolution. New York: Farrar, 2002.

Here are some additional examples of the basic book entry:

Freedman, Richard R. What Do Unions Do? New York: Basic, 1984.

Tartar, Maria. Off with Their Heads! Fairy Tales and the Culture of Childhood. Princeton: Princeton UP, 1992.

The most possible components of a book entry and the order in which they are normally arranged are:

1. Author's name
2. Title of the book
3. Name of the editor, translator, or compiler
4. Edition used
5. Number(s) of the volume(s) used
6. Name of the series
7. Place of publication, name of the publisher, and date of publication
8. Page numbers

4.7.2 An Anthology or a Compilation

To cite an anthology or a compilation that was edited or compiled by someone whose name appears on the title page, begin your entry with the name of the editor or compiler, followed by a comma and the abbreviation ed. or comp.

Lopate, Philip, ed. The Art of the Personal Essay: An Anthology from the Classical Era to the Present. New York: Anchor-Doubleday, 1994.

Sevillano, Mando, comp. The Hopi Way: Tales from a Vanishing Culture. Flagstaff: Northland, 1986.

Spafford, Peter, comp. and ed. Interference: The Story of Czechoslovakia in the Words of Its Writers. Cheltenham: New Clarion, 1992.

4.7.3 Two or more books by the same author

To cite two or more books by the same author, give the name in the first entry only. Thereafter, in place of the name, type three hyphens, followed by a period and the title. The three hyphens stand for exactly the same name as in the preceding entry. If the person named edited, translated, or compiled the book, place a comma after the three hyphens, and write the appropriate abbreviations before giving the title. Works listed under the same name are alphabetized by title.

Borroff, Marie. Language and the Past: Verbal Artistry in Frost, Stevens, and Moore. Chicago: University of Chicago Press, 1979.

---, trans. Sir Gawain and the Green Knight. New York: Norton, 1967.

---, ed. Wallace Stevens: A Collection of Critical Essays. Englewood Cliffs: Prentice, 1963.

Frye, Northrop. Anatomy of Criticism: Four Essays. Princeton: Princeton University Press, 1957.

---, ed. Design for Learning: Reports Submitted to the joint Committee of the Toronto Board of Education and the University of Toronto. Toronto: University of Toronto Press, 1962.

---. The Double Vision: Language and Meaning in Religion. Toronto: University of Toronto Press, 1991.

---, ed. Sound and Poetry. New York: Columbia University Press, 1957.

4.7.4 A book by two or more authors

To cite a book by two or three authors, give their names in the same order as on the title page — not necessarily in alphabetical order. Reverse only the name of the first author, add a comma, and give the other name or names in normal form. Place a period after the

last name. If the persons listed on the title page are editors, translators, or compilers, place a comma (not a period) after the final name and add appropriate abbreviation (ed., trans., or comp., for "editors," "translators," or "compilers").

Eggin, Suzanne, and Diana Slade. Analysing Casual Conversation. London: Cassell, 1997.

Rabkin, Eric S., Martin H. Greenberg, and Joseph D. Olander, eds. No Place Else: Explorations in Utopian and Dystopian Fiction. Carbondale: Southern Illinois University Press, 1983.

If there are three authors, you may name only the first and add et al. ("and others"), or you may give all names in full in the order in which they appear on the title page.

Quirk, Randolph, et al. A Comprehensive Grammar of the English Language. London: Longman, 1985.

Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik. A Comprehensive Grammar of the English Language. London: Longman, 1985.

If a single author cited in an entry is also the first of multiple authors in the following entry, repeat the name in full; do not substitute three hyphens.

Scholes, Robert. The Crafty Reader. New Haven: Yale University Press, 2001.

---. Textual Power: Literary Theory and the Teaching of English. New Haven: Yale University Press, 1985.

Scholes, Robert, and Robert Kellogg. The Nature of Narrative. New York: Oxford University Press, 1966.

4.7.5 Two or more books by the same authors

To cite two or more books by the same authors, give the names in the first entry only. Thereafter, in place of the names, type three hyphens, followed by a period and the title. The three hyphens stand for exactly the same names as in preceding entry.

Durant, Will, and Ariel Durant. The Age of Voltaire. New York: Simon, 1965.

---. A Dual Autobiography. New York: Simon, 1977.

Gilbert, Sandra M. Ghost Volcano: Poems. New York: Norton, 1995.

Gilbert, Sandra M., and Susan Gubar. The Madwoman in the Attic: The Woman Writer

and the Nineteenth-Century Literary Imagination. New Haven: Yale University Press, 1979.

---, eds. The Norton Anthology of Literature by Women: The Tradition in English. 2nd ed. New York: Norton, 1996.

4.7.6 A book by a corporate author

A corporate author may be a commission, an association, a committee, or any other group whose individual members are not identified on the title page. Cite the book by the corporate author, even if the corporate author is the publisher.

American Medical Association. The American Medical Association Encyclopedia of Medicine. Ed. Charles B. Clayman. New York: Random, 1989.

National Research Council. Beyond Six Billion: Forecasting the World's Population. Washington: National Academy, 2000.

4.7.7 A work in an anthology

If you are citing an essay, a short story, a poem, or another work that appears within an anthology or some other book collection, you need to add the following information to the basic book entry.

Author, title, and (if relevant) translator of the part of the book being cited. Begin the entry with the author and title of the piece, normally enclosing the title in quotation marks.

Allende, Isabel. "Toad's Mouth."

But if the work was originally published independently (as, e.g., autobiographies, plays, and novels generally are), underline its title instead. Follow the title of the part of the book with a period. If the anthology contains the work of more than one translator, give the translator's name next, preceded by the abbreviation Trans. ("Translated by").

Allende, Isabel. "Toad's Mouth." Trans. Margaret Sayers Peden. A Hammock beneath the Mangoes: Stories from Latin America. Ed. Thomas Colchie. New York: Plume, 1992. 83-88.

Franco, Veronica. "To the Painter Jacopo Tintoretto." Poems and Selected Letters. Ed. and trans. Ann Rosalind Jones and Margaret F. Rosenthal. Chicago: University of Chicago Press, 1998. 35-37.

Hanzlik, Josef. "Vengeance." Trans. Ewald Osers. Interference. The Story of Czechoslovakia in the Words of its Writers. Comp. and ed. Peter Spafford. Cheltenham: New Clarion, 1992. 54.

"A Witchcraft Story." The Hopi Way: Tales from a Vanishing Culture. Comp. Mando Sevillano. Flagstaff: Northland, 1986. 33-42.

To cite a previously published scholarly article in a collection give the complete data for the earlier publication and then add Rpt. in ("Reprint in"), the title of the collection, and the new publication facts.

Frye, Northrop. "Literary and Linguistic Scholarship in a Postliterate Age." PMLA 99 (1984): 990-95. Rpt. in Myth and Metaphor: Selected Essays, 1974-88. Ed. Robert D. Denham. Charlottesville: University Press of Virginia, 1990. 18-27.

If the article was originally published under a different title, first state the new title and publication facts, followed by Rpt. of ("Reprint of"), the original title, and the original publication facts.

Lewis, C.S. "Viewpoints: C. S. Lewis." Twentieth-Century interpretations of Sir Gawain and the Green Knight. Ed. Denton Fox. Englewood Cliffs: Prentice, 1968. 100-01. Rpt. of "The Anthropological Approaches." English and Medieval Studies Presented to J. R. R. Tolkien on the Occasion of His Seventieth Birthday. Ed. Norman Davis and C. L. Wrenn. London: Allen, 1962. 219-23.

4.7.9 An article in a reference book

When citing familiar reference books, especially those that frequently appear in new editions, do not give full publication information. For such works, list only the edition and the year of publication.

Mohanty, Jitendra M. "Indian Philosophy." The New Encyclopaedia Britannica: Macropaedia. 15th ed. 1987.

"Azimuthal Equidistant Projection." Merriam-Webster's Collegiate Dictionary. 10th ed. 1993.

If you are citing a specific definition, among several, add the abbreviation Def. ("Definition") and the appropriate designation (e.g., number, letter).

"Noon." Def. 4b. The Oxford English Dictionary. 2nd ed. 1989.

4.7.10 An introduction, a preface, a foreword, or an afterword.

To cite an introduction, a preface, a foreword, or an afterword, begin with the name of its author and then give the name of the part being cited, capitalized but neither underlined nor enclosed in quotation marks (Introduction, Preface, Foreword, Afterword). If the writer of the piece is different from the author of the complete work, cite the author of the work after its title, giving the full name, in normal order, preceded by the word By. If the writer of the piece is also the author of the complete work, use only the last name after By. Continue with full publication information and, finally, the inclusive page numbers.

Borges, Jorge Luis. Foreword. Selected Poems, 1923-1967. By Borges. Ed. Norman Thomas Di Giovanni. New York: Delta-Dell, 1973. xv-xvi.

Coetzee, J.M. Introduction. The Confusions of Young Torless. By Robert Musil. Trans. Shaun Whiteside. New York: Penguin, 2001. v-xiii.

If the introduction, preface, foreword, or afterword has a title, give the title, enclosed in quotation marks, immediately before the name of the part.

Doody, Margaret Anne. "In Search of the Ancient Novel." Introduction. The True Story of the Novel. New Brunswick: Rutgers University Press, 1996.1-11.

4.7.11 An anonymous book

If a book has no author's or editor's name on the title page, begin the entry with the title. Alphabetize the entry by the title, ignoring any initial.

Encyclopedia of Virginia. New York: Somerset, 1993.

New York Public Library American History Desk Reference. New York: Macmillan, 1997.

4.7.12 An edition

Every published book is an edition. For example, a 2003 printing of Shakespeare's Hamlet was not prepared for printing by Shakespeare. An editor selected a version of Hamlet from the various versions available, decided on any changes in spelling or punctuation, and perhaps added explanatory notes or wrote an introduction. This 2003 version of Hamlet would be called an "edition," and the editor's name would most likely appear on the title page along with Shakespeare's.

To cite an edition, begin with the author (or the title, for an anonymous work) if

you refer primarily to the text itself; give the editor's name, preceded by the abbreviation Ed. ("Edited by"), after the title.

Austen, Jane. Sense and Sensibility. Ed. Claudia Johnson. New York: Norton, 2001.

Crane, Stephen. The Red Badge of Courage: An Episode of the American Civil War. 1895. Ed. Fredson Bowers. Charlottesville: University Press of Virginia, 1975.

Octovian. Ed. Frances McSparran. Early English Text Soc. 289. London: Oxford University Press, 1986.

Smith, Charlotte. The Collected Letters of Charlotte Smith. Ed. Judith Stanton. Bloomington: Indiana University Press, 2002.

If your citations are generally to the work of the editor (e.g., the introduction, the notes, or editorial decisions regarding the text), begin with the entry with the editor's name, followed by a comma and the abbreviation ed. ("editor"), and give the author's name, preceded by the word By, after the title.

Bowers, Fredson, ed. The Red Badge of Courage: An Episode of the American Civil War. By Stephen Crane. 1895. Charlottesville: University Press of Virginia, 1975.

4.7.13 A Translation

To cite a translation, state the author's name first if you refer primarily to the work itself; give the translator's name, preceded by Trans. ("Translated by"), after the title. If the book has an editor as well as a translator, give the names, with appropriate abbreviations, in the order in which they appear on the title page.

Beowulf. Trans. E. Talbot Donaldson. Ed. Nicholas Howe. New York: Norton, 2001.

If your citations are mostly to the translator's comments or choice of wording, begin the bibliographic entry with the translator's name, followed by a comma and the abbreviation trans, ("translator"), and give the author's name, preceded by the word By, after the title.

Seidensticker, Edward G., trans. The Tale of Genji. By Murasaki Shikibu. New York: Knopf, 1976.

Levi, Primo. Survival in Auschwitz: The Nazi Assault on Humanity. Trans. Stuart Woolf. New York: Collier-Macmillan, 1987. Trans. of *Se Questo e un uomo*. 1958.

4.7.14 A book with multiple publisher

If the title page lists two or more publishers — not just two or more offices of the same

publisher – include the first office and all the details in the order given, as part of the publication information, putting a semicolon after the name of each but the last.

Duff, J. Wright. A Literary History of Rome: From the Origins to the Close of the Golden Age. Ed. A. M. Duff. 3rd ed. 1953. London: Benn; New York: Barnes, 1967.

4.7.15 A pamphlet

Treat a pamphlet as you would a book

Washington, DC. New York: Trip Builder, 2000.

Renoir Lithographs. New York: Dover, 1994.

4.7.16 A Government Publication

Government publications emanate from many sources. If you do not know the writer of the document, cite as author the government agency that issued it — that is, state the name of the government first, followed by the name of the agency, using an abbreviation if the context makes it clear.

Great Britain. Ministry of Agriculture, Fisheries, and Food. Dept. of the Environment, Transport, and the Regions. Our Countryside, the Future: A Fair Deal for Rural England. London: HMSO, 2000.

United States. Cong. Joint Committee on the Investigation of the Pearl Harbor Attack. Hearings. 79th Cong. 1st and 2nd sess. 32 vols. Washington: GPO, 1946.

---. ---. Senate. Subcommittee on Constitutional Amendments of the Committee on the Judiciary. Hearings on the "Equal Rights" Amendment. 91st Cong., 2nd sess. S. Res 61. Washington: GPO, 1970.

---. Dept. of State. The Global 2000 Report to the President: Entering the Twenty-First Century. 3 vols. Washington: GPO, 1981.

If known, the name of the document's author may either begin the entry or, if the agency comes first, follow the title and the word By or an abbreviation (such as Ed. or Comp.).

Poore, Benjamin Perley, comp. A Descriptive Catalogue of the Government Publications of the United States, September 5, 1774-March 4 1881. US 48th Cong., 2nd sess. Misc. Doc. 67. Washington: GPO, 1885.

or

Unites States. Cong. A Descriptive Catalogue of the Government Publications of the United States, September 5, 1774-March 4 1881. Comp. Benjamin Perley Poore. 48th Cong., 2nd sess. Misc. Doc. 67. Washington: GPO, 1885.

4.7.17 The published proceedings of a conference

Treat the published proceedings of a conference like a book, but add pertinent information about the conference.

Freed, Barbara F., ed. Foreign Language Acquisition Research and the Classroom. Proc. of Consortium for Lang. Teaching and Learning Conf., Oct. 1989, U of Pennsylvania. Lexington: Heath, 1991.

Hualde, Jose Ignacio. "Patterns of Correspondence in the Adaptation of Spanish Borrowings in Basque." Proceedings of the Twenty-Fifth Annual Meeting of the Berkeley Linguistics Society, February 12-15, 1999: General Session and Parasection on Loan Word Phenomena. Ed. Steve S. Chang, Lily Liaw, and Josef Ruppenhofer, Berkeley: Berkeley Linguistics Soc., 2000. 348-58.

4.7.18 A Book in a language other than English

To cite a book published in a language other than English, give the author's name, title and publication information as they appear in the book. For a title in a script other than English, use letters of the Roman alphabet for the non-English words.

Sen, Sukumar. Bhasar Itibritta. 6th Edn. Calcutta : Ananda Publisher Pvt Ltd. 1998.

4.7.19 A book published before 1900

When citing a book published before 1900, you may omit the name of the publisher and use a comma, instead of a colon, after the place of publication. Segni, Benardo. Rettorica et poetica d' Aristotle. Firenze, 1549.

4.7.20 A book without stated publication information or pagination

When a book does not indicate the publisher, the place or date of publication, or pagination, supply as much of the missing information as you can, using brackets to show that it did not come from the source. The following ones are entries for actual books.

Bauer, Johann. Kafka und Prag. [Stuttgart]: Belser, [1971?]

Michelangelo. The Sistine Chapel. New York: Wings, 1992, N. pag.

Photographic View Album of Cambridge. [Eng.]: n.p., n.d., N. pag.

4.7.21 An unpublished dissertation

Enclose the title of an unpublished dissertation in quotation marks; do not underline it. Then write the descriptive label Diss., and add the name of the degree-granting university, followed by a comma and the year. To cite a master's thesis, substitute the appropriate label (e.g., MA thesis, MS thesis) for Diss.

Boyle, Anthony T. "The Epistemological Evolution of Renaissance Utopian Literature, 1516-1657." Diss. New York University, 1983.

4.7.22 Citing articles and other publications in periodicals (journals)

A periodical is a publication that appears regularly at fixed intervals, such as newspapers and magazines, or a scholarly journal. The entry for an article in a periodical, like that of a book is the following:

Hanks, Patrick. "Do Word Meanings Exist?" Computers and the Humanities 34(2000): 205-15.

Mann, Susan. "Myths of Asian Womanhood." Journal of Asian Studies 59(2000): 835-62.

McKenna, Bernard. "How Engineers Write: An Empirical Study of Engineering Report Writing." Applied Linguistics 18 (1997): 189-211.

The possible components of an entry for an article in a periodical and the order in which they are normally arranged are:

1. Author's name
2. Title of the article
3. Name of the periodical
4. Series number or name
5. Volume number
6. Issue number
7. Date of publication
8. Page numbers
9. Supplementary information

An article in a newspaper

To cite an English-language newspaper, give the name as it appears on the masthead but omit any introductory article. If the city of publication is not included in the name of a

locally published newspaper, add the city in square brackets, not underline, after the name:

For nationally published newspapers you need not add the city of publication. Next give the complete date - day, month, and year. Abbreviate the names of all months except May, June and July. Do not give the volume and issue numbers even if they are listed. If an edition is named on the masthead, add a comma after the date and specify the edition (e.g., natl. ed., late ed.).

Lahiri, Jayi. "E for English: Bojhar janya man diye shonata jaruri." Anandabazar Patrika Prastuti 18 Apr. 2011:2.

Gopnik, Blake. "Art and Design Bringing Fresh Ideas to the Table." Washington Post 21 Apr.2002: G1.

An article in a magazine

To cite a magazine published every week or every two weeks, give the complete date(beginning with the day and abbreviating the month, except for May, June and July), followed by a colon and the inclusive page numbers of the article. If the article is not printed on consecutive pages, write only the first page number and a plus sign, leaving no intervening space. Do not give the volume and issue numbers if they are listed.

Weintraub, Arlene, and Laura Cohen. " A Thousand-Year Plan for Nuclear Waste." Business Week 6 May 2002: 94-96.

A review

To cite a review, give the reviewer's name and the title of the review (if there is one); then write Rev. of (neither underlined nor enclosed in quotation marks), the title of the work reviewed, a comma, the word *by*, and the name of the author.

Bordewich, Fergus M. Rev of Once They Moved like the Wind: Cochise, Geronimo, and the Apache Wars, by David Roberts, and Brave Are My People: Indian Heroes Not Forgotten, by Frank Waters. Smithsonian Mar. 1994: 125-31.

"The Cooling of an Admiration." Rev of Pound/Joyce: The Letters of Ezra Pound to James Joyce, with Pound's Essays on Joyce, ed. Forrest Read. Times Literary Supplement 6 Mar. 1969: 239-40.

An anonymous article

If no author's name is given for the article you are citing, begin the entry with the title. "Dubious Venture." Time 3 Jan. 1994: 64-65.

To cite an entire special issue of a journal, use the following form:

Somin, Ilya. "Do Politicians Pander?" State Autonomy. Spec. issue of Critical Review 14.2-3(2000): 147-55.

4.7.22 Citing non print sources: An Interview

To cite an interview that you conducted, give the name of the person interviewed, the kind of interview (Personal interview, Telephone interview, E-mail interview), and the date or dates.

Pei, I. M. Personal interview. 22 July 1993.

Poussaint, Alvin F. Telephone interview. 10 Dec 1998.

Rowling, J. K. E-mail interview. 8-12 May 2002.

4.7.23 Citing electronic publications

Citations of electronic sources and those of print sources should accomplish the same ends and have analogous formats.

Ross, Don. "Game Theory." 11 Sept. 2001. Stanford Encyclopedia of Philosophy. Ed. Edward N. Zalta. Fall 2002 ed. Center for the Study of Language and Information, Stanford University. 1 Oct. 2002 <<http://plato.stanford.edu/entries/game-theory/>>.

Ideally, the URL of the exact document you consult should be given. Sometimes, however, the URL of the document is so long and complicated that reproducing it would invite transcription errors. In such instances, it is preferable to give instead the URL of the site's search page, if such a page exists. Once there, the reader can readily access the document by keying in other publication facts recorded in the citation (e.g., author's name, title). For example, JSTOR assigns the following URL to a 1998 article by Nancy Tolson in African American Review:

<http://links.jstor.org/sci?sici=10624783%28199821%2932%3A1%3C9%3AMBATRO%3E2.0.CO%3B2-2>

To reproduce such a URL, simply give the URL of the data base's search page.

Tolson, Nancy. "Making Books Available: The Role of Early Libraries, Librarians, and Booksellers in the promotion of African American Children's Literature." African American Review 32 (1998): 9-16. JSTOR. 1 Oct. 2002 <<http://www.jstor.org/search>>.

The list below shows the possible components of an entry for an Internet publication and the order in which they are arranged.

1. The name of the author, editor, compiler, or translator of the source (if given), reversed for alphabetizing and if, appropriate, followed by an abbreviation, such as *ed.*
2. Title of the article, poem, short story, or similar short works in the Internet site (enclosed in quotation marks). Or title of a posting to a discussion list or forum (in quotation marks), followed by the description *Online posting*
3. Title of the online book
4. Name of the editor, compiler, or translator of the text, preceded by the appropriate abbreviation, such as *Ed.*
5. Publication information for any print version of the source
6. Title of the Internet site (e.g., scholarly project, database, online a professional or personal site with no title, a description such as *Home Page*)
7. Name of the editor of the site (if given)
8. Version number of the source (if not part of the title) or, for a journal, the volume number, issue number, or other identifying number
9. Date of electronic publication, of the latest update, or of posting
10. For a work from a subscription service, the name of the service and — if a library or consortium of libraries is the subscriber— the name and geographic location (e.g., city, State, abbreviation) of the subscriber
11. For a posting to a discussion list or forum, the name of the list or forum
12. The number range or total number of pages, paragraphs, or other sections, if they are numbered
13. Name of any institution or organization sponsoring the site
14. Date when the researcher accessed the source
15. URL of the source or, if the URL is impractically long and complicated, the URL of the site's search page. Or, for a document from a subscription service, the URL of the service's home page, if known, or the key word assigned by the service, preceded by *Keywords*; or the sequence of links followed, preceded by the *Path*.

Here are some examples of the basic entry for document from internet sites:

"City Profile: San Francisco." CNN.com 2002. Cable News Network. 14 May 2002 <
<http://www.cnn.com/Travel/atevo/city/SanFrancisco/intro.html>>.

"Symbiosis." UCMP Glossary. Ed. Allen Collins et al. 1 May 2002. U of California
Museum of Paleontology, Berkeley. 15 May 2002
<<http://www.ucmp.berkeley.edu/glossary/gloss5ecol.html>>.

"This Day in Technology History: August 20." History Channel.com. 2002. History
Channel. 14 May 2002 <http://historychannel.com/>. Path: Technology History; This
Day in Technology History.

4.7.25 Different kinds of electronic publications:

- Entire Internet sites (online scholarly projects, information databases, professional and personal sites)
- Online books
- Articles in online periodicals
- Publications on CD-ROM, diskette, and magnetic tape
- Works published in more than one medium
- Works from online subscription services
- Publications in an indeterminate medium
- Other electronic sources (e.g., audiovisual materials, manuscript and working papers, e-mail communications, online postings)

4.8 □ Summary

After going through the details of documentation, you have learnt that one must be careful and patient while preparing the list of references for a research report. The proper documentation of the references will provide the readers all the resource materials you have consulted and in turn will prove the authenticity of your research. You must not refer to any material in your reference list which you have not consulted. Only refer to those which you have.

At the beginning of your thesis you may mention which documentation style (MLA or APA) you have followed and which edition, throughout your write up and for the Bibliography.

4.9 □ Review Questions

1. What are the points you need to keep in mind while preparing the works cited list?
2. Write the documenting format of the following:
Name of the book: Semantics
Author: Geoffrey Leech
Place of Publication: England
Publisher: Pelican Books
Year of publication: 1974
3. Which documentation information is missing in the following:
A Pelican Original - New Horizons in Linguistics edited by John Lyons.
4. Can you document the following?
Penguin Reference books - United Kingdom, Australia, New Zealand, South Africa, Canada
Mind the stop - G. V. Carey
The Penguin English Dictionary - G. N. Garmonsway
Roget's Thesaurus - Revised, modernized and abridged by Robert A. Dutch

1.10 □ Work Cited

Gibaldi, Joseph. MLA Handbook for Writers of Research Papers. 6th Edn. New Delhi: Affiliated East-West Press, 2003.

Module -4 — Unit 1 □ Research Paper : A Form of Communication

Structure

- 1.1 Objectives**
- 1.2 Introduction**
- 1.3 Choosing a topic**
- 1.4 Format of a research paper**
- 1.5 Preparing slides**
- 1.6 Presentation skills**
- 1.7 Summary**
- 1.8 Review questions**

1.1 □ Objectives

While writing your thesis you need to write and publish articles in academic journals. In this unit you will learn

- How to choose a topic for a research paper
- Specific guidelines on the format of a research paper
- How to present your work in power point

1.2 □ Introduction

A topic is what the research paper is about. It provides a focus for the writing. But the important thing to remember is that you should stick with just one major topic per research paper in order to have a coherent piece of writing. In this unit we will discuss how to choose a topic, the format of a research paper and how to make a power point presentation.

1.3 □ Choosing a topic

Here there are two possibilities. First, the supervisor provides a list of topics, viewed

worthy by him from which the student has to choose one. In the second possibility, the student himself offers a topic which appears interesting and manageable to him and seeks the guide's approval.

For the second possibility, you have to think about possible topics. Begin by defining a general area of your interest. This may come from a passion of yours, a topic you explored in a previous class, a topic you find puzzling or odd or a required topic for a seminar. Brainstorming is a successful way for students to get some of these ideas down on paper. Seeing one's ideas in writing is an impetus for the writing process. In Brainstorm or the 'starburst' phase of research you are thinking about many issues within a general area of interest. Begin reading on various issues within a general area of interest that leads you to other ideas. Once you have your topic, write it as a short sentence or question and look at the different components that make up your statement.

To make your research a success, you will have to ensure that the topic is strong. Pick something your supervisor finds interesting and is knowledgeable about. Pick a topic that will be helpful in your career path. If your goal is an academic career, pick a topic that you can modify into journal articles or a book. If you want to work at a teaching oriented institution, consider a topic you can use in the classroom. If you are going into industry, choose a topic that will make you more marketable. Ask yourself this: how will my topic sound when I discuss it at an academic interview?

Ask yourself the following questions:

Are you really interested in the topic?

What do you already know about the topic?

Is there enough information about the topic?

Will you be able to collect primary data on the issue?

Do you have the skills or knowledge to complete the investigation?

Will your supervisor or the audience be interested in your topic?

Will this topic keep your interest for the time it will take to complete the project?

It is helpful to start with a broad topic and narrow it down to a theoretically and empirically interesting research question. Keep in mind that you will spend four months developing and researching a topic for an independent study and a year for writing a thesis. Brainstorming is effective when a selected topic is a narrow one. It consists of a timed writing during which the researcher jots down in a list or bulleted form any idea that comes to mind. At the end of the period you may pursue this list for patterns of consistency.

1.4 □ Format of a research paper

The objective of writing a research paper is to allow readers to read your work effectively. Research on a specific topic includes methods, specific result, interpretations. All journals have their own manuscript format rules for the writers.

Specific editorial requirements for submission of a manuscript are the following guidelines:

To make a paper readable

- Print or type using a 12 point standard font - such as Times.
- Text should be double spaced on 8 1/2" X 11" paper / A4, with 1 inch margin, single sided.
- Number pages consecutively.
- Start each new section on a new page.
- Adhere to recommended page limits.

Mistakes to avoid

- Placing a heading at the bottom of a page with the following text on the next page.
- Dividing a table or figure — confine each figure/ table to a single page.
- Submitting a paper with pages out of order.

In all sections of your paper

- Use normal prose including article (a, the etc).
- Stay focused on the research topic of the paper.
- Use paragraphs to separate each important point (except for the abstract).
- Indent the first line of each paragraph.
- Present your points in logical order.
- Avoid informal wordings, don't address the reader directly, and don't use slang terms or superlatives.
- Avoid use of superfluous pictures — include only those figures necessary to present results.

Generally, the sections of a research paper are: title of the article, abstract, introduction, methodology, results and discussions, conclusions, and bibliography.

Writing an *abstract*

Write the abstract after the rest of the paper is completed. Summarize the study, including the following elements in any abstract. Try to keep the first two items to no more than one sentence each.

- Purpose of the study - hypothesis, overall question, objective
- A brief description of the study
- Results, including specific data — if the results are quantitative in nature, results of any statistical analysis
- Important conclusions or questions that follow from the experiment(s).

Style of an abstract

- Single paragraph and concise
- As a summary of work done, it is always in past tense
- An abstract should stand on its own, and not refer to any other part of the paper such as a figure or table
- Focus on summarizing results — limit background information to a sentence or two, if absolutely necessary
- What you report in an abstract must be consistent with what you reported in the paper

Introduction

The purpose of an introduction is to acquaint the reader with the rationale behind the work, with an intention of defending it. It places your work in a theoretical context, enables the reader to understand and appreciate your objectives.

Writing an introduction

- Describe the importance (significance) of the study— why was this worth doing in the first place? Provide a broad context.
- Defend the problem — why did you choose this particular point? What is its advantage? You might comment on its suitability from a theoretical point of view as well as indicate practical reasons for using it.
- Provide a rationale. State your specific hypothesis(es) or objective(s), and describe the reasoning that led you to select them.
- Very briefly describe the experimental design and how it has accomplished the stated objectives.

Style of an introduction

1. Organize your ideas, making one major point with each paragraph. If you make the four points listed above, you will need a minimum of four paragraphs. The first sentence of a paragraph should mention the main argument of the paragraph and the next sentences should explain that point. The final sentence should introduce the following paragraph.

2. Present background information only as needed to support a position
3. State the hypothesis/ objective precisely. Do not oversimplify.

Materials and Method

The objective is to document all materials and general procedures, so that another individual may use some or all of the methods in another study or judge the scientific merit of your work.

Style

- Use active voice
- Avoid informal lists and use complete sentences

What to avoid

- Materials and methods are not a set of instructions
- Omit all explanatory information and background. Mention it in the discussion
- Omit information that is irrelevant

Research method and research methodology

Research method is the source of your research, while research methodology is literature review. Method is a particular way of solving a specific problem. It is therefore unlikely that your research will just have a method, as the whole research will probably draw on different ways (methods) of proving/ solving discrete aspects of the research. Methodology here means the collection of methods you used in a particular piece of research.

Results - The purpose of this section is to present and illustrate your findings. This section is an objective report of the results.

Bibliography - This section acknowledges all the sources of relevant information and ideas that are borrowed and where the researcher borrowed it from.

A research paper is usually 10-12 pages long (single spaced). After you have made the first draft and till you reach the final draft, ensure that:

You have a proper focus on your issue. Every single sentence in the paper should be towards the entire theme without any diversion.

Be the reader while writing. Because if one does not buy what one has written, nobody else will.

Give a logical flow to your paper through proper organization. Abstract, introduction, body, conclusion, references, all should go in order.

Give proper references and citations to all the sources for the paper. This bestows validity and credibility to the paper.

Follow proper writing style. APA or MLA style for research papers.

Make your paper error and mistake free. Ensure that there are no factual errors and grammatical mistakes in the final version.

1.5 □ Preparing Slides

If you are writing a research paper or a project report or a thesis, there would be occasions where you need to present your work. You may present your paper in a conference, your report to the institute you are working for and it is mandatory to present your thesis 2-3 times for evaluation in different stages of your research. The features of a good presentation are:

- Engage the audience — the key factors for getting people's attention.
- Structure a presentation and link it together
- Effective introduction and summaries
- The visual aids, power point to support and enhance a presentation

A presentation can be divided into three parts with a set of questions that you must ask yourself before the time of presentation.

I Introduction:

How do you build relationships with the audience?

How do you catch the audience's attention? Will you use a quote, picture, story or a fact?

What is your assessment of the research findings and how would you communicate it clearly at the beginning of the talk?

II Content Presentation:

What is the logical sequence for the topic you want to present? And how would you plan to help the audience understand the direction of your presentation?

What 3-5 important points you want to make and how to use your data or illustrations to convey those points to the audience?

How do you summarize your points and then move to the next section of your presentation?

III Activity

Condense all key points

Emphasize the audience to use the information you submit

If you are presenting power point, then you have to make slides. For a thirty minute presentation you need to make 60-65 slides. The first slide mentions the title of your topic and your name. At the last or last but one, there should be the reference list. If you plan and structure your presentation, place a slide mentioning the contents or the main topics of your talk towards the beginning. The general slide features are:

- Bulletized list
- Consistency on fonts, colour and background. Fonts size: 44 for title and 32 for text. Contrasting colours for text and background.
- Patterned background can reduce readability of text.
- Empty spaces on the slides enhance readability.

Face the audience. Speak after each successful page load. Don't talk to the slide while checking. The audience may not hear your words clearly.

If you are at slide 11 and you forgot to point 5 and 6 cover up and act cool. Do it as if it's in the plan. The number one factor in giving out steady presentation is simplicity. Research and practice with the rehearse timings from slide show. This will indicate the total speech time and the time you may take for each slide. Practise mock presentation before the actual day.

1.6 □ Presentation Skills

After the slides are ready, you can focus on communication skills that you need to be aware of for making an oral presentation. These are time management, structuring the presentation, communication techniques, and handling questions and feedback.

Times Management:

For presenting your doctoral research, you will get thirty minutes to speak before the audience, who are experts in their own fields. You need to plan your time beforehand. You can keep:

- 2 to 2.5 mins at the opening/beginning
- 20 to 21 mins for the middle section
- 2 to 3 mins for the closing/end, and
- 5 mins for questions.

Structuring the presentation:

The beginning of your presentation should be carefully designed. Try to get attention of the audience through a question, a story, facts and figures or even humour. Be well

rehearsed yet natural. Or you may introduce yourself and your research area and get into the structure of your presentation.

In presenting the structure, speak in a logical and understandable sequence. Give interim summaries or recaps, which are not written on your slides. You may use visual aids such as flip charts, handouts etc.

The last 2 to 2.5 minutes are as critical as the first five minutes for a successful presentation. Summarize, highlight the important points. You may suggest potential research area here. Suggest what to do and when, where and how to do it. Or just summarize and close your presentation.

The *Communication Techniques* for all presentations are:

- Define Acronyms
- Reduce Jargon
- Level Objections
- Use Humor
- Add anecdotes and Stories
- Ask for feedback.

For *Effective Delivery*

- ❖ Be active – move around
- ❖ Be purposeful - control your gestures
- ❖ Modulate your voice (pitch, volume, rate)
- ❖ Be natural
- ❖ Be direct – don't just talk in front of the audience, talk to them.

Be sensitive to the audience

- ❖ “See” the audience
- ❖ Take non-verbal feedback-Congruent and incongruent body language
- ❖ Modify to meet audience needs
- ❖ Don't just make it as a presentation, make it interactive.

Handling Questions

After your presentation, the audience will ask you questions on your research work.

While handling questions:

- ❖ Do not get confused
- ❖ You are not supposed to know everything

- ❖ Anticipate and keep answers ready
- ❖ Sometime questions themselves give you a lead to highlight your point of view.

Feed back:

Positive vs. Negative Feedback

- ❖ Positive feedback is more readily and accurately perceived than negative feedback
- ❖ Positive feedback fits what most people wish to hear and already believe about themselves
- ❖ Negative feedback is most likely to be accepted when it comes from a credible source if it is objective in form
- ❖ Subjective impressions carry weight only when they come from a person with high status and credibility.

An finally, after you are ready with your presentation, consult your thesis supervisor for his/her suggestions and feedback. Make two smock presentations before the actual presentation day.

1.7 □ Summary

This unit has outlined the skill of writing and presenting a research topic and tips for choosing a research topic. All the points discussed here are practical work and you will have a better understanding of them when you actually work out.

1.8 □ Review questions

1. What are the skills needed for presenting a research paper on power point other than those mentioned in the unit?
2. What are the components of a research paper?
3. If you are asked to write a paper by your supervisor, would you write an empirical or a theoretical paper? Why?
4. How much time would you need to write a paper?
5. Make a power point presentation on any one of the following:
 - a) literature teaching
 - b) testing and evaluation
 - c) English as a world language
 - d) any other topic related to ELT which you would like to share with the class.

6. Your topic for research is "The teaching of composition in English" for classes VII and VIII of regional medium schools.

Set up a research proposal mentioning:

- i) The objective of the research.
- ii) The hypothesis proposed (There can be more than one).
- iii) The tools of research you are going to use.
- iv) The kind of resources you will use.
- v) The steps you will take to test the hypothesis.
- vi) The kind of result/ conclusion you expect and how you will measure their validity.
- vii) How you will utilize your findings in the classroom.

Module -4 — Unit 3 □ Writing a Thesis

Structure

- 3.1 Objectives**
- 3.2 Writing in a second language**
- 3.3 Defining originality**
- 3.4 Peer discussion and support**
- 3.5 Designing a thesis**
- 3.6 Scaffolding for an argument**
- 3.7 Paragraph structure**
- 3.8 Differences between skilled and unskilled writers**
- 3.9 Citing sources in the text**
- 3.10 Summary**
- 3.11 Review questions**
- 3.12 Works cited**

3.1 □ Objectives

Learning how to write a thesis is the most challenging task for a researcher. In this unit you will learn

- How to be a skilled writer
- What originality means in a doctoral thesis
- What the examiner looks for in a manuscript

3.2 □ Writing in a second language

Non-native speakers may require extra help with their writing. They, alternately have more knowledge of English grammar and usage than native speakers. The highest standard of clarity and correctness is required in the doctoral thesis. And this depends on knowledge

of grammar and punctuation rules. There are a number of items you should be able to define and recognize in practice — in reading and writing.

Here are ten questions that you can use to test your knowledge.

Quick quiz

1. What are the definite and indefinite articles?
2. When and how should you use a semi-colon?
3. What is a personal pronoun?
4. What is 'the antecedent'?
5. What is subject-verb agreement?
6. What are the essential elements in a sentence?
7. Give examples of sentences using the passive and active voices.
8. What is the difference in meaning between the two?
9. Define 'sentence boundaries' and say why they are important.
10. What is a topic sentence?

Remember that your goal is to produce excellence in your writing. It is not simply an exercise, where subjects and verbs agree. If your sentences are not well bounded your argument will appear confused. You should know exactly what you are doing when you are revising your writing. This could determine your confidence when you are writing. This is exactly what the doctorate is meant to achieve.

If you do not know the answers to the ten questions, you need to read more on grammar and punctuation.

The external examiner will scrutinize:

Review of literature

Design of the study

Presentation of the results

Discussion and conclusions

3.3 □ Defining originality

This is a key word, a key concept and the key criterion for doctoral work. The thesis has to show that the work was in some way original. Originality means:

- Say something no one has said before.
- Do empirical work that has not been done before.
- Synthesize things that have not been put together before.
- Make a new interpretation of someone else's materials/ ideas.

- Take an existing technique and apply it to a new area.
- Work across disciplines, using different methodologies.
- Look at topics that people in your discipline have not looked at.
- Test existing knowledge in an original way.
- Add to knowledge in a way that has not been done before.
- Write down a piece of information for the first time.
- Give a good exposure to someone else's idea.

There are many possible definitions available. You may rehearse several definitions of originality in discussion and in writing to let it shape your writing. In this way you will develop your understanding of the concept, in relation to your research and discard some of the definitions as you go along. The supervisor and examiner will be looking for a clear, explicit and valid claim for originality in your thesis. Start working out what that means now, by doing and repeating the writing activity:

- My work is/ will be original in the sense that...
- My work is/ will not be original in the sense that...

Write for five minutes.

This text may be shaky to begin with, even revisions may be contradictory, vague or abstract, but a start will have been made on defining what is the long term goal of your doctorate.

The thesis writer has to do a universal writing task to grab the reader's attention. Besides reader friendly writing, the examiners will be looking for complexity, originality, critical thinking, scholarly work, significant contribution to a field, novel concepts, innovative ideas and publishable outcomes. Each of these could be used as a prompt for writing, to enable thesis writers to begin, continue and grasp these concepts in relation to their work. Also to work out the specific style, the specific words, they intend to use in writing about these aspects of their work. So ask yourself the following:

Where in my thesis will I demonstrate...

- Complexity?
- Originality?
- Critical thinking?
- Scholarly work?
- Significant contribution to knowledge in the field?
- Novel concepts?
- Innovative ideas?
- Publishable outcomes?

3.4 □ Peer discussion and support

You should of course discuss all of these ideas, hints and strategies with your supervisor(s). However, discussion with peers, including those who are further on in the doctoral process, can help you to develop your understanding of what you are getting into and how to get through it. Whether you have regular or spontaneous, formal or informal meetings and relationships with your peers, you can learn a lot from each other. Perhaps more importantly you can support each other when the task seems impossible.

3.5 □ Designing a thesis

A thesis focuses on a central question and is unified by that focus. The word thesis refers to the whole text that represents a report on the research you have undertaken for your doctorate. A generic thesis structure is:

- **Introduction/ Background/ Review of literature**
Summarize and evaluate books, articles, theses, etc.
Define the gap in the literature
Define and justify your project
- **Theory/ Approach/ Method/ Materials/ Subjects**
Define method, and theoretical approach
Method of inquiry
Show links between your method and others
Justify your method
- **Analysis/ Results**
Report what you did, list steps followed
Document the analysis, showing you carried it out
Report what you found
Prioritize sections for the thesis for an appendix
- **Interpretation/ Discussion**
Interpret what you found
Justify your interpretation
Synthesize results in illustrations, tables, graphs, etc.
- **Conclusions/ Implications/ Recommendations**

For future research

For future practice

Report issues which were beyond the scope of this study

You can consider these as individual topics for your thesis chapters. The first chapter of a thesis is the introduction. In this chapter you may define and justify your problem and write the thesis statement. In the chapter on review of literature, you may define the gap in literature and summarize books, articles, theses relevant as background information. The next chapters are your core chapters, where you may write on the method, reports on what you did, your analysis and findings. The final chapter is the conclusion. Here you write on the implications of your work, recommend future work and the limitations of your study.

Here is a series of writing tasks that you may find useful for pulling things together.

About your research :

Write for 30mins about your research in sentences on seven prompts.

State the subject of your thesis in one sentence.

List the aims of your research/ analysis.

Describe what you did to achieve your aims.

Describe what you found in your analysis.

Explain what it means.

Define what is original about it.

List three subjects that remain unresolved.

Add more prompts to the list.

Write for 30 minutes on these additional prompts :

- State the subject of your thesis in one sentence.
State your hypothesis in a sentence.
- List the aims of your research/ analysis.
List your research questions.
Give two reasons why your topic is important.
Name three other people who think it is important.
Write one sentence on what each says about the topic.
- Describe what you did to achieve your aims.
List your reasons for doing that.
Explain your reasons.
Explain why you rejected alternatives.

- Describe what you found in your analysis.
What did you find?
- Explain what it means.
Define what is original about it.
- List three subjects that remain unresolved.
Save this writing for your introduction.

Outline your thesis structure in 30 minutes

Background/Context/ Review of literature/ Introduction

- The subject of the research is important because ...
- Those who have worked on this subject include ...
- What has not been done is ...
- The research project aimed to ...

Theory/Method/ Approach/ Materials/ Subjects

- This study was based on the approach of ...
- This approach was chosen because...
- It was likely to achieve the project aims by ...
- Others have used this method to ...

Results/ Analysis

- The steps in the research involved ...
- Analyses were conducted by ...
- Data/ information/ observations were gathered as ...
- These were organized into ...

Discussion/ Interpretation

- Analyses suggested that ...
- This interpretation was based on ...
- Taken together the analyses show ...
- Research aims were achieved to the extent that

Recommendations/ Implications/ Conclusions

- Further research is needed in order to ...
- More information is needed on ...
- Practice could be improved by ...
- Proposed changes would be feasible if ...

There may be many key words that you and your supervisor will use often about your writing. These can have quite different meanings, e.g. — revise, expand, review, explain.

Comments on your writing can be mixed up with comments on your research. It is important to work out what the feedback means before you start to act on it in new writing and revising. The code of practice may be a useful agenda for a series of early meetings where you and your supervisor work out how you are going to manage your research and writing. These early discussions will help you work out what you are dealing with and the extent to which your supervisor is willing to adjust his or her style. Any text on teaching and learning in higher education will include research supervision. The roles of the supervisor are:

- Director
- Facilitator
- Adviser
- Teacher
- Guide
- Critic
- Freedom giver
- Supporter
- Friend
- Manager
- Examiner

The role your supervisor plays, either consciously or unconsciously will no doubt affect the role you play consciously or unconsciously. The relationships between student and supervisor are:

- | | |
|-------------------|-----------------------|
| • Director | : Follower |
| • Master | : Servant |
| • Guru | : Disciple |
| • Teacher | : Pupil |
| • Expert | : Novice |
| • Guide | : Explorer |
| • Project manager | : Team worker |
| • Auditor | : Client |
| • Editor | : Author |
| • Counsellor | : Client |
| • Senior partner | : Junior professional |
| • Colleague | : Colleague |
| • Friend | : Friend |

How might the supervisor's role definition affect your writing? The role your supervisor plays consciously or unconsciously can affect the role you play, both in your discussion and in your writing:

1. If you are cast in the role of 'novice' you will find it difficult to write with authority.
2. If you play the role of 'disciple' you might feel the influence of your supervisor's style of thinking and writing too strongly to find your own.
3. If you are cast in the role of 'colleague' you may feel that you cannot — yet, at the start — measure up to expectations.
4. What can you do if you are cast in a role that does not suit you, e.g. cast as an expert when you feel you are a novice, or as a novice when you feel you have some knowledge?
5. Will you act out the role assigned to you? Do you have the necessary acting skills?
6. How can you influence this 'casting'?

How you perceive your immediate audience, your supervisor can have enormous influence on your writing. To some extent that is inevitable. But you will have to find some way of writing for the audience 'beyond' the supervisor, the research community, while not appearing not to write for your supervisor, of course.

Your immediate reader is your supervisor. Supervisors have a formal responsibility to read your work and give you feedback on it within a reasonable length of time, throughout your doctorate. They are, naturally, likely to have the strongest influence on your sense of audience. As for the external examiner, your supervisor is a representative of the scholarly community.

3.6 □ Scaffolding for an argument

This section argues that the combination of definition and examples is a strong unit in academic argument. For any point that we want to argue, we can use four steps as the scaffolding for our argument.

1. Decide on the main point.
2. Define terms, elaborate.
3. Illustrate your point.
4. Discuss illustrations, examples or evidence: show how they say what you say they say.

Many writers stop at the third step, as if to say 'See, that proves it.' However, simply presenting evidence is not enough; we have to show how we constructed our interpretation of it and how that interpretation makes our point.

3.7 □ Paragraph structure

Doctoral writing involves many mini-experiments in style. Here we adapt the way we 'normally' write or have written in the past for other tasks, to the extended argument that is a thesis. We can design a paragraph as a unit in our argument. We do not need to wait and see how long or short a paragraph will be; we can decide to write as much or as little we think our point requires. Throughout the paragraph we can use a variety of linking techniques (link words) to make sure the reader follows through a complicated argument. The outline structure is:

(1) Topic sentence ....	... ..	....	....	....	....	....	....
.....	.....	(2) Elaborate/ define your terms ...	....	....	....	....	....
.....	.....	.....	.....	.....	.....	(3) Give an example /	
evidence/ illustrate ....	....	....	....	....	....	.....	....
.....	.....	.....	....	....	....	(4) Say how your example makes	
the point in your topic sentence.							

3.8 □ Differences between skilled and unskilled writers

Skilled Writers

Aware of writing as a recursive activity involving revisions of successive drafts, during which one's ideas might change, necessitating rewriting of certain portions.

Spend time planning the task

At the draft stage, write quickly and fluently, spend time reviewing what they write and do most of their reviewing at the sentence and paragraph level.

Unskilled Writers

Focus on the mechanics of writing and are inhibited by their concern for formal correctness.

Tend to limit to teacher-generated rules and modifications of lexis.

Less able to anticipate the likely problems of the reader.

Spend little time planning and are confused when they begin.

Spend little time reviewing what they have written, review only short segments of text, and are concerned principally with

vocabulary and sentence formation.

At revision stage, revise at all levels of lexis sentences and discourse, review and revise throughout the composing process, and use revisions to clarify meaning.

Do not make major revisions in the direction or focus of the text, make most revisions only during the first draft and focus primarily on the mechanics of grammar, spelling, punctuation and vocabulary.

3.9 □ Citing sources in the text

You have learnt about acknowledging sources at the end of the research in Module 3. But you must also indicate to your readers exactly what works you used in writing the paper, exactly what you derived from each source and where in the work you found the material. The most practical way to supply this information is to insert a brief parenthetical acknowledgement in your paper where ever you incorporate another's words, facts or ideas. Usually the author's last name and page reference are enough to identify the source and the specific location from which you borrowed material.

The progressive aspect of English verb can be distinguished as "momentary verb", according to the type of meaning conveyed by it. "Jump, kick, knock, nod, tap, wink etc. refer to happenings that it is difficult to think of them as having duration" (Leech 18-19).

The parenthetical reference "(Leech 18-19)" indicates that the quotations come from page 18 and 19 of a work by Leech. Given the author's last name, your readers can find complete publication information for the source in the alphabetically arranged list of works cited that follows the text of your paper.

Leech, Geoffrey N. *Meaning and the English Verb*. London: Longman, 1971.

Citing an entire work, a work with no page numbers

Books

If you want to cite an entire work, a print source or a non-print source include in the text underlined. E.g.

Fukuyama's Our Posthuman Future includes many examples of this trend.

Articles in periodicals

But Katie Trumpener has offered another view.

Diction, according to Anthony Tommasini, is more important than vocal prowess in a singer of Gilbert and Sullivan.

Electronic sources

William J. Mitchell's City of Bits discusses architecture and urban life in the context of the digital telecommunications revolution.

Stempel has tried to develop a "historical sociology" of sport in nineteenth century America.

Works Cited

Fukuyama, Francis. Our Posthuman Future: Consequences of the Biotechnology Revolution. New York: Farrar, 2002.

Mitchell, William J. City of Bits: Space, Place, and the Informationbahn. Cambridge: MIT Press, 1995. MIT Press. 23 Sept. 2002<http://mitpress2.mit.edu/e-books/city_of_Bits/>.

Stempel, Carl William. "Towards a Historical Sociology of Sport in the United States, 1825-1875." DAI 53(1993); 3374A. University of Oregon, 1992. Dissertation Abstracts OnDisc. CD-ROM. UMI-ProQuest. Sept. 1993.

Tommasini, Anthony. "In Gilbert and Sullivan, Better to Have More Words, Less Voice." Rev. of The Mikado, by Wiliam S. Gilbert and Arthur Sullovan. New yourk City Opera. New York State Theater, New York. New York Times 10 Mar. 1997, late ed.: C22.

Trimpenner, Katie. "Memories Carved in Granite: Great War Memorials and Everyday Life." PMLA 115(2000): 1096-103.

Citing part of a work

If you quote, paraphrase or otherwise use a specific passage in a book or an article, give the relevant page or section number or numbers. When the author's name is in your text, give only the number reference in parentheses. If the context does not clearly identify the author, add the author's last name before the reference. Leave a space between them, do not insert any punctuation marks.

Books

Brain Taves suggests some interesting conclusions regarding the philosophy and politics of the adventure film (153-54, 171).

Among intentional spoonerisms, the "pun like metathesis of distinctive features may

serve to weld together words etymologically unrelated but close in their sound and meaning" (Jakobson and Waugh 304).

Although writings describing utopia have always seemed to take place far from the everyday world, in fact "all utopian fiction whirls contemporary actors through a costume dance no place else but here" (Rabkin, Greenberg, and Olander vii).

Another engaging passage is the opening of Isabel Allende's story "Toad's Mouth" (83).

Articles in periodicals

Between 1968 and 1988, television coverage of presidential elections changed dramatically (Hallin 5).

Repetitive strain injury, or RSI, is reported to be "the fastest-growing occupational hazard of the computer age" (Taylor A1).

Electronic sources

"The study of comparative literature," Bill Readings wrote, "takes off from the idea of humanity" (6).

Beethoven has been called the "first politically motivated composer," for he was "caught up in the whole ferment of ideas that came out of the French Revolution" (Gardiner, screens 2-3).

If your source uses paragraph numbers rather than page numbers, as some electronic journals do, give the relevant number or numbers preceded by the abbreviation par. or pars. ; If the author's name begins such a citation, place a comma after the name. If other kind of section is numbered in the source (e.g. screens), either write out the word for the section or use a standard abbreviation.

"The debut of Julius Caesar," according to Sohmer, "proclaimed Shakespeare's Globe a theater of courage and ideas, a place where an audience must observe with the inner eye, listen with the inner ear" (par. 44).

Works cited

Allende, Isabel. "Toads Mouth." Trans. Margaret Sayers Penden. A Hammock beneath the Mangoes: Stories from Latin America. Ed. Thomas Colchie. New York: Plume, 1992. 83-88.

Gardiner, John Eliot. "The Importance of Beethoven." Interview. Charlie Rose. PBS. 25 July 1996. Transcript. Broadcast News. CD-ROM. Primary Source Media. July 1996. 23 screens.

- Hallin, Daniel C. "Sound Bite News: Television Coverage of Elections, 1968-1988." Journal of Communication 42.2 (1992): 5-24.
- Jakobson, Roman, and Linda R. Waugh. The Sound Shape of Language. Bloomington: Indiana University Press, 1979.
- Rabkin, Eric S., Martin H. Greenberg, and Joseph D. Olander. Preface. No Place Else: Explorations in Utopian and Dystopian Fiction. Ed. Rabkin, Greenberg, and Olander. Carbondale: Southern Illinois University Press, 1983. vii – ix.
- Sohmer, Steve. "12 June 1599: Opening Day at Shakespeare's Globe." Early Modern Literary Studies 3.1 (1997): 46 pars. 26 June 2002 < <http://www.shu.ac.uk/elms/03-1/sohmjuli.html>>.
- Taves, Brian. The Romance of Adventure: The Genre of Historical Adventure Movies. Jackson: University Press of Mississippi, 1993.

Citing volume and page numbers of a multivolume work

When citing a volume number as well as a page reference for a multivolume work, separate the two by a colon and a space: "(Wellek 2: 1-10)." If you wish to refer parenthetically to an entire volume of a multivolume work, there is no need to cite pages. Place a comma after the author's name and include the abbreviation vol.: "(Wellek, vol.2)." if you integrate such a reference into a sentence, spell out volume: "In volume 2, Wellek deals with"

The anthology by Lauter and his coeditors contains both Stowe's "Sojourner Truth, the Libyan Sibyl" (1: 2530-38) and Gilman's "The Yellow Wall-Paper" (2: 606-19).

Between the years 1945 and 1972, the political-party system in the United States underwent profound changes (Schlesinger, vol. 4).

Wellek admits in the middle of his multivolume history of modern literary criticism, "An evolutionary history of criticism must fail. I have come to this resigned conclusion" (5: xxii).

Works cited

- Lauter, Paul, et al., eds. The Health Anthology of American Literature. 4th ed. 2 vols. Boston: Houghton, 2002.
- Schlesinger, Arthur M., Jr., gen. ed. History of U.S. Political Parties. 4 vols. New York: Chelsea, 1973.
- Wellek, Rene. A History of Modern Criticism, 1750-1950. 8 vols. New Haven: Yale University Press, 1955-92.

Citing a Work Listed by Title

Books

A presidential commission report in 1970 that recent protests had focused on "racial injustice, war, and the university itself" (Report 3).

The nine grades of mandarins were "distinguished by the color of the button on the hats of office" ("Mandarin").

Articles

International espionage was as prevalent as ever in the 1990s ("Decade").

A New York Times editorial called Ralph Ellison "A writer of universal reach" ("Death").

Electronic sources

In winter the snowy owl feeds primarily on small rodents ("Snowy Owl," Hinterland), but in spring it also feeds on the eggs of much larger waterfowl, such as geese and swans ("Snowy Owl," Arctic).

Works Cited

"Death of a Writer." Editorial. New York Times 20 Apr. 1994, late ed.: A18. "Decade of the Spy." Newsweek 7 Mar. 1994: 26-27.

"Mandarin." The Encyclopedia Americana. 1994 ed.

Report of the President's Commission on Campus Unrest. New York: Arno, 1970.

"Snowy Owl." Arctic Studies Center. 2002. Natl. Museum of Natural History of the Smithsonian Inst. 8th Aug. 2002 <<http://www.mnh.si.edu/arctic/html/owl.html>>.

"Snowy Owl ." Hinterland Who's Who. 15th May 2002. Canadian Wildlife Service. 8 Aug. 2002 <http://www.cws-scf.ec.gc.ca/hww-fap/index_e.cfm>.

Citing two or more works by the same author or authors

In a parenthetical reference to one of two or more works by the same author, put a comma after the author's last name and add the title of the work (in brief) or a shortened version and the relevant page reference: '(Frye, Double Vision 85),' "(Durant and Durant, Age 214-48)." If you state the author's name in the text, give only the title and page reference in parentheses: "(Double Vision 85)," "(Age 214-48)."

If you include both the author's name and the title in the text, indicate only the pertinent page numbers in parentheses: "(85)," "(214-48)."

Electronic sources

Hypertext, as one theorist puts it, is "all about connection, linkage, and affiliation" (Moulthrop, "You Say," par. 19).

Works cited

- Durant, Will, and Ariel Durant. The Age of Voltaire. New York: Simon, 1965. Vol. 9 of The Story of Civilization. 11 vols. 1933-75.
- Frye, Northrop. Anatomy of Criticism: Four Essays. Princeton: Princeton University Press, 1957.
- . The Double Vision: Language and Meaning in Religion. Toronto: University of Toronto Press, 1991.
- Moulthrop, Stuart. "You Say You Want a Revolution? Hypertext and the Laws of Media." Postmodern Culture 1.3 (1991): 53 pars. 12 July 2002
<http://muse.jhu.edu/journals/postmodern_culture/v001/1.3moulthrop.html>.

Citing more than one work in a single parenthetical reference

If you wish to include two or more works in a single parenthetical reference, cite each work as you normally would in a reference, and use semicolons to separate the citations.

(Natl. Research Council 25-35; Fitzgerald 330-43)

(Guidelines; Hallin 18-24)

(Lauter et al., vol. 1; Crane)

Works cited

- Craner, Paul M. "New Tool for an Ancient Art: The Computer and Music." Computers and the Humanities 25 (1991): 303-13.
- Fitzgerald, John. "The Misconceived Revolution: State and Society in China's Nationalist Revolution, 1923-26." Journal of Asian Studies 49 (1990): 323-43.
- Guidelines for family Television Viewing. Urbana: ERIC Clearinghouse on Elementary and Early Childhood Educ., 1990. ERIC. CD-ROM. SilverPlatter. Oct. 1993.
- Hallin, Daniel C. "Sound Bite News: Television Coverage of Elections, 1968-1988." Journal of Communication 42.2 (1992): 5-24.
- Lauter, Paul, et al., eds. The Heath Anthology of American Literature. 4th ed. 2 vols. Boston: Houghton, 2002.
- National Research Council. China and Global Change: Opportunities for collaboration. Washington: Natl. Acad., 1992.

Notes with parenthetical documentation

Two kinds of notes may be used with parenthetical documentation:

a) Content notes offering the reader comment, explanation, or information that the text cannot accommodate, b) Bibliographic notes containing either several sources or evaluative comments on sources.

Content notes

In your notes, avoid lengthy discussions that divert the reader's attention from the primary text. Comments that you cannot fit into the text should be omitted unless they provide essential justification or clarification of what you have written. You may use a note, to give full publication facts for an original source for which you cite an indirect source and perhaps to explain why you worked from secondary material.

The commentary of the sixteenth-century literary scholars Bernardo Segni and Lionardo Salviati shows them to be less-than-faithful followers of Aristotle.¹

Note

¹Examples are conveniently available in Weinberg. See Segni, *Rettorica et poetica d'Aristotle* (Firenze, 1549) 281, qtd. in Weinberg 1: 405, and Salviati, *Poetica d' Aristotle parafrasata e commentata* 1586, ms. 2.2.11, Biblioteca Nazionale Centrale, Firenze, 140v, qtd. in Weinberg 1: 616-17.

Works cited

Weinberg, Bernard. *A History of Literary Criticism in the Italian Renaissance*. 2 vols. Chicago: University of Chicago Press, 1961.

Bibliographic notes

Use notes for evaluative comments on sources and for references containing numerous citations.

Many observes conclude that health care in the United States is inadequate.¹

Technological advancements have brought advantages as well as unexpected problems.²

Notes

¹ For strong points of view on different aspects of the issue, see Public Agenda Foundation 1-10 and Sakala 151-88.

² For a sampling of materials that reflect the range of experiences related to recent technological changes, see Taylor A1; Moulthrop, pars. 39-53; Armstrong, Yang, and Cuneo 80-82; Craner 308-11; Fukuyama 42; Frank and Alston.

- Alston, Robin. "Bodley CD-ROM." Online posting. 15 June 1994. ExLibris. 8 July 2011 <<http://palimpsest.stanford.edu/byform/mailling-lists/exlibris/1994/06/msg00170.html>>.
- Armstrong, Lary, Dori Jhones Yang, and Alice Cuneo. "The Learning Revolution: Technology Is Reshaping Education - at Home and at School." *Business Week* 28 Feb. 1994: 80-88.
- Craner, Paul M. "New Tool for an Ancient Art: The Computer and Music." *Computers and the Humanities* 25 (1991): 303-13.
- Frank, Holly. *Negative Space: A Computerized Video Novel*. Vers. 1.0. Diskette, videocassette. Prairie Village: Diskotech, 1990.
- Moulthrop, Stuart. "You Say You Want a Revolution? Hypertext and the Laws of Media." *Postmodern Culture* 1.3 (1991): 53 pars. 12 July 2002 <http://muse.jhu.edu/journals/postmodern_culture/v001/1.3moulthrop.html>.
- Public Agenda Foundation. *The Health Care Crisis: Containing Costs, Expanding Coverage*. New York: McGraw, 1992.
- Taylor, Paul. "Keyboard Grief: Coping with Computer-Caused Injuries." *Global and Mail [Toronto]* 27 Dec. 1993: A1+

3.10 □ Summary

This unit introduced you to practices, techniques and strategies relevant to different phases of writing a doctoral thesis. The sections are arranged to guide you through the writing process and help you face the challenges from the start to finish.

3.11 □ Review Questions

1. What is the purpose of the doctoral thesis?
2. How do I define an effective student-supervisor relationship?
3. The supervisor is the most important person in the academic life of a research student. What are the points you need to know before beginning your research?
4. From the format of the following writing programme detail your own programme.

Writing programme Part -1

Meeting 1-5 8 weeks

Meeting 1 1 February

Written 12 pages 4000 words

To Write Chapter 2, 3, 4, 5, 6; pages each

Plus 15 pages on

Plus 15 pages on

Meeting 2 February

Written Chapter 2 , submitted to supervisor

Done Coding and analysis, table of results

To write Chapters 3-6

Revisions July - September

Meeting 3 March

Written Memo to supervisor on writing schedule

15 units of analysis

Revised Coding scheme

To write Chapter 3 by end of March; intro, 'This chapter is about ...'

Chapter plan: page allocation to topics

To revise More explicit connections between Chapter 1 and 2

Meeting 4 March

Written Letter to supervisor, responding point-by-point

Agreeing next steps

To write Chapter 3 by end of March

Meeting 5 April

Written Chapter 3

Chapter 4 (25 pages, 4900 words)

To write Chapter 5 by May 14

Writing Programme Part 2

Meetings 6-10 20 weeks

Meeting 6 May

Feedback 35 points from supervisor

Written Tables half done, statistics half done
Free writing on supervisor's feedback
Written response to supervisor

To write Chapter 5 by May 14 (30 pages)

Meeting 7 17 May

Written Chapter 5 (2 days late)
Letter of thanks for supervisor

To write Invited to contribute to a journal
Chapter 6 by mid-June
5 hrs per day, 5 or 6 days a week
Redo stats for Chapter 3
Appendices and references

Meeting 8June

Written 5000 words this week
To write Chapter 6 8 pages on text analysis
2-3 pages on results of analysis
8 pages of general discussion results
10 pages of discussion/ implications etc.

Revise Chapter 1 (supervisor's feedback)

New programme deadline for complete draft 15 August

Chapter 1 Revisions 25 June
Chapter 2 Revisions 9 July
Chapter 3 Revisions 16 July
Chapter 4 Revisions 23 July
Chapter 5 Revisions 30 July
Chapter 6 Revisions 6 August

Meeting 9 12 August

Writing routine 9am -12, 2-5, 7-9
Written Chapter 1-6
To revise Chapter 1-6

Meeting 10 10 October

Written Chapter 6, intros, revisions for user-friendliness, cut analysis
To write Revise Chapters 5 and 6, Title page, Contents etc.

3.12 □ Work cited

- Gibaldi, Joseph. 2004. *MLA Handbook for Writers of Research Papers*. 6th edn. New Delhi: East-West Press.
- Murray, Rowena. 2003. *How to Write a Thesis*. Philadelphia: Open University Press.
- Nunan, David. 1998. *Language Teaching Methodolgy*. Chapter Five. Developing Writing Skills. Prentice Hall.

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