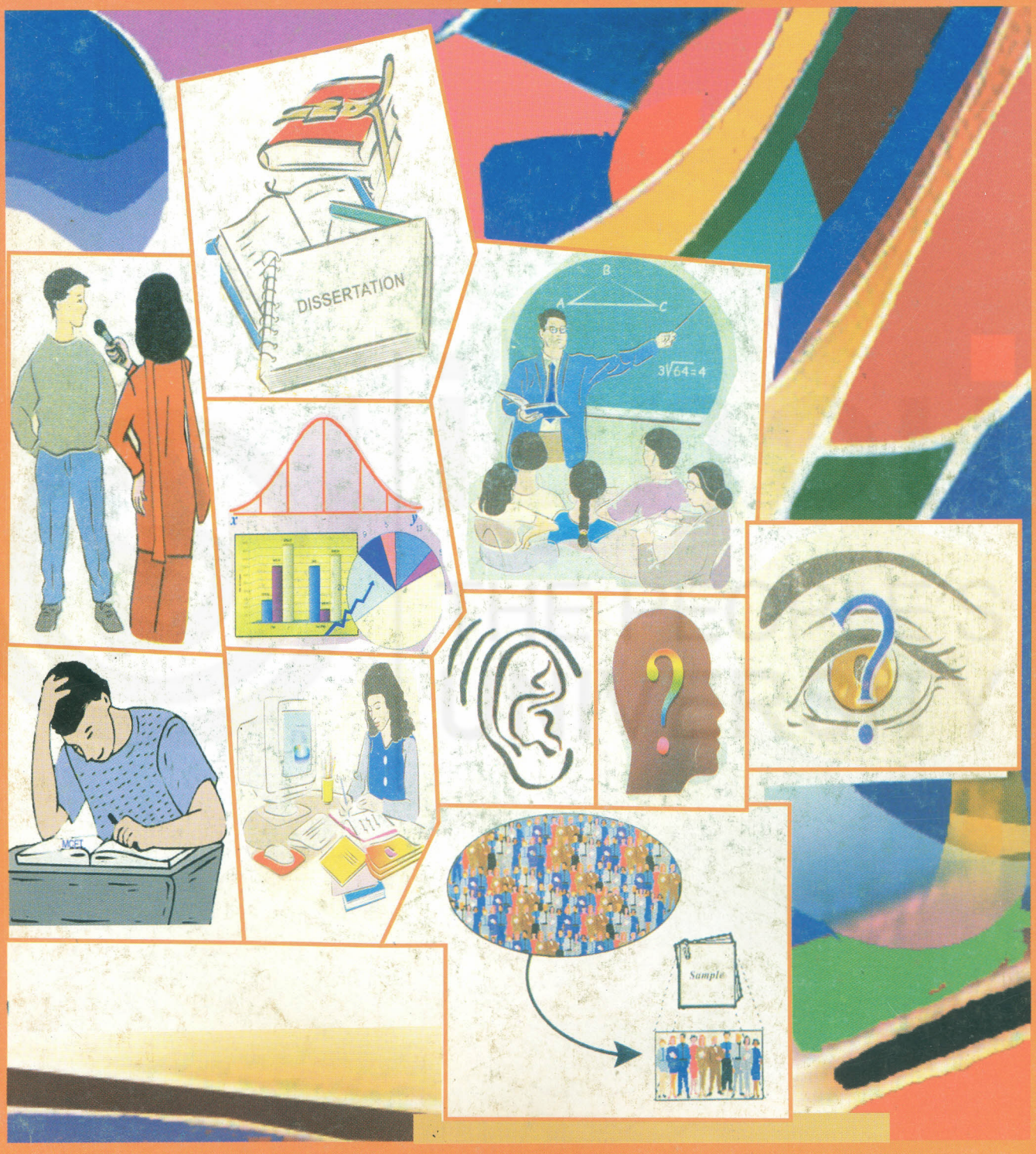
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MCFT-005

Counselling and Family Therapy: Research Methods and Statistics



REPORT WRITING AND EVALUATION 4

"शिक्षा मानव को बन्धनों से मुक्त करती है और आज के युग में तो यह लोकतंत्र की भावना का आधार भी है। जन्म तथा अन्य कारणों से उत्पन्न जाति एवं वर्गगत विषमताओं को दूर करते हुए मनुष्य को इन सबसे ऊपर उठाती है।"

– इन्दिरा गांधी

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"Education is a liberating froce, and in our age it is also democratizing force, cutting across the barriers of caste and class, smoothing out inequalities imposed by birth and other circumstances."

– Indira Gandhi

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MCFT-005

Counselling and Family Therapy: Research Methods and Statistics

Block

4

REPORT WRITING AND EVALUATION

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EXPERT COMMITTEE

Prof. V.N. Rajasekharan Pillai ***(Chairperson)***
Vice Chancellor
IGNOU, New Delhi

Prof. Reeta Sonawat
Dean & Head, Department of Human Development, SNDT Women's University, Mumbai

Prof. Mathew Verghese
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NIMHANS, Bangalore

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Department of Mental Health and Social Psychology,
NIMHANS, Bangalore

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Deptt. of Psychiatry, AIIMS &
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Department of Mental Health and Social Psychology, NIMHANS, Bangalore

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CCS HAU, Hisar

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Department of Psychology
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New Delhi

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Assam Agricultural University
Assam

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New Delhi

Dr. Indu Kaura
Secretary, Indian Association for Family Therapy, New Delhi

Dr. Jayanti Dutta
Associate Professor of HDCS,
Lady Irwin College, New Delhi

Ms. Reena Nath
Practising Family Therapist
New Delhi

Dr. Rekha Sharma Sen
Associate Professor
(Child Development), SOCE
IGNOU, New Delhi

Prof. Vibha Joshi
Director, School of Education
IGNOU, New Delhi

Prof. C.R.K. Murthy
STRIDE
IGNOU, New Delhi

Mr. Sangmeshwar Rao
Producer, EMPC, IGNOU
New Delhi

Prof. Neerja Chadha
(Programme Coordinator)
Professor of Child Development
School of Continuing Education
IGNOU, New Delhi

Dr. Amiteshwar Ratra
(Convenor & Programme Coordinator)
Research Officer, NCDS
IGNOU, New Delhi

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PROGRAMME COORDINATORS – M.Sc. (CFT) / PGDCFT

Dr. Amiteshwar Ratra
Research Officer
NCDS, IGNOU, New Delhi

Prof. Neerja Chadha
Professor of Child Development
SOCE, IGNOU, New Delhi

COURSE COORDINATORS

Dr. Amiteshwar Ratra
Research Officer,
NCDS, IGNOU, New Delhi

Prof. Neerja Chadha
Professor of Child Development
SOCE, IGNOU, New Delhi

COURSE WRITERS

Units 19, 20 & 22 Adapted from Course MES-016 of IGNOU

Unit 21 Adapted from Courses MES-016 & ES-315 of IGNOU

BLOCK EDITORS

Prof. Reeta Sonawat
Dean & Head, Department of Human Development SNDT Women's University, Mumbai

Prof. Neerja Chadha
Professor of Child Development
SOCE, IGNOU, New Delhi

Dr. Amiteshwar Ratra
Research Officer,
NCDS, IGNOU, New Delhi

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BLOCK 4 REPORT WRITING AND EVALUATION

Introduction

Block 4, which is the last theory Block of the Course, deals with three important aspects of a research work. While we discuss research design in Block 1. preparation of a research proposal and carrying out research review have been included in the Block. Moreover, this Block provides a detailed knowledge about how to write a research report and write references in the research report.

Unit 19 entitled "Synopsis", focuses on how to write a research proposal or synopsis. Before carrying out the research work, a researcher is required to develop a research plan or proposal. It is like the blueprint which the architect designs before the construction of a house. A research proposal contains statement of the title of the problem, introduction/rationale of the study statement of the problem, a brief review of related literature, objectives of the study, research questions or hypotheses, definition of terms, methodology of the study including sample, tools and techniques of data collection, method of data analysis, time schedule, budget/financial estimates and references.

Unit 20, is "Review of Literature". We deal with methods of literature search/ review. Literature survey helps in conceptualizing the research problem and identifying the relevant variables of the study. There are various sources of literature survey. These are print material, audio-video programme, and web-based documents. Three main steps involved in literature search are choosing the area, searching relevant titles of literature and locating documents. Method of literature search are search engine, abstracting and indexing services, and bibliography. In the end we talk about implications of methods of review.

Unit 21 is on "Research Report: Various Components and Structure". It concerned with how to write a research report. In the beginning, we explain to you the meaning and significance of research report. Research reports are of different types, such as, research articles, abstracts, theses and dissertations and project reports. Format of a research report generally comprises the preliminary section, the body of the report and the reference section. The main body of the study comprises introduction, review of related literature and design of the study. The last section contains references and appendices.

The last Unit of the Block, **Unit 22** is on "Evaluating Research Reports". It provides an understanding of evaluating various types of research report. At the outset we critically assess the validity of the mechanism of evaluating research reports. You can aquiant with the knowledge of evaluating a research report and submit assessment. The major items for evaluating a research report are explained and the scientific criteria for evaluating or research report is also discribed in this Unit.

UNIT 19 SYNOPSIS

Structure

19.1 Introduction

19.2 Purpose of Writing a Synopsis

19.3 Format of a Synopsis

19.4 Let Us Sum Up

19.5 Glossary

19.6 Answers to Check Your Progress Exercises

19.7 Unit End Questions

19.8 Further Readings and References

19.1 INTRODUCTION

During the process of research, a researcher is expected to write various types of documents. After the identification of a research problem, the first task before the researcher is to write out a proposal, or a synopsis, or a plan for research which includes a statement of the problem, research objectives and hypotheses, procedure and design of the study, the sample to be selected, the tools to be developed for the collection of data, and the quantitative or qualitative techniques to be used for the analysis and interpretation of data.

Many universities or institutions require a proposal from the researcher before the registration, the same to be submitted to the research committee for approval. After completion of research work, a researcher is expected to submit, in brief her or his work in the form of an abstract.It will be a brief account of the work to be carried out by a researcher. It is not a detailed report of the research work. When the entire report/thesis is ready, along with the report, the researcher is also expected to write an abstract highlighting the major objectives along with major findings. During the entire phase of research, the researcher may come out with some part of the report in the form of a paper or an article, which may be sent for publication. Thus, during the process of research, the researcher is expected to write research proposal or synopsis. This Unit will focus on the purpose of writing proposal or synopsis along with their format.

Objectives

After studying this Unit, you will be able to:

- State the purpose of writing synopsis;
- State the format of a synopsis; and
- Formulate a synopsis for a selected research problem.

19.2 PURPOSE OF WRITING A SYNOPSIS

In this Section, we will be talking about the purpose of writing a synopsis or research proposal.

After selecting and formulating the research problem, the researcher is required to prepare a research proposal or synopsis for presentation before some committee in the University or funding agency. At the stage of writing the proposal, the entire project or research work shapes into concrete form. In the proposal, the researcher demonstrates that she or he is familiar with what she or he is doing. Here inspiration and insight of researcher are translated into a step-by-step plan for discovering new facts. Following are a few purposes of a research proposal or synopsis:

- A proposal is like the blueprint which the architect designs before construction of a house. It conveys the plan of entire research work indicating how the entire research work will be carried out.
- A synopsis serves to communicate the researcher's research plans to those who provide consultation or disburse funds. In many institutions, the research proposal is presented before a committee. Here a number of experts participate and provide important suggestions to help the researcher. A funding agency also provides funds, based on the strength of the proposal. Thus, the nature of academic assistance and financial support will depend directly on clarity and thoroughness of the proposal.
- A synopsis serves as a plan of action. It conveys to the researcher and others as to how the study will be conducted. There is an indication of time schedule and budget estimates in the proposal which guide a researcher to complete the task in time within the sanctioned budget.
- A synopsis approved by a committee constitutes a bond of agreement between the researcher and the guide or the funding agency. The entire proposal becomes a mirror for both to execute the study in the right perspective.

Thus, a proposal/synopsis serves mainly three purposes : (i) It communicates the researcher's plan to all others interested; (ii) It serves as a plan of action; and (iii) It constitutes a bond of agreement between the researcher and the guide or funding agency.

19.3 FORMAT OF A SYNOPSIS

A Proposal

The preparation of a research proposal or synopsis is an important step in the process of research. There are various steps in formulating a research proposal. The steps may differ from one type of study to another. There are, however, certain specifications that are essential to good research and, therefore, all such specifications should appear in each proposal. A worthwhile research study is likely to result only from a carefully planned and well designed proposal. Although it is not necessary to follow any of them, one should be careful that any list of specifications provides a useful outline for writing a proposal. There should always be flexibility according to the nature and type of research.

The following categories of information should appear in a research proposal or synopsis:

1. Statement of the Title of the Problem

On the first page of the proposal, the statement of the title of the problem is mentioned along with name of the researcher, name of the guide, and name of the university or funding agency to which research proposal is to be submitted. The title of the research proposal should be no more than name of the topic. It should be so worded such that it suggests the theme of the study. The title should not be too lengthy or too involved. It should be specific to the area of the study and should give sufficient information about the nature of the study.

2. Introduction (Context and Justification)

In this section, the researcher introduces the problem briefly. Further, the researcher will spell out as to how the problem emerged, its social and educational context and its importance to the field. Some researchers name this caption as "Background of the Study". In short, here the entire topic of the study is introduced in brief. In some proposals, there is a separate caption 'Rationale', while in others the same is included in the introduction. Here the researcher specifically deals with justification for conducting the proposed study. In short, one tries to answer 'WHY' of the study. Suppose one selects "Problems of joint families in Gujarat" as a problem of her or his study. The researcher will discuss about joint families in Gujarat, its status etc. in introduction along with various problems related to it and the justification for conducting this study.

3. Statement or Definition of the Problem

Statement of the problem is not exactly the same as the title of the study. It has a definite place in the research proposal. Statement of the problem is primarily an expansion of the title of the problem. It is the explanation of the title or theme highlighting the scope and area of the study.

4. A Brief Review of Related Literature

In this section, one presents what is so far known about the problem under consideration. The review of literature includes two parts (i) the theoretical background of the problem and (ii) the research work already carried out in the area. If the area selected is quite new, concepts involved are unknown or not explored at length, then researcher should describe it in brief. The latest research trends pertinent to the problem should also be mentioned in this section. The literature need not be exhaustive, but should contain the most pertinent related studies. The researcher has to make it clear that her or his problem has roots in the existing literature, but needs further research and exploration. It should demonstrate the grasp of the researcher of the field and awareness of recent developments in the area.

It is not necessary to discuss all the related studies in detail. By reviewing several similar studies, the researcher may describe the most important and recent ones. The related literature section should conclude with a discussion of findings and their implications. She or he should focus on what has been done so far in the area along with the research gaps. Here she or he can share the insights she or he has gained from the review. Research gaps so identified will help the researcher in building a strong rationale for the proposed study.

In many research proposals, there is a caption 'Rationale', which tries to focus on the 'WHY' of the particular study. Focus will be on "Why this problem?" "Why this sample?" etc. A strong justification for conducting present study has to be presented in the Rationale.

5. Objectives

Without clear formulation of the objectives, the researcher is likely to wander aimlessly in the field and she or he hardly achieves any worthwhile goal. Objectives are the basic foundations of the research, as these guide the entire process of research. The list of objectives should not be too lengthy and ambiguous. The objectives should be stated clearly to indicate what the researcher is trying to investigate.

6. Research Questions or Hypotheses

In previous Units you would have studied at length about research questions and hypotheses. While conducting any research study, the researcher should aim at answering certain questions which need to be framed clearly and concisely. Questions that the research study is designed to answer are usually framed as hypotheses to be tested on the basis of evidence. This step establishes the problem and the logic underlying the research study. The preposition of a hypothesis is derived from theoretical constructs, previous researches and logical analysis. Formulation of the hypothesis helps in two ways: (i) A well-grounded hypothesis is an indication that a researcher has sufficient knowledge in the area; and (ii) The hypotheses gives direction for the collection and interpretation of the data. A good hypothesis must be testable, have explanatory power; state the expected relationship between variables, be consistent with the existing body of knowledge, and be stated as simply and concisely as possible.

7. Definition of Terms

Every research study involves certain key or technical terms which have some special connotation in the context of the study. Hence, it is always desirable to define such terms. There are two types of definitions: (i) constitutive definitions and (ii) operational definitions. A *constitutive definition* elucidates a term and perhaps gives some more insight into the phenomena described by the term. An *operational definition* is one which ascribes meaning to a concept by specifying the operations that must be performed in order to measure the concept. For example, the word 'achievement' has many meanings but operationally it can be defined as, "The scores obtained by the students in an achievement test constructed by the researcher". Apart from operational definitions, one can define some terms which have a definite meaning. Terms like 'Janshala' 'Lok Jumbish' etc. (these are terms associated with elementary education projects undertaken by NGOs in Rajasthan) should be clarified in the study if they are used in study of elementary education.

8. Methodology

In this section the details about method of research to be used for conducting the study, *viz.*, historical, description, experimental etc; sampling procedure and the data collection and analysis are described.

a) Method

In Block-I you have already studied about different types of research designs in counselling and family therapy research. In this section, the researcher will specify the method of research adopted by her or him for the proposed study. The method or type of research will specify the nature of the data and their treatment, for example in historical and philosophical researches, the nature of data and their treatment is different from other types of researches.

b) Sample

In Unit 7, you have already studied about various sampling techniques. Here the researcher will describe the population from which she or he will draw the sample and the procedure followed in drawing the sample. This section should describe the unit of sample, its size and structure. Justification should also be given for the choice of sample.

c) Tools and Techniques of Data Collection

In Block 2, you have already studied in detail about methods and techniques of data collection. It is important to note that research tool (also called *instrument*) is for the measurement of variables. In this Section, the researcher will describe the various tools which are to be used for collection of data. If the researcher is constructing the tool herself or himself, the procedure to be followed for development of tools should be described in brief. In case of standardised tools, information regarding their validity, reliability, norms etc. should be mentioned.

d) Method of Data Analysis

Here the researcher should indicate in brief the procedure to be followed for analysis of the data. The details of the qualitative and quantitative (statistical) techniques should be described in the research proposal. It is not sufficient to mention only the name of the technique, but it must be clarified for what purpose a particular technique will be used. The selection of the technique and its use should be justified in terms of objectives of the study. In case of historical research, it is necessary to throw light on the methods of internal and external criticism that are to be addressed in the analysis of historical data. In document studies, mode of content analysis should be explained in the research proposal.

9. Time Schedule

The proposals submitted to universities do not require a time schedule because the duration for Ph.D degree course is fixed. Of course, it varies from university to university and further extension may be given on request. But in case of a proposal of a research project submitted to a funding agency, mention of a time schedule is a must as such a project is time bound. Time schedule is reported keeping following points in view:

- Time required for review of literature,
- Time required for preparation of tools,
- Time required for data collection, field visits etc , and
- Time required for data analysis and report writing.

10. Budget or Financial Estimates

The proposal submitted for M.Sc. or M.Phil or Ph.D degrees do not require this section. The proposal submitted to the funding agency, needs details regarding financial estimates. It may include expected expenditure keeping following heads in view:

- Remuneration for project team, that is Principal Investigator and other members of team.
- Remuneration for secretarial staff like clerk, typist, accountant, peons etc.
- Remuneration for appointing project fellow, field investigators etc.
- Expenditure towards books, journals, tools etc.
- Expenditure towards stationery, printing, xeroxing etc.
- Expenditure for data entry, tabulation and data analysis.
- Expenditure for preparing final report.
- Expenditure for travel etc. for monitoring purpose.

11. References

It is essential that researcher should report all the authors (books, titles etc.) in the text of proposal at the end, in the reference section. Books and journals consulted should also be mentioned in this section. Use APA format, used in our course material, for referencing.

Check Your Progress Exercise 1

Note: a) Read the following questions carefully and answer in the space provided below.

b) Check your answers with those provided at the end of this Unit.

1. State two purposes of writing a research proposal or a synopsis.

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2. What are the main components of a research proposal?

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Let us take an example and try to follow all the steps that we have discussed earlier. Example:

Title of the Problem

A Study of the Impact of Advance Organizer Model (AOM) on Student Learning in Economics at Senior Secondary Level.

Introduction and Statement of the Problem

The following points need to be briefly elaborated:

- Concept of teaching.
- How to organise teaching in classroom settings.
- Various methods of organizing teaching.
- Need for alternative ways of organizing teaching.
- Models of teaching as effective ways of organizing classroom teaching.
- Concept of Models of teaching.
- Families of Models of teaching.
- Advance Organizer Model (AOM) of teaching.
- Effect of AOM on student learning in Economics at Senior Secondary Level.

Review of Related Literature

- What do previous researches tell about the impact of models of teaching on student learning?
- What do previous researches say about the impact of Advance Organizer Model on student learning in relation to:
  - Different subject areas
  - Difference in sex
  - Difference in intelligence levels
  - Difference in socio-economic background
- What are the research gaps?
- How does review of research literature help in building up a rationale for the proposed study?

Definition of Terms

- Advance Organizer Model: Advance Organizer Model is a plan or pattern of teaching, designed by Joyce and Weil (1980), based on the theory of meaning verbal learning of David P. Ausubel.
- Student Learning: It refers to academic achievement obtained by students in teacher made achievement test.
- Senior Secondary School: It refers to two year of schooling after tenth standard.

Delimitations

The Study will be delimited to:

- One senior secondary school in Delhi.
- The students of 11th standard.
- Subject of Economics.

Objectives

Main Objective:

- To study the impact of Advance Organizer Model on student learning in Economics at Senior Secondary level.

Minor (Sub) Objectives:

- To study the impact of Advance Organizer Model on student learning in terms of difference in sex.
- To study the impact of Advance Organizer Model on student learning in terms of difference in intelligence levels.
- To study the impact of Advance Organizer Model on student learning in terms of difference in socio-economic background.

Hypotheses

- There will be no significant difference in the mean achievement between experimental group taught through AOM and control group taught through conventional method of teaching.
- There will be no significant difference in the mean achievement between experimental group and control group in terms of difference in sex.
- There will be no significant difference in the mean achievement between experimental group and control group in terms of difference in intelligence level.
- There will be no significant difference in the mean achievement between experimental group and control group in terms of difference in socio-economic background.

Methodology of the Study

- **Research Method**

  For the present study, post-test only experimental-control design will be adopted.

- **Sample**

  Two sections of 11th standard of a Public School in Jammu will constitute the sample for the study.

- **Tools of Data Collection**

  — Both unit tests and comprehensive achievement test will be developed by the researcher.

  — Standardized test on intelligence and socio-economic scale will be used.

Procedure of Data Collection

Before the experimentation is carried out, both experimental and control groups will be equated in terms of previous academic achievement, sex, intelligence levels and socio-economic background. The experimental group will be taught through Advance Organizer Model (AOM) of teaching and the control group will be taught through conventional method of teaching. Eight units from the subject of Economics will be taught to the students spreading over six months. After completion of each Unit, Unit test will be administered to both the groups. At the end of the experimentation, a comprehensive test will be administered to both the groups. Data will be collected from students on unit and comprehensive tests.

Data Analysis

Data collected from students through administration of intelligence test, socio-economic scale, unit tests, comprehensive test will be analysed with the help of statistical measures like mean, standard deviation and 't' test.

Educational Implications of the Study

The study will have significant implications for improving classroom teaching-learning activities. Application of Advance Organizer Model in teaching of Economics at senior secondary school will enhance student learning.

19.4 LET US SUM UP

In this Unit, we focused on how to develop a research proposal. A research proposal or a synopsis is prepared by a researcher to be presented before the University or the funding agency prior to starting the actual research. It is just like the blueprint which directs the entire research work. A proposal comprises the title of the problem, introduction or rationale of the study, statement of the problem, review of related literature, objectives of the study, research questions or hypotheses, definition of terms, delimitations, methodology, method of data analysis and interpretation and references. If the proposal is submitted to a funding agency, one needs to mention time schedule and the budget estimate. An example of a proposal was also provided.

19.5 GLOSSARY

Constitutive definition	:	Explain a term and perhaps gives some more insight into the phenomenon described by the term.
Instrument	:	Research tool.

Operational definition : Ascribes meaning to a concept by specifying the operations that must be performed in order to measure the concept.

19.6 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress Exercise 1

1. Purpose of writing research proposal or a synopsis are given below:

   i) It communicates the researcher's plan, to all those interested in knowing the course of action in the research work, and

   ii) It serves as a plan of action.

2. The main components of a research proposal are:

   - Title of the problem,
   - Introduction or Rationale of the study,
   - Statement of the problem,
   - Review of related literature,
   - Objectives of the study;
   - Research questions/hypotheses,
   - Definitions of terms,
   - Delimitations,
   - Methodology,
   - Method of data analysis and interpretation, and
   - References.

19.7 UNIT END QUESTIONS

1. Collect at least five research proposals or synopsis submitted to any university as part of M.Sc. (Child Development/Human Develpment/ Human Development and Family Studies) or Ph.D programmes. Analyse these proposals and find out whether they contain the necessary components of a research proposal.

2. Suppose you are planning to submit a research proposal to the Distance Education Council (DEC) or the Educational Research and Innovation Committee(ERIC) of NCERT for research grant. How would you develop such a proposal?

3. Develop a research proposal on a research problem of your choice.

19.8 FURTHER READINGS AND REFERENCES

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UNIT 20 REVIEW OF LITERATURE

Structure

20.1 Introduction

20.2 Need and Purpose of Literature Search

20.3 Types of Literature Search

- 20.3.1 Print
- 20.3.2 Audio-Video
- 20.3.3 Web-based Documents

20.4 Steps Involved in Literature Search

20.5 Methods of Literature Search

- 20.5.1 Search Engine
- 20.5.2 Abstracting and Indexing Services
- 20.5.3 Bibliography

20.6 Methods of Review and their Implications

20.7 Let Us Sum Up

20.8 Glossary

20.9 Answers to Check Your Progress Exercises

20.10 Unit End Questions

20.11 Further Readings and References

20.1 INTRODUCTION

A crucial stage at the beginning of any research activity – whether undertaken to do one's own doctoral work, masters dissertation, action research, institutional research, or even any sponsored survey – is examining what kinds of studies have already been conducted in both one's own country and overseas, and what are their findings. This Unit will facilitate you in focusing your research questions with clarity, developing hypotheses for your study, developing research designs, and subsequently drawing policy implications for the research results that you obtain towards the end of your research activity. You have seen in the preceding Units how research questions are identified and research problems are focused. In this Unit, we shall discuss in detail what role review of related literature plays in your own research, how this is done, and what are its implications for your present and further research in the same area of research investigation.

Objectives

After studying this Unit, you will be able to:

- State the need for and purpose of survey of related literature in research;
- Describe the types of literature search;

- Compare various methods of literature search with appropriate illustrations;
- Describe the role different agencies play in facilitating such a search and in providing direct services of literature search; and
- Reflect on the contribution of literature review to the piece of research that you have selected to do.

20.2 NEED AND PURPOSE OF LITERATURE SEARCH

You will find in many of the books on research methods in Psychology and Social sciences a sequential chapterisation in which the chapter on 'review of related literature' appears after chapters on the meaning and scope of research, and identification of the research problem. While sequentially this may be true, you will realise that for even selecting and focusing a research problem for further investigation you need to undertake a study of some of the related published research in the area of your investigation. You are now going for an intensive review to sharpen the focus of your study, develop hypotheses, if any, and develop your research design accordingly. Therefore, literature search and survey is a continuous process in any research investigation. Let's focus on the specific purposes as to why we search and review literature in our specific areas of research study:

i) First, literature survey facilitates in locating the important independent and dependent variables of your study. For instance, in a study on the relationships between family variables and academic achievement of school children, you need to specifically know what are the different family and allied variables that exist and which operate to influence academic achievement of children and to what extent or in what way. Further, such a review will also reveal the specific theoretical base for the study, in this example involving the family and academic variables of children.

ii) Second, such a review will enlighten and facilitate you to locate what research have already taken place; what variables and their relationships have been studied; and what remains to be done. The survey will reveal what is called the 'research gap' or the areas which have not been studied so far – or which had been studied in other cultures but not your own. You may even like to find out if the variables that had been studied from one point of view or angle need to be studied from a different angle or perspective. You will also notice from literature survey that most of the studies indicated further areas of research or possibility of further research in the same area which will help you select your research problem and develop the research questions.

iii) Third, a survey of relevant literature tells the application or implications of the findings and variables involved in the research study for the practices in society. You will realise that selection of a researchable area originates from the gaps or difficulties encountered in real practice; and a full review of literature enlightens you to reflect in what way your research contributes to address practice or the problems encountered in practice. A survey of related literature fulfils both of these objectives of ascertaining research gaps and research implications.

iv) Fourth, and most crucial, is the location of the major variables of your study and their existing relationships. The same phenomenon and its variables may have been studied by different researchers from many different angles. This will suggest to you how to refocus your angle or perspective for studying the same phenomenon, and select, if not the same but similar, variables to further investigate the phenomenon under investigation. The variables involved in your study as identified by you are:

- must have some theoretical base,
- must be related to your research problem in certain ways, and
- must be related to each other within a framework.

A review of related literature facilitates in doing this, otherwise the piece of research that you will do will have no connection to what had been studied in the past, and therefore, shall remain isolated, and not form a cohesive whole.

v) Fifth, such a survey will provide you the frame of reference for your study. Put simply, this needs to be stated at the beginning section of your research report as to what has been the specific focus of your study, and from where you derived such a focus.

vi) Sixth, literature survey – both theoretical writings and research papers – will enlighten you to appreciate the significance of your study, as also tell others about its significance through your specific mention in your report. This is what we call 'significance of the study' in the final research report.

Activity: At this stage, it may be a good idea for you to take a pause, and reflect on the benefits that you may derive if you do a literature survey for *your* specific research topic on which you are already working or you are planning to identify to work further. You may write down those aspects in the space given below. This will help you to refer to such a list from time to time while conducting your research, and especially when doing literature survey.

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20.3 TYPES OF LITERATURE SEARCH

There are a variety and vast sources of related research literature available to you, and you have to focus on what types of literature you need and from which sources they can be found. The types of literature available can be in print, audio-visual or in web form. These are briefly enumerated as follows:

20.3.1 Print

The largest chunk of literature available is in print form. Since print has been present since the beginning of the process of recorded literature, it is not surprising that most of the literature today is available in this form. Printed documents containing research literature may be journals, indexes, series of review of studies (like the 'ICSSR Survey of Research' series earlier brought out by ICSSR, theses and dissertations, reference books, encyclopaedia, handbooks, and the like. Sometimes, one may require old documents or writings of ancient times recorded in palm leaves and also handwritten documents.

20.3.2 Audio-Video

Literature can also be contained in the form of audio and video programmes relating to your area of study, and these need to be listened and viewed to further focus your study and provide a direction to it. There could be printed lists of audio and video programmes circulated by concerned agencies, archives of audio and video programmes, and publications by various publishers. For instance, one of the most important source of audio and video programmes of Indian studies (relating to architecture, art, dance, music etc.) for both Indian and overseas scholars is the audio-video archives maintained by the American Institute of Indian Studies in Delhi, with branches scattered all over India and in many universities in the United States. Audio and video programmes and clips provide primary source of information in the form of interviews, presentations, real case studies, processes of an event, contextual happening of a phenomenon, and the like. We may also include still photographs and documents available in microfiche form in this category too.

20.3.3 Web-based Documents

With the advent of information technology, especially the Internet, it is easy to search for related literature through the web or on the web. You may either take the help of many search engines like 'www.google.com' or 'www.yahoo.com' or 'www.msn.com' for searching your area of interest. You may like to search through the URLs of different sites directly where lots of literature are available. You may also feed keywords on the web search which will provide you enormous literature directly or indirectly, and further sources and sites of related literature. This is possible provided you have access to Internet and also provided that the Internet connection moves fast. In most of the metros and small cities (and in most of the educational institutions) today you will find Internet kiosks which could be used at a nominal fees. The difficulties involved in a web search include that:

i) you are provided with so much solicited and unsolicited literature that it is very difficult for you to go through all, and select the best of the literature that you want;

ii) most of the scholarly literature are copyright protected, and therefore, may not be available on the web, and if available, one has to pay for getting access to them. Further, we do not have standardized procedure for international payments, though within the country it does not pose any problem;

iii) most of the literature available through web search may be 'somehow' related to your study, and may not be directly useful. This is because you search the

web through typing a few most representative keywords, and the web provides you literature not only on the combination of all your keywords, but also for each key word separately which you do not at all want or intend to receive.

Check Your Progress Exercise 1

Note: a) Read the following questions carefully and answer in the space provided below.

b) Check your answers with those provided at the end of this Unit.

1. Point out the major purposes of literature search.

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2. Name two important sources of literature, available in print form, which are widely used nationally and internationally.

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3. What are the technological sources of literature search?

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20.4 STEPS INVOLVED IN LITERATURE SEARCH

As a researcher you are always at liberty to determine the way you would like to proceed. Sometimes, the literature available in a particular area of research is so vast that it is worth to follow set procedures to get best result out of your search for related literature.

Though there is no hard and fast rule for this, the diagram or flow chart provided by William Wiersma (1986), as given below, may be useful to you to think of what you need to do.

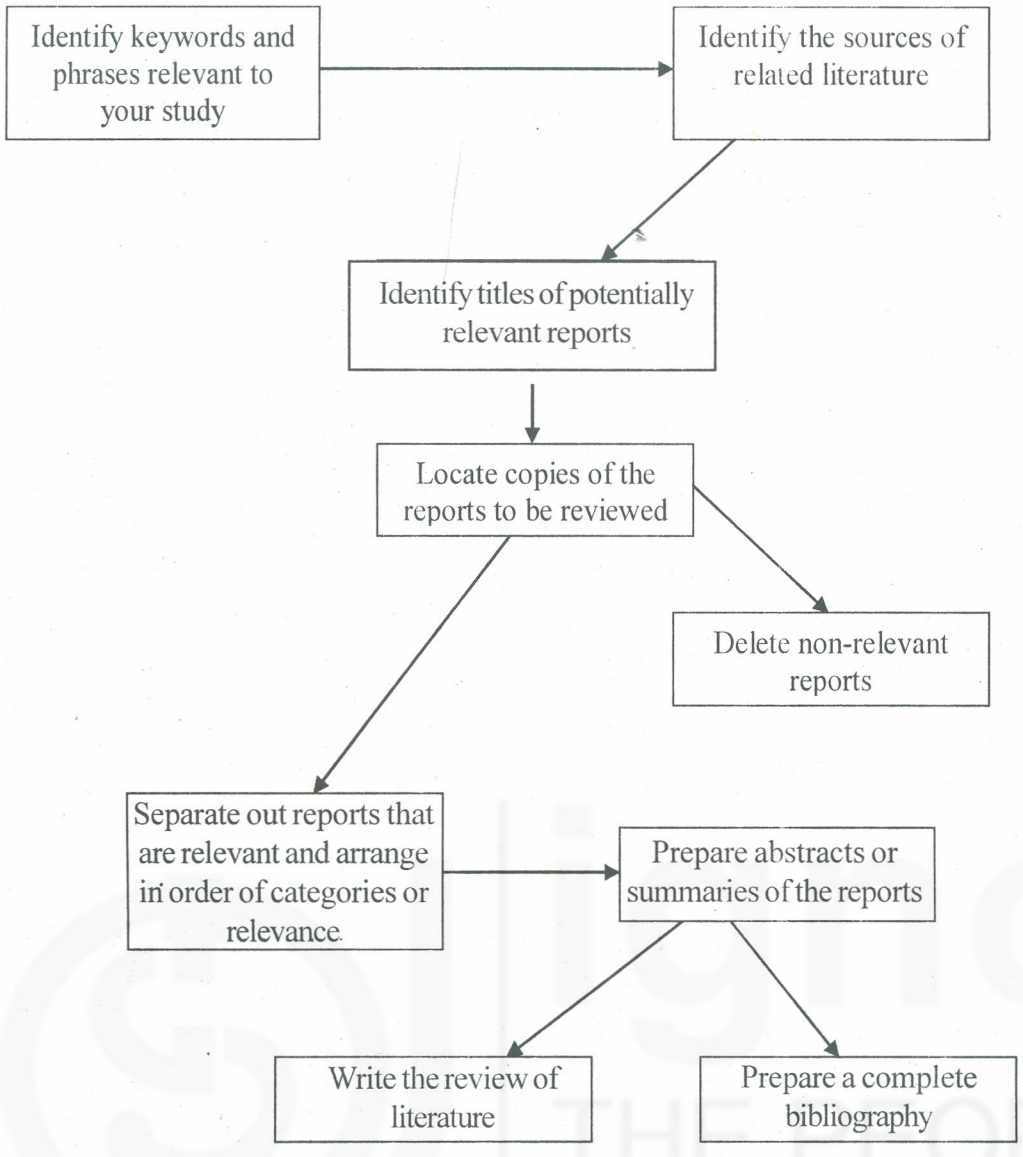


Fig. 20.1: Activities in the review of literature

Source: W.Wiersma, 1986

You may notice that while the process noted in Figure 20.1 is self-explanatory, it is delimited to printed documents. But, a little variation of this is also equally applicable to non-print and web documents. Given below is a brief description of the steps that may be followed to search and review literature. You may like to adjust the road map of your research of literature as per your requirement.

1) Choosing the Area

You need to focus specifically which area you have to search, and which micro variables are involved in this area to be searched. The first thing to do is locate your area of interest and describe some of the variables associated with it. One way to locate graphically is to list areas of study like teaching-learning, instructional design, assessment and evaluation, etc. in the left column in a piece of paper, and list elementary, secondary, higher education, non-formal education, distance education, etc. on the top row – this will provide a matrix that will help you focus what area/sub-area interests you, and what other variables could be associated with the area that you want to focus on (see Fig 20.2).

Fig. 20.2: Matrix to locate area of study

Areas	Cognitive Behavioural Approach	Psychodynamic Theory	Behavioural Therapy	Transactional Analysis	Sex Education	Higher Education	Non-Formal	Distance Education	Any Other
Teaching-Learning									
Assessment & Evaluation									
Instructional Design									
Adolescent									
Early Childhood Years									
Parent-child relations									
Couple									
Elderly									
Daughter-in-law									
Drug addicts									
Eating disorder									
Phobia									
Any other									

For instance, 'assessment and evaluation' in the left hand column and 'distance education' in the top row may provide you an area like 'assessment and evaluation in distance education' as the major focus of your study. Further elaboration may include which aspects of evaluation (whether student assessment through assignments or term-end examination or projects, or even programme evaluation, and so on) you would like to take up and for which programme of study. This will facilitate to locate the area of study and the variables associated with it.

2) Searching Relevant Titles of Literature

The next step will be, to search for titles of studies which best represent your focused area of study and the related variables. Documents that you may like to look for include published articles, unpublished articles and reports, and masters/doctoral dissertations. There are often discipline or subject specific data bases. For searching articles and reports (published, and sometimes unpublished), in this field one may consult the ERIC services or search. Published articles are identified by EJ numbering which indicates that these are included in '*Current Index to Journals in Education*'. The unpublished reports are identified as ED. The other technique of search could be through other indexes and abstracts that ERIC records: *Psychological Abstracts.* For Counselling and Family Therapy you can also search in PsychINFO, PsychNET, EBSCO host, Medline, JSTOR and so on. The dissertations can be searched through contacting DATRIX with some related keywords; which, in turn, sends directly the full literature to the researchers. A minimum number of keywords need to be provided to reduce possibility of getting unrelated or less-related literature and the cost of payment associated with it. This is also equally applicable to web search of relevant literature. Further, handbooks, yearbooks, series and encyclopaedia can be searched from the reference section in any library, and these reference books or materials are kept generally at separate (that is designated) spaces in libraries.

3) Locating Documents

The search for relevant titles leads to locating important and primary documents. The searches that you go through will provide you in most of the cases only the main or short titles of the documents related to your area of study. Rarely short annotations are provided. Therefore, what is important before you order for the full document for which you have to pay (or to spend time to search within related documents in the library to obtain copy of the full length paper) is to locate the most appropriate title and the keywords associated with it. In most of the journal articles that you locate, the abstract given at the beginning of the article will clearly tell you if the article is fully related to your study and if you need to xerox it for carrying with you for further study and reference.

20.5 METHODS OF LITERATURE SEARCH

There are various methods through which you can access/search relevant literature. We discuss below some important ones which you must try to go through to be sure that you have not left out any study which would have informed you of the areas that have already been explored and the design of those studies.

20.5.1 Search Engine

Traditionally, computers had been used to search for related literature provided through some networks. The libraries must have access to them, store in their computer database, and provide through computer networking within that library. Most of the researchers frequently use databases which were earlier (and even today) available to PCs in the libraries, and are now available directly through web search/Internet. Computer search provides for literature which are available in the shortest period (thereby reducing the time spent in searching the library documents), and which provides for very comprehensive data for you to choose from. The keywords can be combined with the help of descriptors like 'and' and 'or'. Earlier computer searches were facilitated by library staff, but now one can by oneself access computer databases which are user-friendly. If you have access to a library which has computer networks and access to international databases, you can even access relevant literature by sitting in front of the PC in your home through the university search engine. This will not only provide you access to all the databases for which the university had paid to the concerned agencies, but also provide some facilitative and common search engines and links to further access literature on your own through these gateways and for which you have to pay to the concerned agencies. The benefit that you derive is that you can from your home or workplace access without wastage of time.

20.5.2 Abstracting and Indexing Services

The various abstracting and indexing services provided by national and international agencies are extremely useful to locate relevant literature. While indexing services provide, only the index or listing of the titles of articles, reports etc., the abstracting services provide annotated bibliography (that is, further annotation to the listed title, which includes objectives, sample and tools, research design, and the main findings in brief). The major abstracting journals include: *Sociological Abstracts. Psychological Abstracts, Child Development Abstracts and the like.*

Besides abstracting of articles and reports, there have various dissertation abstracting services available. You must access and consult the most important dissertation abstracts like: *Dissertation Abstracts International* (Ann Arbor, USA), and the dissertation abstracts of Indian Council of Social Science Research (ICSSR, New Delhi), and the *Survey of Research* brought out by NCERT, New Delhi. The Association of Indian Universities (AIU) brings out a weekly chronicle/ journal '*University News*', the alternative issues of which include listing of doctoral dissertations in Humanities, Social Sciences, and Education that have been recently awarded in various Indian universities.

Indexing services provide only the index (that is, key title or keyword) to the literature that you are searching for. They may not include any annotation or abstract of papers. The most important services include *Current Index to Journals in Education (CIJE)* (Phoenix, USA), *Contents Pages in Education* (Carfax, UK) which gives contents lists of most of the journals from all over the world, and *Social Sciences Citation Index* (Philadelphia, USA). The *Dissertation Abstracts International* also provides for indexes to dissertation titles, and xerox's *Comprehensive Dissertation Indexes* provides access to DATRIX.

20.5.3 Bibliography

Bibliographies are another important source of information on both titles (bibliographies) and abstracts of papers and other works (annotated bibliographies).

Bibliographies of Doctoral Dissertations series brought out by the Association of Indian Universities, and which had been from time to time borrowed by the INFLIBNET (besides adding to it from their own sources), is an extremely useful source, besides AIU's weekly *University News* which, as noted above, lists in a separate section the doctoral dissertations recently awarded by Indian universities and institutes of higher learning.

You may also do your own bibliographic entries of whatever literature you collect for your research study. Your piece-wise bibliographic card may look like the following (this is just one example of how this can be done, and you may think of doing differently as per your convenience). For example:

Panda, S. 'Development and tryout of an online constructivist model of continuing professional development of special educators'. Fulbright post-doctoral research report, University of New Mexico, Albuquerque, 2003.

Bibliographic entries are usually made on each small size card through one's own hand writing, though researchers these days make entries in their own computer. Besides the entry as shown in the box above, you need to follow some consistency in the heads/main points that you need to record for each entry: some important ones are listed below:

- *Title* of the paper, project, dissertation, and the like.
- The *problem* or research problem that the research study addresses, and hypotheses if any.
- *Sample* of the study, its size and procedure of sampling.
- *Procedures* or design of the study.
- *Results* and conclusions of the study reviewed.

Each entry may be contained in one single A4 size page with single space typing. The entry must be recorded in a manner and with such precision that one may not look back to the main full length of the article or research report (unless required) to review literature on the one hand and support one's own research findings while writing the section 'Discussion and Implications' at the end of the research report on the other hand.

Check Your Progress Exercise 2

Note: a) Read the following questions carefully and answer in the space provided below.

b) Check your answers with those provided at the end of this Unit.

1. How does a researcher choose the area of her or his research?

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2. What is an annotated bibliography?

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3. What does a bibliography card contain?

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20.6 METHODS OF REVIEW AND THEIR IMPLICATIONS

Some of the methods or processes of review have already been noted in the preceeding sections of this Unit. What is crucial for a researcher is to examine, while reviewing related literature, how critical and relevant the review is to the concerned research problem on which one wants to do further research. One aspect which has to be kept in mind is that there is considerable variation in the quality of research undertaken and reported by previous researchers, and that every one may not have followed a set pattern of reporting their research. Even referred journals, which review and publish research articles also vary, in their style (or even headings) of presenting the papers. This is more so when one accesses literature through web searches. Therefore, one needs to be critical in one's selection, review and reporting.

One of the frameworks presented by Wiersma (1986) for critical review of each related literature, given below, should be useful to researchers to consider (see Fig 20.3):

Adequate
Incomplete
Comfusing
Missing

1.	Statement of the research problem
2.	Identification of hypotheses
3.	Description of the variables
4.	The context of the research problem
5.	Description of the individuals (subjects) involved
6.	Procedures for conducting the research

7. (Rationale for) adequacy of the procedures
8. Appropriateness of the procedures
9. Analysis procedures
10. Appropriateness of the analysis procedures
11. Overall research design
12. Consistency of results with analysis procedures
13. Description of the results
14. Statement of conclusions
15. Consistency of conclusions with results
16. Relationship of the conclusions to the context of the problem

Fig. 20.3: Check list for the elements of a research report.

Source: Wiersma, 1986.

When each article or related literature is reviewed on the basis of the above points, one will judge for oneself how best the above elements are covered in the article. Adequacy of that can be judged from the four options provided in the top row of Figure 20.3 above.

Check Your Progress Exercise 3

Note: a) Read the following question carefully and answer in the space provided below.

b) Check your answer with that provided at the end of this Unit.

1. What are the implications of selecting any method of review?

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20.7 LET US SUM UP

As you would have noticed, an important step in conducting your research is to search and review literature related to your study. The literature may include research articles, unpublished research reports, masters and doctoral dissertations, and audio and video materials. We have seen that review has two main purposes: i) selection of the research problem or research area, and ii) focusing the variables

to be investigated and developing the research design. The review also facilitates writing the last part of the research report, that is, 'discussion of results and implications'. Various types and methods of literature search and survey have been discussed, as also how the review can be utilised best in conducting your own research.

20.8 GLOSSARY

Annotated bibliography : It contains the title of the research paper, project dissertation, the research problem, sample of the study, procedures of design of the study and results and conclusions of the study.

20.9 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress Exercise 1

1. The major purposes of literature search are given below:
   a) To locate important independent and dependent variables of the research,
   b) To find out the research gap,
   c) To study the implications of the findings and variables involved in the research study,
   d) To provide a frame of reference for the research study, and
   e) To appreciate the significance of the research study.
2. Two important sources of literature available in print form, which are widely used nationally and internationally are journals and reference books.
3. Following are the technological sources of literature search:
   a) Audio-video programmes containing interviews, presentations, real case studies, process of an event, contextual happening of a phenomenon, etc.
   b) Web-based documents available with the help of search engines like *www.msn.mail.com* or *www.yahoo.com* or *www.google.com*

Check Your Progress Exercise 2

1. The first thing a researcher does, while choosing the area of research, is to identify her or his area of interest and define the different variables that would form the part of her or his research study. With the help of a matrix which has two major dimensions, namely, area of study and variables to be studied, the researcher can locate her or his research study.
2. Annotated bibliography contains the title of the research paper, project or dissertation, the research problem, sample of the study, procedures or design of the study and results and conclusions of the study.
3. A bibliography card contains the following:

a) Title of the paper, project, dissertation, and the like,

b) The research problems,

c) Sample of the study,

d) Design of the study, and

e) Results and conclusions of the study.

Check Your Progress Exercise 3

1. It is very important to select a method of reviewing literature. One finds different patterns of research reporting. One has to therefore, be critical in one's selection of method of review and reporting as per requirement of the research work undertaken by her or him.

20.10 UNIT END QUESTIONS

1. The following activities are suggested to you to carry out either on your own, or in a group comprising your peers and the counsellor.

   i) Based on the research area that you have determined or thought of, jot down the kinds and sources of literature that should be reviewed for further focusing and strengthening your own research area; and justify how, whatever you outlined, are the best means and ways to do literature survey.

   ii) Based on your research topic, the objectives of your study, and the lists of some of the related literature, prepare an annotated bibliography of those related literature, and outline in what ways will you be able to utilise them in conducting your research and writing your research report.

2. You may like to discuss with your peers and the counsellor how different or similar your list of literature and processes of review is from that of others. What implications do you draw from such a discussion for the different types of research like historical, philosophical, experimental, and the like?

20.11 FURTHER READINGS AND REFERENCES

Best, J.W. & James, V. K. (1992). *Research in education.* New Delhi: Prentice Hall of India.

Koul, L. (1997). *Methodology of educational research.* Third Revised Edition. New Delhi: Vikas Publishing House Pvt.

Tuckman, B.W. (1988). *Conducting educational research.* San Diego: Harcourt Brace Jovanovich Publishers.

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UNIT 21 RESEARCH REPORT: VARIOUS COMPONENTS AND STRUCTURE

Structure

21.1 Introduction

21.2 Significance of a Research Report

- 21.2.1 What is a Research Report?
- 21.2.2 Why to Prepare a Research Report?

21.3 Types of Research Reports

- 21.3.1 Research Articles
- 21.3.2 Abstracts
- 21.3.3 Thesis and Dissertation
- 21.3.4 Project Reports

21.4 Format of a Research Report

- 21.4.1 The Beginning
- 21.4.2 The Main Body
- 21.4.3 The End

21.5 Let Us Sum Up

21.6 Glossary

21.7 Answers to Check Your Progress Exercises

21.8 Unit End Questions

21.9 Further Readings and References

21.1 INTRODUCTION

Writing a research report is a valuable experience for a researcher. It is an essential part of the research process. Most research reports are either in the form of research articles or abstracts or theses and dissertations or project reports. These reports are the vehicle for researchers to communicate the results of an investigation to others across space and time. The research journal articles, master's degree dissertations, doctoral theses and project reports, all have the common objective – to disseminate research results and findings, ideas and information. There are, of course, other ways of communicating research results, may be through oral presentation in a seminar or conference or on-line journals on a website. Reporting research findings and results are of paramount importance in all areas of research. Because it is hardly worth doing research if it is not disseminated. The purpose of writing a research report is to communicate the ideas and information with other people.

In Block 1, 2 and 3 of this Course, we have focused upon the concept of counselling and family therapy research, variety of methods of research and the analysis and interpretation of data, and findings. But these would be of no use if the research findings are not communicated properly.

So, communication of research results should take place through research reports with a number of different audiences in mind: fellow researchers, peers, practitioners, teachers, curriculum planners and developers and the general public.

In this Unit, we will discuss the meaning of the research report, how to prepare a research report and its various components. Besides this, the significance of a research report and different types or forms of research report will also be discussed. You will gain a deeper understanding about the format of a research article, an abstract, a thesis and dissertation and a project report. It is hoped that these formats would help you in writing articles for research journals and to prepare a complete report after conducting a research work or project.

Objectives

After studying this Unit, you will be able to:

- Discuss the significance of a research report;
- Define a research report;
- Differentiate between different types of research reports; and
- Describe the style and format of a research report and the kind of information required in each part of a report.

21.2 SIGNIFICANCE OF A RESEARCH REPORT

The role of a research report is to disseminate the findings and results of a research with the readers or audiences. It is a record that reflects the investigation process or what the researcher did. In a report each important term pertaining to research problem is defined, limiting factors are recognized, procedures are described, references are carefully documented, results are objectively recorded, and conclusions are presented with scholarly spirit. It is a written document prepared by a researcher for sharing ideas, information and experiences with others.

Travers (1978, p. 410) states "Even though the author imagines Heaven as a place where one can do research without having to write a report, the requirements of this world are that research has to be described in writing".

This quotation emphasizes that writing a research report is essential to communicate the research ideas.

21.2.1 What is a Research Report?

Research articles and reports have their origins in letters written by professional researchers to the earliest scientific societies in the 17th century. These were the means of communication designed for readers familiar with the research process. Readers were concerned with all of the methodological details and theoretical implications of the research work. They also wanted detailed description to try to replicate the experiments themselves. These research reports were viewed as a contribution to the general body of knowledge.

A research report is the culmination of the research process. It is a comprehensive presentation of a researcher's activities and the results of the study. A research report could be an individual project report such as a master's degree dissertation or a thesis for doctoral degree. For example, an individual research report on "Effect of size of family on the mental health and well-being of children". A report could be a product of collaborative/group research work. For example, a report of UNICEF assisted project entitled "Nutrition and Health Status of Women and Children in Family: An Impact Study".

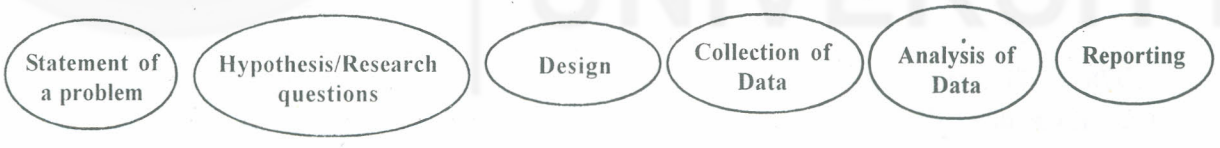
In other words, a research report is an end product of a project work. It contains the description of events, pertinent facts discovered during investigation, conclusions and recommendations. The diagrammatic representations of the sequence of events (Box 1) of a research process presented here emphasizes that the beginning is selecting a problem and preparing a research proposal and the end product is writing a 'report'.

The above discussion emphasizes that:

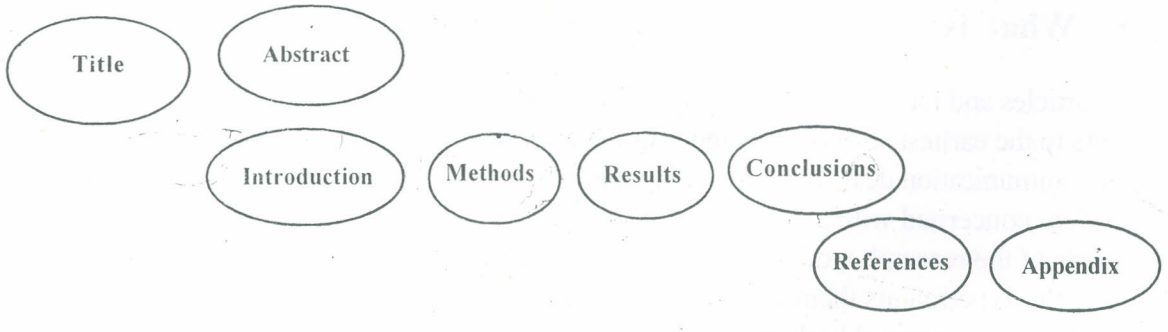
- A research report is a tangible product or output; especially a written/printed or published document for communicating specific data and ideas to an audience.
- It contains information which are observed or investigated with a specific purpose.
- It is a record for future use by other researchers.
- A scholarly outlet to disseminate ideas and information.

Box 1: Research Process and Research Report

Research Process



Research Report



Activity 1

Jot down a few points about the meaning of a research report.

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21.2.2 Why to Prepare a Research Report?

The purpose of the research report is to convey to the readers the problem investigated, the methods used to solve the problem, the results of the investigation and the conclusions inferred from the results. Research reports are used to obtain scholarly findings about professional practices, which are used as a basis for making improvement in practices and activities at the field level. The research report serves as a source of information which could be utilized for replication of research in different contexts. The information presented in a research report contributes to the body of knowledge. A report of an academic research project is usually a requirement of a post graduate course or of an advanced degree. For example, when master's degree or doctoral studies are carried on under the supervision of a guide or advisor or faculty, the student's thesis will make a contribution to the body of knowledge.

The research reports are prepared for the following purposes:

- Dissemination of research outcomes or findings,
- Used as reference material or for review of related literature to get guidance and to record and utilize the findings for further work,
- Utilization of the research recommendations for decision making,
- Replication of research methods in different contexts, and
- A medium to share research experiences and results of research.

In other words, these research reports are vehicles through which we share our research experiences, results and recommendations for future use. Besides, we may be researching for a university degree, in which case we write dissertations or theses. These reports are submitted for assessment or for partial fulfillment of a degree. Sometimes, we may carry out a research project funded by a funding agency. So, a project report is prepared. Different reports serve different purposes. A report that is appropriate for one purpose might be inappropriate for another. The following section deals with some of the basic considerations about types of research reports.

21.3 TYPES OF RESEARCH REPORTS

Researchers disseminate their research findings through research articles prepared for print and on-line journals, conference papers, theses and dissertations, and project reports. Research reports are usually written for a special group of audience such as one's fellow researchers or peer groups, practitioners, policy makers, curriculum planners and developers, teachers or the general public. Therefore research reports are prepared keeping in view different purposes and different audiences (see Box 2) and also of different length for different audiences. For example, a research study on learning environments at home and their impact on the child's academics. This could be disseminated *via* an academic journal article focusing on the theory emerging from the research, another journal article concentrating on the pupils' perspectives including case study material. A student of a post graduate programme with a title "A study of separated families in Australia" could prepare a thesis consisting of quantitative and qualitative data, a discussion on methodology and conclusions. A concise summary or an abstract of an article or a report could be prepared by a researcher so that the audience or reader can learn the rationale behind the study methodology, pertinent results and important recommendation.

Box 2: Disseminating research findings for different audiences

Types of reports		Audience
1.	Research Journals World Wide Web (On-line + Print)	Teachers/Professionals, Policy makers, Curriculum developers
2.	Abstracts World Wide Web (On-line + Print)	Teachers/Professionals, Policy makers, Curriculum developers
3.	Thesis/dissertaion (full report)	Fellow researchers, Peers, Educationists
4.	Project Reports	Funding agency, Policy Makers, the public and governments

There are debates and discussions pertaining to different formats and styles of writing a research article, an abstract, a thesis and dissertation and a project report. Before drafting a research report, you must ask yourself who will read it. It is useful to think about a variety of reports that result from a research.

This section discusses different varieties or types of reports. They are:

- Research articles
- Abstracts
- Theses and dissertations
- Project reports

21.3.1 Research Articles

The purpose of research articles is to inform the readers of what you investigated, why and how you conducted the investigation, the results and conclusions.

These articles are usually reports of empirical studies, review articles or theoretical articles.

Reports of empirical studies

These are the reports of original research. They consist of distinct sections that reflect the stages in the research process and appears in the sequence of four stages (APA, 1983 pg. 21). They are:

i) *Introduction:* development of the problem under investigation and statement of the purpose of the investigation,

ii) *Method:* description of the method used to conduct the investigation,

iii) *Results:* report of the results that were found, and

iv) *Discussion:* interpretation and discussion of the implications of the results.

Review articles

Review articles are critical evaluations of research material that has already been published. The author of a review article considers the progress of current research toward clarifying a problem by organizing, integrating and evaluating previous published material (APA, 1983). A review article appears in the sequence of the following stages:

- Defines and clarifies the problem;
- Summarizes previous investigations in order to inform the reader about the current research;
- Identifies relations, contradictions, gaps and inconsistencies in the literature; and
- Suggests the steps in solving the problem.

> **Note:** The components of review articles unlike the sections of reports of empirical studies, are arranged by relationship rather than by chronology.

Theoretical articles

The author presents empirical information incorporating the theoretical issues of a problem. Here the author finds out the development of theory in order to expand and refine theoretical constructs (APA, 1983). The sections of the

theoretical articles are usually arranged by relationship rather than by chronology. The sections or the stages of writing this type of report is like review articles.

Sometimes, you may find brief research reports, comments and replies, discussions of different types of methods (qualitative/ethnographic studies), case histories and monographs published in journal articles. These are also reported according to the guidelines discussed for journal articles.

> **Note:** You should refer to the specific journal to which you intend to submit the research articles for publication. Most journals provide guidelines pertaining to the length, headings, and format of an article such as title page, abstract, introduction, method, results, discussion, references and appendix. (We have discussed in detail about these components in the next section)

Various writing style for preparing research articles for different journals are described in manuals by Campbell, Ballou and Slade (1982), Turabian (1973) and Modern Language Association (MLA) of America (Gibaldi and Achtext, 1988) and manual of American Psychological Association (1983).

21.3.2 Abstracts

An *abstract* is a comprehensive summary of the contents of the article or a thesis/ dissertation submitted for evaluation. It allows the audience or readers to go through the contents of a journal article or a research report quickly.

These abstracts serve as one of the most useful reference guides to the researcher and keep her or him abreast of the work being done in her or his own field and also in the related fields (Koul, 1986 p. 94).

These abstracts are published in journals and periodicals related to family studies. For example, periodicals are:

i) Psychological Abstracts (1927 - Onwards)

ii) Sociology of Education Abstracts (1965 - Onwards)

iii) Dissertation Abstracts International (1952 -Onwards)

iv) Family Studies Abstracts

In other words, an abstract is a summarized form of a research report (within one or two paragraphs of about 150-200 words). It includes the problem, hypothesis or research questions, procedures, principal results and conclusions of a research work.

When to write an abstract?

A researcher writes an abstract:

- when her or his dissertation for a higher degree is accepted as a part of dissertation and thesis. For example, preparing an abstract of a doctoral (Ph.D) thesis,
- while submitting an article for publication in a journal, or
- when a research report is presented to an audience.

An abstract communicates the scope of a research article. It also presents the summarized version of a topic to be discussed by the readers or audience. It facilitates academic discussion pertaining to a specific research problem. It helps the researchers to identify the issues while going through the abstract relevant to their research from the published articles.

In other words, a good abstract summarizes the key information from every major section in the body of the report. It provides the key issues and conclusions from the report precisely. The characteristics of a good abstract are:

- Accurate,
- Self contained,
- Concise and specific, and
- Coherent and readable.

Points to remember

You should remember that an abstract is a concise rather than a detailed description of a research report.

An abstract should have the following main sections:

i) Introduction – purpose of the study, research problem and hypotheses/ research questions.

ii) Main Body – brief description of the methodology.

iii) Results – specific data considered for analysis.

iv) Conclusion – important conclusion or recommendation of the research study.

Let us see an example of writing abstract in Box 3.

Box 3: An example of writing an Abstract

Considering Justice: An Exploratory Study of Family Therapy with Adolescents

Stephanie Weiland Bowling, Lisa K. Kearney, Christine A. Lumadue, Noelle R. St. Germain.

Feminist approaches to therapy with adolescents emphasize an empowering focus on the strengths of adolescents while simultaneously insisting that therapists become aware of their own biases toward today's adolescents. However, a review of the family therapy literature finds little mention of feminist approaches for addressing injustices (e.g., family scapegoating, negative societal views of adolescents, and gender oppression) that arise in family therapy with adolescents. Therefore, this study explores clinical approaches and resources suggested by a surveyed group of self-identified feminist family therapists. In addition, we also recommend several approaches and resources that will aid family therapists in creating a more just climate for family therapy with youth.

21.3.3 Thesis and Dissertation

A thesis or a dissertation is a record of research activities. It is usually produced in partial fulfillment of the requirements of a course/programme or for an advanced

degree. It involves presenting a research problem with an argument or point of view. The methods or procedures adopted are substantiated with reasoned argument and evidence. This is written to share the issues and concerns related to a specific research problem with fellow researchers supported by discussions besides presenting the outcomes/ findings. This record is submitted to an institution/ examining committee for awarding a degree to the student. The reading audiences are committee members, fellow researchers, peer groups and teachers. These reports in the form of theses and dissertations are usually preserved by the universities that award the authors their doctoral and masters degrees. Sometimes these research studies are published in whole or in part in various educational periodicals or journals. Because the reports of many research studies are never published, a check of the annual list of theses and dissertations issued by various agencies is necessary for a thorough coverage of the research literature (Koul, 1986 p. 96).

Differences between a thesis or a dissertation and a research journal

The major difference between a thesis or dissertation and a research article is the length of the document and the contents covered. For example, researchers who publish articles are limited by the established publishing criteria or particular journal. A research article of six or eight pages, as prescribed by a specific journal, cannot include all the information contained in a 150-200 pages thesis or dissertation.

The author of a thesis or a dissertation produces a "final" manuscript; but the author of a journal article produces a "copy" manuscript. The requirements of a thesis and a dissertation are not necessarily identical to the requirements of manuscripts submitted for publication of a journal (APA, 1983 p. 189). The manuscripts of research articles are read by editors, reviewers and compositors for publication. They must conform to the format and other policies of the journal to which they are submitted.

The theses and dissertations reach their audiences in the exact form in which they are prepared. They have been prepared for a research-productive career. These theses and dissertations are submitted to the institutions or examining committee as a part of a course or programme. Therefore, they must satisfy the specific requirements prepared by an institution. Sometimes, the requirements or style mentioned by standard manuals may be or may not be considered. Universities or institutions or schools who have launched a course or programme should provide written guidelines and a format which explain all modification to APA style. The thesis or dissertation in its original form is not acceptable to journals but the condensed versions of doctoral dissertations may appear as journal articles.

21.3.4 Project Reports

In the light of the varied types and purposes of projects, the format of a project report will depend upon the level at and audience for which the research is done. For example, the academic research project for a degree and projects funded by funding agencies like UNICEF, World Bank or UNESCO differ in their formats.

Public and private research funding agencies sponsor research projects either to an individual or to a team or group of researchers through an institution. These agencies require researchers applying for financial help to carry out a project, to submit a research proposal at the outset and a project report at the end/or after completion of a project within a specified time. The final report (a large scale or a small scale) of a research project funded by an agency is a written document

that the researcher sends to the funding agency. It may take the form (greatly reduced in content and length) of an article in a professional journal. The organization of the content and structure of a project report and academic theses might look alike.

These research reports may vary in length. While preparing a project report one should bear in mind the audience for the report. For example, scientific or general report is prepared as per the theme and audience of a project work.

Possible formats for a project report are as follows:

Example 1

- Executive summary — A synopsis of the research focusing on its practical implications.
- Aims and objectives — As specified by the funder or researcher.
- Context — A discussion of the organization and its work and the reasons for undertaking the project work.
- Results — An account or description of what the research project discovered.
- Recommendations — A list of actions to be implemented.

Example 2

- Title page
- List of contents
- Tables and figures
- Project objectives
- Methods and procedures used for collection of data
- Budget
- Findings
- Conclusions and recommendations
- Acknowledgements
- Appendices

Check Your Progress Exercise 1

Note: a) Read the following questions carefully and answer in the space provided below.

b) Check your answers with those provided at the end of this Unit.

1. Write the characteristics of a good abstract.

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2. Explain the major differences between a research journal and a dissertation.

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21.4 FORMAT OF A RESEARCH REPORT

A *research report* is a record of the research activities and the results of the study. Like the records of history, it permits the reader or audience to reconstruct what happened without distortion. The research report includes a beginning, followed by a description of the research undertaken, and ending with ideas for future studies. There are several style or style manuals available for presentation of a research report. These manuals provide guidance to the researcher as to the specific rules on style and format to be followed while writing a research report. Some universities or institutions provide guidelines about the format to which their theses, dissertations or research papers must conform. But all formats are somewhat similar to the following *outline* (Koul, 1986 pg 344) which comprises three main sections:

i) the preliminary section,

ii) the body of the report or text, and

iii) the reference section.

Each main section consists of several sub-sections. Let us go through the general format of the research report as described by Koul (1986).

- **Preliminary Section**

  1. Title page
  2. Preface, including acknowledgements (if necessary)
  3. Table of contents
  4. List of tables
  5. List of figures, maps or illustrations (if any)

- **Body of the Report or Text**

  a) ***Introduction***

     1. Statement of the problem
     2. Analysis of previous research
     3. Relation of present problem to theoretical position of the previous research

4. Significance of the problem
5. Delimitations of the study
6. Assumptions underlying hypotheses
7. Statement of hypotheses
8. Definition of important terms

b) ***Design of the Study***

1. Procedures employed
2. Sources of data
3. Data gathering instruments
4. Sampling and methods of gathering data

c) ***Analysis and Interpretation of the Data***

1. Text
2. Tables (if any, are usually included into the text)
3. Figures (if any, are usually included into the text)

d) ***Summary and Conclusions***

1. Brief statement of problem and procedures
2. Principal findings and conclusions with their practical implications (if any)
3. Suggestions for further research

- **Reference Section**

1. Bibliography
2. Appendix
3. Index (if any)

Source: Koul, L. *(1986): Methodology of Educational Research P* 344 & 345.

Now, let us discuss each section of a research report.

Sections of a Research Report

The number of sections in a final report and the order in which they appear above almost never vary. Almost all research reports contain the same components. The sections could be presented in three major headings. They are:

- The beginning,
- The main body, and
- The end

21.4.1 The Beginning

The beginning of a report is crucial to the entire work. The beginning or the preliminary section of the research report contains the following items, more or less in the order given below:

- Cover or Title Page
- Preface including Acknowledgements
- Table of Contents
- List of Tables
- List of Figures and Illustrations
- Glossary

Let us describe in brief each of the above six items of the preliminary section of a report.

i) Cover or Title Page

The cover page (and the second cover page) is the beginning of the report. Though different colleges, universities and sponsoring institutions prescribe their own format for the title page of their project report or thesis, generally, it indicates the following in the downward vertical order:

- title of the topic,
- relationship of the report to a degree, course, or organisational requirement,
- name of the researcher/author,
- name of the supervisor/guide (if required),
- name of the institution where the report is to be submitted, and
- the date of submission.

The title page should carry a concise and adequately descriptive title of the research study. Preferably, it should not contain more than 12 to 15 words. The title should briefly convey what the study is about. Researchers tend to make errors in giving the title by using too many redundant and unimportant words.

Here, we have drawn a list of a few titles of research reports and doctoral theses:

a) A Critical Analysis of Textual Material for Principles of Accounting and its Translation for Distance Education

b) Developing Self-Instructional Material

c) Planning, Design and Development of one Self-Instructional Unit in Print

d) A Study of the Role of Distance Education in Zimbabwe in meeting the Manpower Training needs of the Education System with particular reference to the Bachelor of Education, Educational Administration, Planning and Policy Studies Programme intake II, in ManicaLand Province

e) The Zimbabwe Government Correspondence Primary School: A Case Study

In title (b), it is not clear at which level the researcher is developing self-instructional material. Title (d) has 40 words, whereas we have stated earlier that the title

should be brief and concise. On the other hand, the title of the project(s) is comprehensive and precise.

The title should be written either in bold letters or upper-lower case and be placed in the central portion of the top of the cover page. Here, we have reproduced the cover page of a research report in Box 4.

Box 4: An Example of a Cover Page *(fictitious example)*

Family Therapy: Its Impact on Families Dealing with Bereavement

By

ALISHA DUTTA (M.SC.)
Enrollment Number 029114729

Supervisor

D.K. VARSHNEY

Project Work Submitted

in partial Fulfillment of the Requirements for the
Master of Family Studies Degree

New Delhi

June, 2009

Note the other points mentioned on the cover page. Also observe the placement of these points.

ii) Preface including Acknowledgements

Preface is not a synonym for either an Acknowledgement or a Foreword. A preface should include the reasons why the topic was selected by the researcher. It may explain the history, scope, methodology and the researcher's opinion about the study. The preface and acknowledgements can be in continuation or written separately. This page follows the inner title page. It records acknowledgement with sincerity for the unusual help received from others to conduct the study. The acknowledgement should be non-emotional and simple.

Box 5: A Sample of an Acknowledgement Page

Acknowledgement

I would like to express my thanks to UNESCO/IICBA staff for providing assistance both during the course work and the project work of the MFS Programme.

I would also like to thank Mr. Walelign Admassu for his invaluable suggestions during the progress of the project. My thanks also goes to Mr. Tegegne Sishaw for installing SPSS 11.0 software in my computer and for providing other relevant materials. I want to thank Mr. Adem Kedir for assisting in the interpretation of statistical results.

Finally, I am indebted to Mrs. Genet Admasu for doing the hard work of typing the manuscript.

iii) Table of Contents

A table of contents indicates the logical division of the report into various sections and subsections. In other words, the table of contents presents in itemized form, the beginning, the main body and the end of the report. It should also indicate the

page reference for each chapter or section and subsection on the right hand side of the table. Sample table of contents is given below:

Box 6: Sample Table of Contents

Sample I

Chapter 1	Introduction	1
Chapter 2	Review of Related Literature	18
Chapter 3	Design and Methodology of the Study	37
Chapter 4	Results	92
Chapter 5	Interpretation of Results	118
Chapter 6	Summary & Conclusion	158

Sample II

Table of Contents		**Page**
Acknowledgement		i
Abstract		ii
Table 1		40
Table 2		45
Table 3		47
Figure 1		53
Chapter 1		
Introduction		1
1.0	Introduction	1
1.1	Background of the Study	1
1.2	Statement of the Problem	4
1.3	Basic Research Questions	5
1.4	Objectives of the Study	6
1.5	Significance of the Study	6
1.6	Definitions of Terms Used in the Study	8
Chapter 2		
Review of Related Literature		11
2.0	Introduction	11
2.1	The Institutional Support for the Bereaved	12
2.2	Family Networks	20
2.3	Individual Therapy for Members	29
2.4	Collaborative Therapies for Members	35
Chapter 3		
Design of the Study		43
3.0	Introduction	43
3.1	Description of the Research Design	49
3.2	Population and Sample	54

Chapter 4		
Results and Discussion		62
4.0	Introduction	62
4.1	Gender Differences in Perceptions of Family members about Bereavement: Z Test Results	65
4.2	Observations of Family Settings and Community Welfare Centres	69
Chapter 5		
Conclusions and Recommendations		
5.1	Summary and Conclusions	74
5.2	Recommendations	76
References		90

(iv) List of Tables

The table of contents page is followed by the page containing a list of tables. The list contains the exact title of each table, table number and the page number on which the table has appeared. We provide you in Box.7 an example of a list of tables.

Box 7 : Example of List of Tables

Tables	Pages
I. Location, population and sample	47
II. Two sets of experimental data with sums, means and squares	52
III. Calculation of V1 of data of table – II	55

(v) List of Figures and Illustrations

The page 'List of Figures' comes immediately after the 'List of Tables' page. You will observe in the following example that the list of figures is written in the same way as the list of tables.

Box 8 : Example of a List of Figures

Figures	Pages
1. Techniques utilized in the Therapy	49
2. Equipment used in Filming Therapy sessions	59

(vi) Glossary

A *glossary* is a short dictionary, explaining the technical terms and phrases which are used with special connotation by the author. Entries of the technical terms are made in alphabetical order. A glossary may appear in the introductory pages although it usually comes after the bibliography. An exemplar glossary is given in Box 9.

Box 9 : Example of Glossary

GLOSSARY

Algorithm	A step-by-step procedure consisting of mathematical and/or logical operations for solving a problem.
Artificial Intelligence (AI)	The study of computer techniques that mimic certain functions typically associated with human intelligence.
Back-up	Duplication of a program or file on to a separate storage medium so that a copy will be preserved against possible loss or damage to the original.
Benchmark	A measured point of reference from which comparisons of any kind may be made, often used in evaluating hardware and software, in comparing them against one another.
Command	An instruction to the computer which is not a part of a program.
Cybernetics	The field of science involved in comparative study of the automatic control or regulation of, and communication between machine and man. These studies include comparisons between information-handling machines and the brains and nervous systems of animals and humans.
Data	Input to a computer which is processed by mathematical and logical operations so that it can ultimately be output in a sensible form.
Data Processing	The input storage, manipulation and dissemination of information using sequences of mathematical and logical operations.
Electronic Spreadsheet	Software that simulates a worksheet in which the user can indicate data relationships. When data are changed, the program has the ability to instantly recalculate any related factors and to save all the information in memory.
Graphics Package	A programme that helps draw graphs.
Hard Copy	Output of information in permanent form, usually on paper, as opposed to temporary display on a CRT screen.
Ink Jet Printer	A type of printer in which dot matrix characters are formed by ink droplets electrostatically aimed at the paper surface.
Laser Printer	A printer that uses a laser beam to form images on photo-sensitive drums. Laser printers are now used as output devices for computers.

Megabyte (MB or M-Byte)	1024 kilobytes, or 1024 x 1024 bytes
Personal Computer	A moderately priced, general use computer designed principally for a single user in a home or small-office environment.

(**Source :** Balagurusamy E: Selecting and Managing Small Computers)

(vii) List of Abbreviations italics

To avoid repeating long names again and again, a researcher uses abbreviations. Since abbreviations are not universal, it is necessary to provide the full form of the abbreviations in the beginning. An exemplar list of abbreviation is given Box 10 below.

Box 10 : Example of list of abbreviations

ABBREVIATIONS

AIMA	All India Management Association
AIR	All India Radio
APPEP	Andhra Pradesh Primary Education Project
AVRC	Audio Visual Resource Centre
ATI	Administrative Training Institutes
BEL	Bharat Electronics Limited
BEO	Block Education Officer
BRC	Board Resource Centre
BSE	Board of Secondary/Senior Secondary Education
CABE	Central Advisory Board of Education
CBT	Computer Based Training
CEO	Circle Education Officer
CIET	Central Institute of Educational Technology
CRC	Cluster Resource Centre
CSS	Centrally Sponsored Scheme
DIET	District Institute of Education and Training
DIT	District Institute of Training
DD	Doordarshan
DOE	Department of Electronics
DoSpace	Department of Space
DOT	Department of Telecommunications
DPEP	District Primary Education Program
DPEPII	District Primary Education Program : Phase II
EFA	Education for All
EMRC	Educational Media Resource Centre

Check Your Progress Exercise 2

Notes: a) Read the following question carefully and answer in the space provided below.

b) Check your answer with that provided at the end of this Unit.

1) List the major parts of the 'beginning' of a research report. Describe briefly the importance of each part.

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21.4.2 The Main Body

The main body of the report presents the actual work done by an investigator or a researcher. It tells us precisely and clearly about the investigation/study from the beginning to the end. The methodology section of the final report should be written in the past tense because the study has been completed. The report categorically avoids unnecessary details and loose language – we shall examine this point in detail in this section. The table of contents for the report outlined six sections/chapters in the main body. These are:

- Introduction
- Review of Related Literature
- Design of the Study
- Analysis and Interpretation of Data
- Main Findings and Recommendations
- Summary

Besides the logicality of sections/chapters in the main body there are certain other important aspects which need our attention. They are the style of writing, the design and placement of references and footnotes, the typing of the report, and the tables and figures.

Let us elaborate these points in the following sub-sections.

Chapters and their Functions

We will discuss the chapterisation of a thesis or a research report under six heads as noted above. Let us begin with introduction which is usually the first chapter.

1. Introduction

This is the first chapter of a thesis or a research report. It introduces the topic or problem under investigation and its importance. The introductory chapter :

- gives the theoretical background to the specific area of investigation,
- states the problem under investigation with specific reference to its placement in the broader area under study, describes the significance of the present problem,
- defines the important terms used in the investigation and its reporting,
- states precisely the objective(s) of the study,
- states the hypothesis/hypotheses of the study that would be tested through statistical analysis of data – however, in philosophical and historical research there is no need to formulate and test a hypothesis, and
- defines the scope and limitations of the investigations.

Statement of the problem: A clear and definitive statement of what was studied.

Purpose of the study: A brief statement of why the study was done; a reason for the research or potential uses for or contribution to be made by the results.

Need for the study (significance of the study, justification for the study): An elaboration of the purpose of undertaking the study and establishing the importance of the problem.

Scope of the study: The scope of the study as identified by the researcher including information on what subjects and variables were studied; what data gathering instruments were used; and the details about the methods and the time and duration of the study.

Limitations: An indication of the inherent weaknesses in the study; factors that could not be controlled adequately and could have affected the results. For example, a researcher for completing a course on project work may not be able to interview hundreds of people.

Statement of objectives: The objective(s) of the study stated precisely.

Definition of terms: A list of important terms used during the investigation and reporting.

Although these sub-sections are common, it is not necessary to follow the given order strictly; there may be variations in the order of the sub-sections. Sometimes the review of literature related to the area under investigation is also presented in the first chapter and is placed immediately after providing the theoretical background to the problem. Many researchers use review to argue the case for their own investigation. In experimental research it becomes essential to review related studies to formulate the hypotheses.

2. Review of related literature

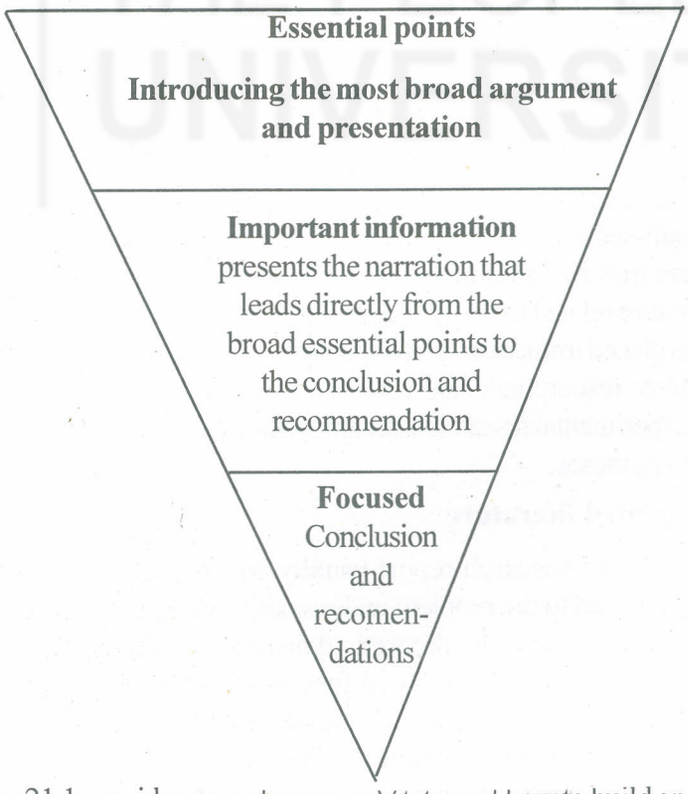
The second chapter of a research report usually consists of the review of the important literature related to the problem under study. This includes the abstraction of earlier research studies and the theoretical articles and papers of important authorities in the field. This chapter has two functions. As you have read in earlier Blocks, while selecting a problem area or simply a topic for investigation, the researcher goes through many books, journals, research abstracts, encyclopedia, etc. to finally formulate a problem for investigation. The review of related literature is the first task for a researcher in order to decide on a specific problem for

investigation. It also helps in formulating the theoretical framework for the entire study. Secondly, such a review helps the researcher to formulate the broader assumptions about the factors/variables involved in the problem and later develop the hypotheses for the study.

> **Note :** While reviewing literature, a researcher has to be familiar with reference books that list the abstracts of studies done in the field of family studies, for example, ERIC, Psychological Abstracts and the research journals and books. Now a days most libraries have access to the entire ERIC file, Annual Cummulation of Abstracts, the Family Studies Index, EBSCO which includes Journal of Family Studies, Journal of Marriage & Family, Family Relations, etc. Searching data bases such as ERIC Psych INFO, PsycNET, EBSCOnost, Medlines JSTOR to identify references related to a study is very fast, quick and useful. By giving the computer the key words related to research one receives a list of references and the abstracts of studies pertinent to a project.

Besides these, the review also indicates the understanding of the researcher in relation to the area under investigation, and thus his/her efficiency to carry out the study. While reviewing literature in the area concerned, you have to keep in mind that the (reviewed) literature has to be critically analysed and summarised in terms of agreements and disagreements among the authors and researchers in order to justify the necessity for conducting your investigation. Researchers may make two types of errors in their review exercises. Many simply report the findings of one study after another in sequential order without showing how the findings are connected with one another. Others report on studies that are at best only marginally related to their own hypothesis.

One way to consider the presentation of the results of the research review is to conceptualise an inverted triangle (Fig. 21.1).



The figure 21.1 provides a graphic representation of how to build an argument while

Fig. 21.1: The inverted triangle for reviewing related research studies

reviewing literature and how to present the very focused conclusion and recommendation in a report.

For example, a review of the research on Literacy in Emakulam, India might move through a progression of narrowing elements like that presented in figure 21.2. If the researcher is in the progressive narrowing or platforming, of the topics and issues presented in the review, then any reader could move from one section to the next with sufficient information and knowledge to understand rationally the substance of the review.

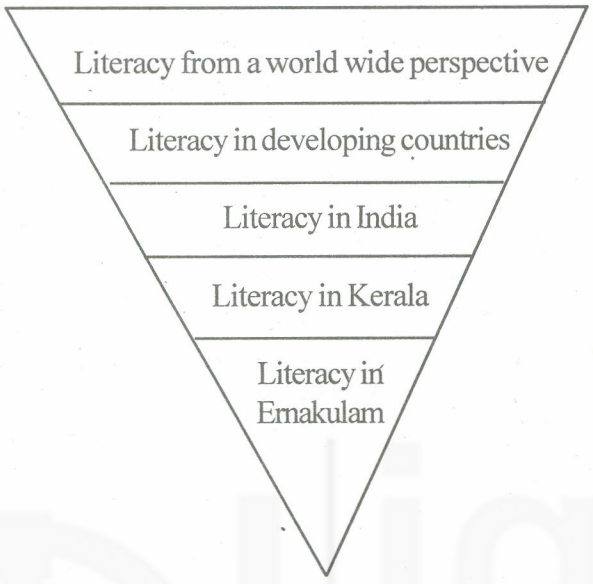


Fig. 21.2: The inverted triangle - Literacy in Ernakulam, India.

3. Design of the study

The design of a study is usually described in the third chapter of the report. Broadly speaking, this chapter provides a detailed overview of "how" the study was conducted. This chapter is generally called 'Methodology' or 'Method'. The various sub-sections include:

i) description of the research methodology, that is – descriptive, experimental, etc.;

ii) variables: the dependent, independent and intervening variables with their operational definitions;

iii) sample: defining the population, and the sampling procedure followed to select the sample for the present study;

iv) listing and describing various tools and techniques used in the study, like questionnaires, attitude scales, etc., whether these have been adopted or developed by the investigator, their reliability, validity, item description, administration and scoring, etc.;

v) describing the statistical technique used in the analysis of data including the rationale of the use and method of data analysis. In philosophical and historical researches, for example, this type of sub-section may not be there.

4. Analysis and interpretation of data

This is the fourth chapter of the research report. It is the heart of the whole report, for it includes the outcome of the research. The collected data are presented in tabular form and analysed with the help of statistical techniques – parametric and non-parametric. The tables are interpreted and if necessary, the findings are also presented graphically. The figures do not necessarily repeat the tables, but present data visually for easy understanding and easy comparison. Data may be presented in parts under relevant sections. The analysis of the data not only includes the actual calculations but also the final results. It is essential that at each stage of analysis the objective(s) of the study and their coverage is taken care of. This chapter also presents the details about the testing of each hypothesis and the conclusions arrived at. This gives the reader a clear idea regarding the status of the analysis and coverage of objectives from point to point.

5. Main findings and conclusion

This is usually the fifth chapter in a research report. The major findings of the study analysed and interpreted in the preceding chapter are precisely and objectively stated in this chapter. The fourth chapter contains such presentations as only a specialist or a trained researcher can understand because of the complexities involved; but in the fifth chapter the major findings are presented in a non-technical language so that even a non-specialist such as a planner or an administrator in the field can make sense out of them.

The main findings are followed by a discussion of the results/findings. The major findings are matched against the findings of other related research works which have already been reviewed in the second chapter of the report. Accordingly, the hypotheses formulated in the first chapter are either confirmed or discarded. In case the null-hypotheses are rejected, alternative hypotheses are accepted. If the findings do have any discrepancy in comparison with those of other researches, or if the findings do not explain sufficiently the situation or problem under study, or if they are inadequate for generalisation, explanations with proper justification and explanation have to be provided.

The next task in this chapter is to provide implications of the findings and their generalisations. The implications should suggest activities for and provide some directions to the practitioners in the field. Unless these implications are clearly and categorically noted, it becomes difficult for the practitioners to implement them on the one hand, and on the other research findings do not get utilised at all even if they have been recorded in a report.

The implications follow a presentation/listing of the limitations of the study on the basis of which suggestions are made to carry out further investigation or extend the study from where it has reached.

6. Summary

Researchers include a summary along with the research report as the last chapter or as a pull-out to the report itself. It sums up precisely the whole of the research report right from the theoretical background to the suggestions for further study. Sometimes researchers get tempted to report more than what the data say. It is advisable to check this tendency and be always careful to report within the framework provided by the analysis and interpretation of data, i.e., within the limits of the findings of the study.

Check Your Progress Exercise 3

Notes: a) Read the following question carefully and answer in the space provided below.

b) Check your answer with that provided at the end of this Unit.

1) Comment briefly on the uses of (a) review of literature, and (b) conclusion in a research report.

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Writing Style

The style of writing a research report is different from other writings. The report should be very concise, unambiguous, and creatively presented. The presentation should be simple, direct and in short sentences. Special care should be taken to see that it is not dull and demotivating.

Statements made should be as precise as possible. They should be objective and there should be no room for subjectivity, personal bias and persuasion. Similarly, over generalisation must by avoided. There is no place for hackneyed, slang and flippant phrases and folk expressions. The writing style should be such that the sentences *describe* and *explain* the data, but do not try to *convince* or *pursuade the reader.* Since the report describes what has already been completed, the writing should be in the past tense.

In the case of citations, only the last name of the author is used, and in all cases academic and allied titles like, Dr., Prof., Mr., Mrs., Ms. etc. should be avoided. Some authors recommend that the use of personal pronouns like "I", "We" etc., should be avoided. There is however no hard and fast rule in this case. Similarly, a large number of research reports use passive voice which is strongly discouraged by the linguists. Similarly, abbreviations of words and phrases – like IGNOU, DDE, NIRD, etc. – should be used to avoid long names repeatedly inside the text, as well as in figures, tables, and footnotes.

Special care should be taken while using quantitative terms in a report, such as *few* for number, *less* for quantity etc. No sentence should begin with numericals like "40 students", instead it should start as "Forty students". Commas should be used when numbers exceed three digits – 1, 556 or 523, 489, etc.

Language, grammar and usage are very important in a research report. The *Roget's Thesaurus, Handbook of Style* by Campbell and Ballon (1974), and a good dictionary would be of much help. MS-Word software provides good

support to:

- Spelling and Grammar
- Thesaurus
- Auto Correct
- Auto Summarise

A researcher is advised to use these features on the MS-Word to make the report error free. It is always advisable to show the report to learned friends or language experts for correction before it is finally typed. Revision is an important feature of good report writing – even experienced researchers with many publications revise their reports many times before giving them for final typing.

Footnotes/In-text References

Articles, papers, books, monographs, etc. quoted inside the text should always be accompanied by relevant references, that is the author and the year of publication; for example, (Mukherjee, 1988). If a few lines or sentences are actually quoted from a source, the page number too should be noted; for example, (Mukherjee, 1988: 120-124). Besides, full reference should be placed in the Reference section of the report. The usual, though traditional style of giving references is to place them as the footnotes on the relevant page(s). The footnotes are serialized inside the text and in the footnotes of each chapter. These days, footnotes are usually avoided. However, they perform many functions. They provide ready reference on the page of the text itself to avoid the botheration of consulting the references at the end of the report off and on. In certain cases, footnotes include explanatory statements, full form of the abbreviations, extra justifications with reference to a portion of the text that may be read by a reader if needed, that is if the text is not clearly understood. However, precision and necessity should be the main guidelines to bring in these types of footnote.

Footnotes, as noted earlier, may be serialised as 1, 2, 3, 4, etc., within a chapter or be inserted at the end of the sentence concerned in parentheses as (5:23) which implies reference number 5 and page number 23, the full reference of which is given at the end of the chapter or in the reference section at the end of the report. Footnotes are always double-spaced between each other, though each footnote is typed single-spaced. *Ibid.* in the footnote refers to the same work and the reference that precedes it. For example, consider the following references:

5 John, W. Best, Research in Education (New Delhi: Prentice Hall of India, 1993), p.146.

6 *Ibid.* P.146 (This indicates the same work and the same page as above)

7 *Ibid.* P.148 (This indicates *the same work as* above but a different page).

Ibid. in Latin means *the same. op. cit.* (in Latin means *the work cited) is* used in a footnote when another reference to the same work is made on the same page but not consecutively. Consider the following example:

3 Frend N. Kerlinger, *Foundations of Behavioural Research,* New York: Holt, Rinehart & Winston, 1973, p. 256.

4 William G. Campbell and Stephen V. Ballon, *Form and Style: Theses, Reports, Term Papers,* Boston: Houghton Mifflin Co., 1974, p.15.

5 Kerlinger, *op.cit.,* p. 258.

Reference "5" is the same as reference "3", except that the page references differ in the two cases.

In case there are more references to the text on the same page of the original text which has been listed once, they may be listed/entered by the abbreviation *loc. cit.*

Example: Campbell and Ballon, *loc. cit.*

Footnote is also a feature of MS-Word 97, under the pull-down menu of 'Insert'. It allows serialisation as well as customised footnote symbols. The menu can be used to make footnotes error free.

In preparing the footnote references, another factor to be considered is the abbreviations of words and expressions and their right placement. While writing a research report, abbreviations may be used to conserve space in references or footnote references. If a researcher is not familiar with the abbreviations, he or she should consult the relevant literature as and when required. In the following table (Table 21.1) a comprehensive list of abbreviations has been given for ready reference (the Latin abbreviations have been italicised).

Table 21.1 : List of some important abbreviations used in footnotes and bibliographies

Words	Abbreviations
About (approximate date)	*c. (circa)*
Above	*supra.*
And the following	*et seg.*
And the following	*f., ff.*
And others	*et al.*
Article, articles	art., arts.
Article, articles	*infra.*
Book, books	bk., bks.
Chapter, chapters	chap., chaps.
Column, columns	Col., Cols.
Compare	*cf.*
Division, divisions	div., divs.
Editor, editors	ed., eds.
Edition, editions	ed., eds.
For example	e.g.
Figure, figures	fig., figs.
Here and there (scattered)	*passim*
Illustrated	Ill.
Line, lines	l. ll.

Manuscript	ms.
Mimeographed	mimeo.
No date given	n.d.
No name given	n.n.
No place given	n.p.
Number, numbers	no., nos.
Page, pages	p., pp.
Part, parts	pt., pts.
Paragraph in length	(….)
Paragraph, paragraphs	par., pars.
Previously cited	*op. cit.*
Revised	rev.
Same person	*idem.*
Same reference	*ibid.*
Section, sections	sec., secs.
See	*vide*
The place cited	*loc. cit*
Thus	*sic.*
Translated	trans.

Typing and Production

Typing of dissertations, research reports, project reports etc. needs greater care than other typed documents. In a research report, one does not expect overwriting, strikeovers, erasures and insertions.

Before typing the report, it is necessary to check whether the handwritten report, that is the manuscript is in a proper shape. Whether the manuscript of the report is typed by a typist or by the researcher himself or herself, a clear and comprehensible manuscript makes typing easy. Too many additions and corrections make the manuscript crammed, and a crammed manuscript makes typing difficult and time consuming. Only one side of the paper should be typed and typing should be double spaced. Space should be left on each side of the paper as follows:

- left side margin
- right side margin
- top margin
- bottom margin

If there is a lengthy quotation, it should be indented and typed in single space. At the end of each line, words should be divided as per convention. A dictionary which shows syllabification should be consulted, if words are to be broken at all. Unlike the lengthy quotations, short quotations of three/four lines may be included in the text within quotation marks.

Subject to access to a computer and word processing software, it is better to prepare the report on a computer. It has several advantages, for example, you can:

- edit time and again without incorporating new errors which is what happens when you use a manual typewriter,
- define your margin – top, bottom, left and right easily,
- define pages in landscape or portrait size, particularly for tables and diagrams,
- choose out of about 70+ fonts – shapes of letters and type sizes from the smallest 8 point to the large 72 point,
- check spelling, grammar, synonyms and antonyms,
- choose illustrations from the clip-art file, and
- can index (alphabetical order) the references automatically.

If you happen to have access to Excel, it can automatically produce graphs and charts that can be transferred to Word document.

Finally, the computer output can be taken out in a Dot Matrix, Ink Jet or Laser printer. The Ink Jet and Laser Printers are the current standard in the market. They produce quality printouts that make reading easy.

Tables and Figures

Tables: Preparation and appropriate placement of tables in the text are equally important. They need careful attention from the researcher. Tables help the readers to get a quick view of the data and comprehend vast data at one go. However, tables should be presented only when they are necessary. Too many tables may confuse the reader, instead of facilitating his/her reading. As such you need to be selective in placing tables in the report.

If data are too complicated to be presented in one table, several tables may be used to give a clear picture of the data in proper sequential order. Tables, if small, may accompany the textual material, and if large, should be put on one full page without mixing them with the text. All the tables should be numbered serially in the text, so that they may be quoted or referred to with the help of those numbers conveniently.

If a table is large, it should continue on the next page with the table title repeated on the top of the next page; otherwise, tables can be typed in smaller fonts like 8pt. or 9pt. The table itself is centered between the two margins of the page, and its title typed in capital letters and is placed in pyramid size and preferably numbered in capital Roman numerals like I, II, III etc. The title of the table should be brief but self-explanatory.

Figures: Figures are necessary when the data is to be presented in the graphic form. They include charts, maps, photographs, drawings, graphs, diagrams, etc. The important function of a figure is to represent the data in a visual form for clear and easy understanding. Textual materials should not be repeated through figures unless very necessary.

Figures should be as simple as possible and the title of each figure should precisely explain the data that has been presented. Usually, a figure is accompanied by a table of numerical data. Again, figures are presented only after textual discussion and not the other way round. The title design of figures should be followed consistently throughout the report. Every first letter of a word of the title should be in capitals, and figures should be numbered in Indian numerals like 1, 2, 3 etc. And the title, unlike for tables, is presented below the figure.

21.4.3 The End

The end of the report consists of references and an appendix/appendices. References come at the end after the last chapter of the report. The last section labelled references appears at the top of a new sheet of paper. The reference section is a list of the works that have been cited in the report/thesis. All references quoted in the text are listed alphabetically according to the last name of the authors. The works of the same author should be listed according to the date of publication with the earliest appearing first. It is different from a footnote in the sense that the latter is a specific reference to only one or more citations on a particular page.

Bibliography and References

Research reports present both bibliographies and references. Although many researchers use these terms interchangeably, the two terms have definite and distinct meanings. A *bibliography* is a list of titles – books, research reports, articles, etc. that may or may not have been referred to in the text of the research report. *References* include only such studies, books or papers that have been actually referred to in the text of the research report. Whereas research reports should present references, books meant for larger circulation may be listed in bibliographies that should include all such titles as have been referred to.

There are mainly two style manuals detailing general form and style for research reports. These are:

- American Psychological Association, *Publication Manual,* 3rd ed. Washington, DC: American Psychological Association, 1983.
- *The Chicago Manual of Style,* 13th rev. ed., Chicago University of Chicago Press, 1982.

Style of Referencing

There are mainly two types of referencing:

1. Arranging references in alphabetical order where the researcher has cited the name of the author and the year of publication/completion of the work in the text.
2. Arranging references in a sequence as they appear in the text of the research report. In this case, related statement in the body of the text is numbered.

However, most research reports use alphabetical listing of references.

For example, entries in a reference section may look like the following:

1. Gannicott, K. and Throsby, D., *Educational Quality and Effective Schooling,* Paris: UNESCO, 1994 (Book).

2. Koul, B.N., Singh, B. and Ansari, M.M., *Studies in Distance Education,* New Delhi: IGNOU & AIU, 1988.

3. Kumar, K. L., *Educational Technology,* New Delhi: New Age Publishers, 1995.

4. Ministry of Human Resource Development, *DPEP: Guidelines,* Department of Education, MHRD, Government of India, New Delhi, 1995.

5. Mukhopadhyay, M. (ed.), *Educational Technology: Challenging Issues,* New Delhi: Sterling Publishers, 1990. (Edited Book)

6. Mukhopadhyay M., "Teacher Education and Distance Education: The Artificial Controversy", in Buch, Piloo M., (ed.) *Contemporary Thoughts on Education,* Baroda: SERD, 1998. (Chapter in Book)

7. Parhar, M., Impact of Media on Student Learning, Unpublished Doctoral Dissertation, New Delhi: Jamia Millia Islamia, 1993. (Thesis)

8. Sachidananda, Tribal Education: New Perspectives and Challenges, *Journal of Indian Education,* New Delhi: NCERT, 1994. (Article in a Journal).

9. Selltiz, Claire et. al., *Research Methods in Social Relations,* New York: Holt, Rinehart & Winston, 1959.

10. Dhanarajan, Gajaraj, "Access to Learnia4 and Asian Open Universities: In Context" in the 12th Annual Conference of Asian Association of Open Universities, "*The Distance Learner", The* Open University of Hong Kong, Hong Kong SAR, China, 4-6 Nov., 1998 (Conference Paper).

You would notice the following:

- All studies are arranged in alphabetical order.
- The names of the authors are recorded by title and initials (not full name).
- To indicate two or three authors, 'and' is used between the first and the second, ',' between first and second and 'and' between second and third author.
- In case of more than three authors, only the name of the first author is mentioned followed by *et al.* or others.
- In case of a chapter in a book, after the author and chapter title, the name of the editor and the title of the book are written.
- Titles of printed books, names of journals are highlighted by using 'italics' or by underlining (in case of manually typed material).
- Place of publication of a book precedes the name of the publisher separated by a ':' (colon).

- Names of journals are followed by the relevant volume and issue numbers usually in the form 10(3) - Volume 10, Number 2 and page numbers.
- Unpublished thesis or dissertation titles are not highlighted and the word 'unpublished' is mentioned.

Referring Web Based Documents

Computers have brought revolution in all sectors of development including education. Computers were conventionally used for data storage, processing and retrieval. Through Internet, information can be accessed from any part of the world. As researchers, reviewing the relevant literature related to the problem under study is almost magnum opus. These days Internet is a rich academic and professional resource. World Wide Web (WWW) is the easiest and most popularly used browsing mechanism on the Internet . Here, we will very briefly explain as how to write the references when we quote from any Web Site.

Citing E-Mail

E-Mail communications should be cited as personal communications as noted in APA's Publication Manual *http://www.apa.org/journals/webref.html.* Personal communications are not cited in the reference list. The format in the text should be as follows:

Sanjaya Mishra (personal communication, November 15, 2000).

Citing a Web Site

When you access the entire web site (not a specific document on the site), you just give the address of the site in the text. It is not necessary to enter in the reference section.

For example,

http://www.ignou.ac.in (IGNOU's website)

http://www.webct.com/ (This site provides tools for development of web based courses)

Citation of specific document on a web site has a similar format to that for print. Following are a few examples of how to cite documents. The Web information is given at the end of the reference section. The date of retrieval of the site should be given because documents on the Web can change in content or they may be removed from a site.

Example:

Duchier, D. (1996), Hypertext, New York: Intelligent Software Group.

[Online] http://www.isg.sfu.ca/~duchier/misc/hypertext_review/chapter4.htm [Accessed on 25/1/2011].

Flinn, S. (1996) Exploiting information structure to guide visual browsing and exploratory search in distributed information systems [Online] http://www.cs.ubc.ca/reading-room/ [Accessed June 2010].

If you have to cite some specific parts of a web document, indicate the chapter, figure, table as required.

Check Your Progress Exercise 4

Note: a) Read the following questions carefully and answer in the space provided below.

b) Check your answers with those provided at the end of this Unit.

1. Discuss the difference between a bibliography and a reference.

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2. List the main chapters of a research report.

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21.5 LET US SUM UP

In this Unit, our main focus was on how to write a research report. At the outset, we defined what a research report enumerates and the significance of a research report. Different types of research reports like research articles, abstracts, theses and dissertations and project reports were discussed. Format of a research report was also discussed. It consists of the preliminary section, the body of the report and the reference section. There are three major sections in a research report. These are the beginning, the main body and the end.

21.6 GLOSSARY

Absract	:	A comprehensive summary of the contents of the article or a these or dissertation submitted for evaluation.
Executive summary	:	A synopsis of the research focusing on its practical implications
Recommendations	:	A list of actions to be implemented
Review article	:	Critical evaluation of research material that has already been published.

21.7 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress Exercise 1

1. A good abstract should be accurate, concise, coherent, readable, specific and self contained.

2. The major difference between a research journal and a dissertation is the length of the document and the content/information covered. The dissertation in its original form is not acceptable to journals but the condensed versions of dissertation may appear as journal articles. The author of a dissertation produces a "final" manuscript, but the author of a journal article produces a "copy" manuscript. The format of the dissertation is as per the requirements/ style mentioned by an institution to which it is submitted. The format of a research article conforms to the guidelines and policies of the journal.

Check Your Progress Exercise 2

1. The major parts of the beginning of a research report are: cover/title page, acknowledgements, table of contents, list of tables, list of figures and list of abbreviations.

   The cover page gives us clear information about the subject/theme, author and the year of the research study as well as the organisation for which or where the study has been conducted.

   Acknowledgements are words of appreciation from the researcher for those who have helped him/her while conducting the study. Table of contents indicates the main themes/areas studied, the methodology followed and the outcome of the study.

   List of tables, figures and abbreviations are useful as reference tools.

Check Your Progress Exercise 3

2. a) Review of literature helps the researcher to specifically define the problem for investigation, decide about the usefulness of the study and formulate her or his hypothesis.

   b) The conclusion of a research report sums up the findings, states what is new in the report concerned and indicates the direction for future studies as well as implications for implementation of recommendations, if any.

Check Your Progress Exercise 4

1. A bibliography contains all background materials made use of in the research report but a reference section lists only those which have been referred in the report.

2. Following are the main chapters of a research report:

   Chapter 1 Introduction

   Chapter 2 Review of Related Literature

   Chapter 3 Design of the Study

   Chapter 4 Results and Discussion

   Chapter 5 Conclusion and Recommendations

21.8 UNIT END QUESTIONS

1. Collect 3-4 Ph.D or MA or M.Sc. research reports based on survey, experimental, qualitative case study, historical and philosophical research studies. Examine how these reports have been developed. Write a critical note on your analysis.

2. Would you write up a report as you go along or leave it until you have completed the work? Why?

3. Would you begin your research report by thoroughly reviewing the literature? Why?

4. Why is it important to write a report?

5. How much detail do you think you should discuss about methods of study? What basic format book would be appropriate for writing a report?

21.9 FURTHER READINGS AND REFERENCES

American Psychological Association (2001). *Publication Manual of the American Psychological Association* .(5th ed.). Washington, DC: American Psychological Association (REF BF 76.7.083.2001).

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UNIT 22 EVALUATING RESEARCH REPORTS

Structure

22.1 Introduction

22.2 Evaluating Training Oriented Research Reports

- 22.2.1 Introductory Chapter: Building the Rationale
- 22.2.2 Review of Literature
- 22.2.3 Objectives and Hypotheses
- 22.2.4 Choice of Research Design
- 22.2.5 Choice of Variables
- 22.2.6 Research Instrumentation
- 22.2.7 Sample
- 22.2.8 Data Collection and Analysis
- 22.2.9 Findings and Implications
- 22.2.10 Summary and Conclusions
- 22.2.11 Referencing
- 22.2.12 Annexures

22.3 Evaluating Problem Solving Research Reports

22.4 Evaluating Knowledge Generating Research Reports

22.5 Let Us Sum Up

22.6 Glossary

22.7 Answers to Check Your Progress Exercises

22.8 Unit End Questions

22.9 Further Readings and References

22.1 INTRODUCTION

Just as a research exercise adopts a scientific process, there are scientific ways of evaluating it. Unless research is scientifically evaluated, the implications cannot be assessed properly. Also, the researcher's hard work will remain unacknowledged.

The purpose of research can be classified into three categories. These are:

- Training in research,
- Research for problem solving, and
- Research in inquiry of truth or creation of knowledge.

There are definite patterns here. For example, most research projects, especially, projects at the post graduate and doctoral levels are mainly on training in research. The research excerises and dissertation related to PGDCFT or M.Sc. (CFT) programmes of study of IGNOU are also intended to train a professional in research in Counselling and Family Therapy.

Most of the action research and institutional projects aim at problem solving; the magnitude of the problem can vary for example, from a classroom to the entire educational system.

Research that generates knowledge or information is usually characterized by sustained work in a field for years and decades by one person or a group of senior professionals. For example, Nobel Laureate Prof. Amartya Sen has been working on a particular aspect of economics for years and decades which has now come to be known as *welfare economics.* Such research aims at creating new knowledge.



Fig. 22.1: Evaluating a Research Report

It should not be difficult to appreciate that the paradigm for the evaluation of research reports, for three different goals cannot be the same. Though, research methodology has to be a common interest in all evaluation, it will be the main focus in the evaluation of a report where training is the goal. When it comes to research for knowledge creation, the emphasis on methodology becomes redundant not because methodological sophistication is not needed, but because such research is done by senior professionals who are not only well versed with research methodology but also supervise the works of their research students.

In this Unit, we will develop a paradigm or a scientific method for assessing research reports.

Objectives

After studying this Unit, you will be able to:

- List the major items for evaluating a research report;
- Explain the scientific criteria for evaluating a research report;
- Critically assess the validity of the mechanism of evaluating research reports; and
- Actually evaluate a research report and submit assessment.

22.2 EVALUATING TRAINING ORIENTED RESEARCH REPORTS

One of the major purposes of conducting research is training in research methodology particularly at the initial level. This is quite true for the research exercises and dissertation requirement linked with various educational programmes

of Universities including PGDCFT and M.Sc.(CFT) of IGNOU. Though the focus in training oriented research is on research methodology, it is important to note that there has to be simultaneous emphasis on the mind and attitude of the researcher which is likely to influence her or his approach to research.

As you have learnt from the previous units and other blocks, a research report includes:

- An abstract.
- An introduction or an introductory chapter. Depending on the author, the introductory chapter may also include review of related research literature. In some cases, the introductory chapter includes theoretical argument with a separate chapter on the review of literature.
- The second component of a research report is the statement of objectives and hypotheses. In fact, in many research articles, statement of hypotheses is not necessarily a component but the major objectives of the research study.
- The third major component is the description of research procedure which includes details about the sample of the study, research design, research instrumentation, data collection, data tabulation and data analysis. Data analysis primarily aims at the kind of statistics or other qualitative techniques used.
- The fourth component is a report on the findings, especifically the outcome from the statistical analysis or qualitative designs.
- The fifth component is a discussion on the findings and conclusions.
- The sixth, an important component of a research report is the list of references actually cited in the text of the study.
- In a full-fledged research report, an equally important research component is the annexures that contain the tests and other tools used in the research.

Let us take the above points one by one.

22.2.1 Introductory Chapter: Building the Rationale

As mentioned earlier, the first chapter is the introduction. Introduction is the best section to learn about the researcher, particularly, in case of social and behavioural sciences, and thus, this section has particular relevance for research in the field of counselling and family therepy. It is important to understand the researcher's affiliations and the purpose for which the study was undertaken.

Another important point is to understand whether the researcher has a commitment to a particular point of view. Whenever a researcher tries to support an assumption or a hypothesis from a particular point of view, there is a likelihood of biases. At times, the researcher gets emotionally involved and brings in a bias which is easy to detect. In case you come across a study which clearly states that the study is to prove something, it is clear that the researcher already holds a strong point of view and is only trying to prove herself or himself correct. Much of this can be understood from the emotionally charged or indifferent language of the investigator in the report.

In the review of literature, for example, with regard to studies on women or backward classes, a researcher may use intemperate emotional language to indicate her or his bias either in favour or against the subject of research.

Another important source of a bias is the researcher's strong socio-cultural affiliation. For example, in a multi-cultural or a multi-lingual society, her or his strong personal affiliation may affect the process of research.

An easy way for identifying any biases in a study is to look into the researcher's efforts in collecting research and thematic literature. For example, a particular area of research may have quite a range of references and the studies might contradict one another in terms of findings. Of these, the researcher may choose only such studies that support his or her point of view instead of referring to the contradictions.

As a reviewer, you may first like to identify if there is any bias; also the extent of the bias and its likely impact on the research process and findings.

The second important point for investigation, particularly in the introductory chapter, are the kinds of argument being built up to justify the relevance of the study.

It is expected that the introductory chapter provides a broad overview which indicates the candidate's understanding of the broad framework in th socio-cultural aspects of the individual(s) participating in the study as will as the aspects and issues being examined. Further, from this broad spectrum the researcher should be able to narrow down to the problem under investigation. In this process, a good research report will quote information and data from previous research.

Thus, the entire chapter should be seen from several angles.

- Grounding in the broad framework and context,
- The strength of arguments to justify the study – selection of the problem,
- Skill in narrowing down to the identification of the problem, and
- The presence of biases issues.

Finally, the test of the quality of an introductory chapter is its ability to convince the reader and the reviewer that the problem chosen is:

- Relevant,
- Important,
- Timely,
- Researchable, and
- Within the competence of the researcher.

Should these criteria be fulfilled, the chapter on introduction should be considered to have been done well.

22.2.2 Review of Literature

Researchers follow two alternative paths so far as review of research literature is concerned. Some researchers review literature as a part of the introductory chapter to build up the required rationale. However, a very large number of researchers provide a separate chapter on the review of research literature. Research reports/ papers comprise three major elements –

- an introduction justifying the research,
- methodological details and
- findings and their implications.

A competent reviewer should touch upon all the three elements, though most reviewers use only findings. Very few researchers look into findings as well as the research methodology in their reviews. From the angle of findings, major objectives of a review are:

- *To find gaps in research:* For example, if one could conceptually map out a broad area of research and see what researches have been already conducted, the exercise will automatically provide the gaps. Within a broad research area, a number of variables are likely to be impacting a particular phenomenon or process. Some variables may have been and some others, may not have been studied. Those variables which have not been studied are the indicators of gaps.

- *To identify the areas of overlap:* There will be areas in which several studies have been conducted in one and the same way. The same variables have been used time and again in the research projects that are more or less similar. These are the cases of overlap. Review of literature will allow us to understand and identify such overlaps.

- *To identify contradictions:* It is quite likely that researches conducted in one and the same area provide contradictory results. For example, there are contradictory results as to what happens to students who participate in Personal Contact Programmes (PCP) in a distance education programme and who do not. A number of studies indicate that it has no impact on the performance of learners. On the other hand, there are certain studies which indicate that those who participate in PCPs perform better. The review of research literature also brings these contradictions to surface. A researcher may then conclude whether or not research on a specific issue is conclusive.

Now, these are the three components (from the angle of findings) which should help in crystallizing the problem of research.

As a reviewer, you need to check out whether the researcher has indeed identified:

- *Gaps*
- *Overlaps and*
- *Contradictions.*

If so, he/she has done his/her job. However, within that broad framework, you may have to make a qualitative assessment of how effectively the researcher has argued the cases of gaps, overlaps and contradictions.

The second major purpose of review is to derive guidelines for the methodology of research. For example, research on innovation and change started in the various parts of the world in early 1960s. There are a number of alternative approaches to study the processes of adopting an innovation and management of change. Everette Rogers experimented with quasi-scaling technique for identifying the variables that predict the process of adopting an innovation on a multivariate analysis format. Subsequently, this methodology has been followed by a large number of researchers in this area. They derived the methodology from the previous research. On the contrary, in a research investigating the process of adoption

(compared to variables that predict adoption) another researcher adopted multiple case analysis technique (Mukhopadhyay, 1975). This is a qualitative technique with a semblance of 2x2 factorial design. In this case, the researcher derived from a larger repertoire of research methodologies after carefully scanning the approaches used by the predecessors.



Fig. 22.2: Review of Research

Talking of details in methodology in the review of research literature, a researcher should be able to derive implications for:

- Sample — sampling technique, sample size, etc.
- Research designs,
- Variables to be studied,
- Scaling technique,
- Research instruments,
- Data collection,
- Statistical or qualitative techniques for data analysis.

Now, while you evaluate a report, you may like to check whether the researcher has adequately analyzed and reflected on the previous research studies from the various aspects of research methodology listed above. Further, does he/she indicate his/her decision to choose the research designs, variables, etc. backed up by previous studies. If so, the purpose of review has been well achieved. If not, it is merely a ritual.

Before we conclude, let us understand that there is not one single way of reviewing literature. There are at least four basic patterns.

- One and the most elementary pattern is where a researcher presents the findings of a study against the name of the author in one paragraph. The second paragraph refers to another, and third to yet another researcher and so on. In such a case, the researcher does not interlink one study with another.
- The second type of review is when a reviewer refers to a particular set of findings and provides a few references of those who contributed to that particular finding in brackets. In this case, he/she basically clusters studies

around a finding (say, relationship between two variables) or around a common mission. Still, the research does not compare any two sets of findings or any two sets of researchers.

- The third pattern is when a reviewer describes a phenomenon investigating various researches as a support.
- The fourth and better approach is when a researcher develops a conceptual framework of his/her research in a particular field. The conceptual framework is built on the theoretical literature and creative argumentation. Within this framework, the researcher maps out the previous research. Fitting it into a conceptual framework allows him/her to compare and contrast issues and findings, identify the gaps, overlaps, contradictions and also derive methodological implications.

Obviously, the four patterns are in a taxonomic structure. As such, you, as an evaluator of a report, will award higher credit to the researcher who uses pattern four and least to the one who resorts to pattern one for reviewing research literature.

22.2.3 Objectives and Hypotheses

All research studies have a section on objectives and hypotheses. It is important to examine whether the researcher has raised very clearly the questions to which she or he is looking for a solution. These questions should be explicit — the researcher should categorically put down the questions on paper. This set of questions can be converted into objectives.

Objectives are the foundations of a research project. Eventually the objectives guide the entire process of research. The major attributes of well written objectives are:

- *Clarity of expression and direction* – The objectives must have been stated clearly enough to indicate what the researcher is trying to investigate. It is equally important to avoid overlaps in stating objectives.



Fig 22.3: Assessing the Target

- *Measurability* – The objectives must be stated in a manner that they are measurable; in case of qualitative research it should be possible to at least codify the data and information so that assessment can be made whether the objectives have been achieved or not.

- *Comprehensiveness* – The objectives provide the guiding framework for a research project. Hence, the statement of objectives should be comprehensive enough to cover each and every aspect of the research study. Stating differently, nothing should be outside the purview of the stated objectives.

- *Judiciousness* – Another important attribute is the judiciousness in choosing and stating objectives. For example, many young scholars, in their post graduate dissertations and doctoral theses mention "recommending future research" as one of the objectives. In all fairness, this is not feasible. Similarly, in a short time-bound project, a research objective that actually calls for sustained and long-term study becomes less feasible.

Thus, an evaluator, while evaluating the research objectives needs to examine clarity of expression, measurability, and comprehensiveness of the objectives and judiciousness in choosing and stating them.

Hypothesis, is a statement of casual or non-casual relationship of two or more variables under study. The proposition of a hypothesis is derived from theoretical constructs, previous research and logical analysis. More often than not, the researcher mentions the literature that leads to the formulation of hypotheses. *One important task of the evaluator is to check whether the researcher has provided sound back-up from the previous research and findings and important theoretical analyses to justify her or his formulation of hypotheses.*

Hypotheses are stated either in null or directional form. Null form, does not presuppose any specific relationship, for example 'there will be no relationship between academic achievement and intelligence of the students'. On the contrary, directional hypotheses presuppose relationship, for example 'distance learners who study self-instructional material will perform better than those who study through conventional textual material'. When a null hypothesis is tested, it may point to a positive, neutral or negative relationship that can be used to derive conclusion. When a directional hypothesis is tested, it produces one-of-the two results – true or false. If it is false, it does not automatically show that the reverse is true.

For the purpose of evaluation, it is important to examine whether:

- *The choice of hypotheses – null or directional, was logical and whether the researcher has adequately argued out her or his case,*

- *The hypotheses are testable,*

- *The hypotheses are stated clearly indicating one to one relationship between two (or more) variables,*

- *In case of a multi-variate situation, the relationship of the cluster of independent variables vis-a-vis the criterion variable is well defined.*

22.2.4 Choice of Research Design

There are several research methods and designs that can be chosen by a researcher to achieve the objectives and test the hypotheses. While evaluating a research report, it is important to assess whether the chosen design is competent to respond to the research objectives and questions laid down. For example, if the objective is to test the impact of a broad treatment to a group of learners, it has to follow an experimental design. Similarly, if the objective is to assess the status of certain

psycho-social variables in a given sample of population, it would require survey methodology. Within a survey, if the purpose is simply to describe their status and not to compare them with any standard norm or not even develop a norm, the design can be descriptive.

Hence, in evaluating research, it is necessary to check the choice of appropriate research design against the objectives. Another means of evaluating the applicability and befittingness of the research design is to check it against the hypothesis. If the hypothesis to be tested, is formulated in terms of relationships, the study has to adopt a methodology, e.g. survey, by which relationships can be tested. Compared to it, if the hypothesis is to test the performance of two different groups against a particular type of treatment, the research design has to provide for that opportunity by adopting an experimental design. Depending on the nature of the groups, the treatment, the size of the sample and also the nature of that experiment, one would adopt a pre-experimental, quasi experimental or true experimental design, or even post-experimental research.

Thus, an evaluator of a research report needs to examine the appropriateness of the choice of research design vis-a-vis the research objectives. The details of the design, e.g. type of experimental design etc. too have to be evaluated. Equally important is the argument put forward by the researcher in deciding the research design.

22.2.5 Choice of Variables

Choice of variables is an important step in a research project. We have seen in the previous Units that there can be at least three sets of variables, namely, independent, dependent and intervening variables. There are also other ways of classifying variables like socio-economic, demographic, psychological, organizational, etc. The later classification is relevant with regard to basic content of research whereas the former is directly linked to research methodology — how you deal with them while analyzing research data.

Here, we shall concentrate on the first set. The important point to evaluate in the choice of variables is the formulation of the dependent or the criteria variables. This is particularly important in experimental research where the impact of other variables on the criterion variable is assessed.

In order that the research makes a meaningful contribution, it is important to choose the independent variables as meticulously as possible. The choice of independent variables depends upon more than one consideration. One of the considerations is the existing knowledge on the basis of previous research which shows that certain types of variables are indeed related to and predict the variation of the criterion variable. The second important consideration is the assumption of the researcher — that there are particular sets of variables that are likely to be related to the dependent variables.

The third set of variables is the intervening variables. These are often ignored in research, although these actually intervene and influence the relationship between the independent and the criterion variables. On the basis of the research literature, the researcher is expected to identify such variables that are likely to influence the relationship under test.

Besides the identification and classification of the variables, it is important that variables are measurable. Further, all variables, may not have standard definitions.

In such a case, it is expected that the researcher shall provide operational definitions and also indications of their measurability.

Hence, an important consideration in evaluation is how meticulously the variables have been identified and classified under the three categories mentioned above. The second important consideration in this case is whether the researcher has provided operational definitions of at least such variables as do not have a standard meaning in the literature. The third important consideration is whether there are clear indications of the measurability of variables.

Check Your Progress Exercise 1

Note: a) Read the following questions carefully and answer in the space provided below.

b) Check your answers with those provided at the end of this Unit.

1. List the major attributes of well written objectives in a research report.

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2. List the points which an evaluator should keep in mind while evaluating the variables used in research exercise.

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22.2.6 Research Instrumentation

Several types of research instruments have been discussed in the relevant blocks and units of this course. These are psychological tests, achievement tests, questionnaires, opinionnaires, information blanks, inventories, interview schedules, etc. You may like to quickly review the relevant Unit. For the purpose of evaluating a research report, the important consideration is whether the instrument chosen or developed is appropriate for measuring the variables or not.

It is important to note that research instrument is for the measurement of variables. Every variable has certain attributes of its own, amenable to measurement by different types of scaling, namely, nominal, ordinal, ratio and interval. Similarly, there are variables which are amenable only to rigorous standardized tests, like those of intelligence, reasoning ability, etc. There are others which can be measured through inventories or questionnaires. Then there are variables which necessitate the use of interviews with probing questions to be able to go into the details of a process. The common mistake in this area is the use of incompatible instruments *vis-a-vis* the variables being measured; for example, researchers may use a questionnaire to measure attitude. Similarly, in the name of a questionnaire, researchers may actually frame an opinionnaire. Sometimes researchers use questionnaires for conducting interviews as if a questionnaire is no different from

an interview schedule. More often than not, interviewing is called for when a lead question leads to 'Yes' and/or 'If No' kind of situation.

The points to be borne in mind while evaluating research instruments are the following:

1. *Whether the researcher has chosen an instrument that can actually measure the variables.*
2. *Whether the research instrument has been picked up from an existing stock or has been constructed by the researcher. In case of the former, whether the researcher has checked its validity, and reliability and the sample on which the original study was conducted. Whether the standardization on the original sample is valid for the sample on which the researcher has used the instrument and drawn inferences. In case the researcher has developed the instrument on his/her own, has care been taken to check the attributes of the tool, a dependable research instrument, be it a questionnaire, inventory or an interview schedule.*
3. *Whether the researcher has tested the feasibility of the use of instrument. For example, a questionnaire is not a feasible instrument for the illiterates unless the researcher himself/herself records the responses. Similarly, a research instrument that requires considerable time to respond is unlikely to be responded by those who run short of time e.g. executives.*
4. *Besides these three criteria, research instruments can be examined from the angle of language, communication, provision of recording response by the respondents, etc.*

22.2.7 Sample

There are two major issues that need to be considered with respect to samples, namely,

- Sample Size
- Sampling Technique and Type of the Sample.

The size of the sample depends on the nature of objectives of a research project and the research design. For example, in case of rigorous experimentation, it is difficult to handle large samples. Also, it is not necessary. Similarly, for surveys and such other status studies, samples have to be large. The main consideration here is that there has to be an optimum size of the sample beyond which it is waste of research resources.

What is to be considered is whether the sample size is large enough for the study and the sample size has been determined scientifically.

What is important is the technique of choosing a sample. There are several techniques of choosing a sample, namely, randomization, stratified randomization, clustering, etc. In purposes of exploring a new phenomenon primarily for understanding and learning, one may use purposive sampling. Since it is a purposive sample, it is obviously not randomized. It does not have the value of generalization but can be used for generating the first set of information. The important point is to check whether there is a case for using purposive sampling. A random sample is often quoted as the ideal sample; it is necessary for generalization and the

creation of new knowledge. In practical terms, strict randomization is more often used in statistical quality control in production industry . However, a modified version like stratified randomization is used in educational and social research. It provides a sound basis for generalization.

The important point to check here is whether the researcher has identified the right and relevant criteria for stratification and sub-stratification of the population; and then developed a sampling frame to choose a stratified random sample.



Fig. 22.4: A Sample

It is also important to look into the argument that is put forward by the researcher justifying the method of selecting the sample. There are studies where the researcher started with a particular sample size, but ended up with a considerably reduced one. In such events, although the sampling technique may have been technically correct, the researcher miscalculated the feasibility of involving the sample in the research. As a result, beginning with a stratified large whole sample, the researcher ends up with a small sample by default or with a residual sample. This may require a change in the statistical analysis of the data.

An evaluator needs to carefully evaluate the explanation provided by the researcher and the way she or he proposes to cope with it.

22.2.8 Data Collection and Analysis

Along with the quality of research instruments and the sampling technique, the quality of the outcome of research also depends on the quality of data itself. In turn, the quality of data is determined by the procedure of data collection. The indication of the quality of data lies in the dependability of the information collected from the sample. The worst case is when a researcher manipulates the responses by filling research instruments himself or herself. While it is difficult to catch such unprofessional research behaviour, it does generate a kind of a pattern that is unlikely to produce results. Other important problems associated with data collection are — on the spot collection that provides a definite return of responses, but not necessarily quality responses because the respondent is likely to respond, mechanically. In the second type, where the researcher sends the instrument by mail or leaves it to the respondent to respond, there is a large amount of loss because only a small percentage of the prospective respondents respond. The data thus generated are not of the pre-determined sample but of the positive type of respondents in the sample, may be we can call it the default sample.

Generally speaking in a research exercise that requires primary data, it is better to collect the data personally. In case of secondary data. it is important to check

the sources of data and their trustworthiness.

The points to check here are whether the researcher has categorically recorded the details of data collection:

- *research instruments administered personally or by a representative or by mail,*
- *sources and authenticity of secondary data, and*
- *the kind of problems that the data might have in terms of quality.*

Data analysis can be either qualitative or quantitative. Although qualitative research and qualitative analyses are gaining momentum, a large majority of research depends on quantitative methods and statistical procedures. *A major point in evaluating research is to check whether the researcher has chosen qualitative methods where the data are qualitative and objectives and hypotheses do not demand a quantitative analysis. Similarly, whether the researcher has chosen a quantitative technique where a qualitative answer is not required.*

Within quantitative research, statistics can be parametric or non-parametric. The point for evaluation is whether the researcher has justified the choice of the broad option between parametric and non-parametric tests. The size of the sample is another determinant in choosing the statistical tests as a small sample often warrants non-parametric tests. Within the parametric and nonparametric tests there is a wide range of options. *(Whether the researcher has chosen the right test is another important point to consider).* For example, within the application of simple central tendencies, it has to be seen whether the researcher has chosen mean where it is indeed the appropriate application or whether she or he has mechanically used a mean where a median or a mode would have been the more appropriate choice. If the choice of statistics has been correct, the next point to look into is the correctness of calculations. Of course, with the increasing use of computers, this problem has reduced. Given the development of the use of computers and availability of ready-made software like SPSS and other packages, it is important to examine whether the researcher has used a computer for data analysis. If not, the evaluator may have to calculate the values himself or herself.

Check Your Progress Exercise 2

Note: a) Read the following question carefully and answer in the space provided below.

b) Check your answer with that provided at the end of this Unit.

1. List the points of evaluating the chapter on data collection and analysis.

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22.2.9 Findings and Implications

Having dealt with the issues pertaining to introduction, review of related literature, methodology, we now concentrate on results.

The final outcome and hence, the value of a research project lies in its findings, i.e., results and their interpretation. The findings are presented not only in the descriptive form, but also in the form of tables and graphic representations. The evaluator needs to examine whether a table or a graph has been used wherever it was required. Similarly, if a table or a graphical presentation has been provided, it has to be seen whether it has been given a title and followed up with an explanation. The second important point to check is whether the researcher has related the graphic presentation with the corresponding tabular presentation and ensured that there is no contradiction between the two.

Along with the results, it is necessary to provide an interpretation and implications of the results. This is particularly crucial in an evolving field like counselling and family therepy. In order to do so, a researcher often refers to previous studies to derive support for his or her findings. She or he is also expected to reflect previous studies that contradict his/her findings. *The important issue of evaluation here is to critically examine the way a researcher interprets the findings:*

- *Whether the interpretation has been related to the introductory chapter where the researcher built up the rationale for his/her research.*
- *Whether the argument built up in each chapter is adequately reflected in the interpretation of the results.*

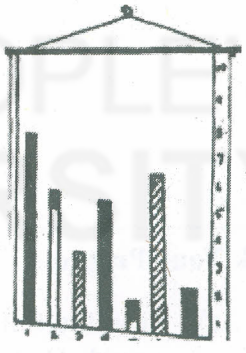




Fig. 22.5: Looking at the Findings

In other words, this is where an evaluator examines the analytical skill of a researcher, the skill of extrapolation, the skill of observing and explaining relationships between two or more variables, etc.

22.2.10 Summary and Conclusions

This is a common chapter in all research studies. It provides a quick glimpse of the entire research project. Brevity with comprehensiveness is the rule of the game for this chapter. An evaluator often examines within the small space of a summary how a researcher has built the rationale, how she or he has documented the objectives, hypotheses, research methodology and findings.

22.2.11 Referencing

Referencing is an important skill. Most research students flounder at this item — they lack both the skill and the seriousness of purpose vis-a-vis referencing. In fact, many evaluators go straight into the section on references. It is easy to check because there are some definite internationally recognized forms. For example, the form which is very largely used is the one in which the journal's name and the name of the books are italicized and the name of the place of publication follows that of the publisher. One comes across many research theses where a researcher mentions only the authors and the names of the books. She or he skips the place, publisher and even the year of publication, little realizing that an evaluator or a future reader of the thesis would not be able to refer to any book or study without the details about the publisher and the year of publication. *At the very elementary level, it is necessary to check whether all the information has been provided. Secondly, it has to be checked whether the information provided is in one of the standard forms. Thirdly, it has to be seen if the references are indexed,* in case they are not numbered in the text. Similarly if the references are numbered in the text, it has to be seen whether the references appear serially according to their appearance in the text. *As a matter of practice, as an evaluator goes through the text of the report and comes across a reference in the text, he/she should immediately check whether there is a corresponding entry in the reference. This helps him/her to identify the missing references and common mistakes in the spellings of names and years of publications.*

There is a difference between a bibliography and references. Research reports require references and not a bibliography. Many students commit the mistake of providing references under the heading of bibliography.

22.2.12 Annexures

Last but not the least, an important component of a research report is annexures. Annexures usually contain the research instruments, sampling frame, instructional material that might have been used for experimentation, etc. Annexures are also serialized. The main purpose of the annexures is that an evaluator can check the actual quality of the research instrument and material that have been used by the researcher. Annexures need to be fully documented and also serialized as indicated in the content of the research report. *Thus the checkpoints are the comprehensiveness and serialization of the annexures.*

Check Your Progress Exercise 3

Note: a) Read the following question carefully and answer in the space provided below.

b) Check your answer with that provided at the end of this Unit.

1. State the points on which the annexures of a research report are evaluated.

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Before we move over to the next Section, we need to take note of a few other simple indicators that also determine the quality of a research report. These are:

- *Language and expression including correctness of syntax, spelling, etc. Typing, word processing and printing of the report — readability including margins, line spacing, type font and size, placement of tables, diagrams, illustrations and graphs.*
- *Binding and overall get up.*

22.3 EVALUATING PROBLEM SOLVING RESEARCH REPORTS

So far we have examined the issues pertaining to research projects that are primarily intended for training in research: often, the first research report of a researcher.

The second category of research, as mentioned in the introductory paragraph is primarily for problem solving. A number of different types of research are undertaken for this purpose. Most common among the problem solving types of research is *action research* where a specific action is designed, tried out and evaluated to assess exactly the extent of alleviation of the problem. The other types of problem solving research are the evaluative and diagnostic research. The main objective of this type of research is to assess the magnitude of the problem and also diagnose the causes of such a problem.

The methodological rigour of this kind of research is as important as we have mentioned in the previous section on Research as Training. In this Section, we will not repeat the issues related to research methodology except re-emphasizing that these are as important in the case of problem solving research as in any other research project.

There is, however, another set of additional points to be examined while evaluating problem solving research reports. They are:

- Relevance and magnitude of the problem,
- The quality of the solution identified,
- Replicability of the approach,
- Sustainability of the solution, and
- Transferability of the experience.

There are numerous problems at the field level that can be identified in the domain of Counselling and Family Therapy. These problems can be in varied according to situations and contexts, and at different levels. Problems can be with respect to day-to-day management or developmental – raising the individual and family from one level to another. Problems can be with regard to improvement in the quality of life. In assessing a research report, in the area, it is important to examine whether a problem is important enough to be studied. In order to assess the importance of the problem, the first important item is the magnitude the problem. The next issue in assessing the importance of the problem is its relevance.

The next important criterion is the quality of the solution that has been arrived at by the problem solving research. The quality of the solution will imply, for example, in the case of diagnostic research, the depth to which the research has been able to reach and whether the diagnosis can be trusted for developing viable plans of action to resolve the problem. In case of action research where a solution has been designed and tried out, the main criterion of evaluation would be whether it has actually alleviated the problem, and if so, to what extent.

An additional quality of such research is whether the solution is replicable or not. Should the solution be very specific, it is unlikely to be replicable; nevertheless, lessons can be drawn from the study.

The other criterion is *sustainability.* Should the solution be of very temporary nature and unsustainable over a period of time, the experiment is of very little significance and consequence.

Similarly, if it is not replicable for the same participants of study over a period of time and not transferable ot others, the research is of questionable value.

If we relate this portion with the previous section on research for training, the main focus is on the results — quality and strength of the solution to the problem, its sustainability, transferability, etc.

22.4 EVALUATING KNOWLEDGE GENERATING RESEARCH REPORTS

Another type of research is *knowledge generating research.* This is the highest form of research. In assessing a research report from the angle of knowledge generation, we will have to begin with the assessment of the methodological component as mentioned in the first section. In this case, it becomes all the more important because without the right methodology, the results the basis of new knowledge, will not be dependable. In the research parlance, generating knowledge implies generalizability. Generalizability depends on the sophistication of the research

design, control of variables and the level of confidence (in statistical terms) on which a phenomenon can be predicted. This requires very serious methodological rigour.

Beyond methodological considerations, there are several other areas for the evaluation of a research report intended to generate knowledge.

One important component of evaluation is the researcher's own understanding and assessment of the existing knowledge in the field of her or his own research. This is often indicated in the introductory chapter and the review of literature carried out by the researcher. We have dealt with this issue in detail earlier. However, in order to emphasize, two factors are important:

- Coverage of theoretical literature dealing with the conceptual paradigm of the knowledge systems relevant to the research under evaluation, and
- Assessment of the research literature against the conceptual paradigm proposed by the researcher and/or one of the existing conceptual paradigms.

Both these exercises should lead to identification of the strength or weakness of the conceptual framework as much as the contradictions, gaps and the overlaps in research findings. This is precisely why the evaluation of higher forms of research becomes necessary.

The second aspect to be evaluated in this case is the new contribution made by the researcher — whether the research has brought in any new findings in the concerned area of research. The new findings have to be adequately supported with tests of validity and reliability of the findings and the feasibility of the solutions. What is to be checked is whether the research methodology adopted by the researcher had taken adequate precautions to test the reliability and validity of the findings.

Finally, it is the generalizability of the findings that contributes to knowledge generation. In assessing a research report of this category, this particular aspect needs to be carefully considered. In doing so, some of the alternative mechanisms would be to examine whether the researcher corroborates his/her findings and also justifies the claims of the new addition to the knowledge system.

In general, it is important that the researcher relates the findings to the existing structure of knowledge in any of the following three ways:

The research study indicates were the new findings to:

- reinforce an established theory and the existing knowledge system,
- fill in the gap in the existing knowledge system, and
- contradict old theories and open up new vistas of knowledge and argues a case for further investigation.

22.5 LET US SUM UP

In the last few pages, we have dealt with various issues related to the evaluation of research reports and have given some vital practical methods of evaluating them. We classified research reports into three categories — research for training, research for problem solving and research for knowledge generation. We have also mentioned that these categories of research are not water-tight compartments.

Variation is on emphasis, for example in the case of research for training, emphasis is laid on proper use and application of research methodology. It is also anticipated that as a researcher moves from the maiden research effort to the second, third and so on, his/her methodological skills will improve. But for any research, importance of methodology cannot be underestimated. We conclude this Unit with a Research Report Evaluation Proforma which by and large covers all the major points enumerated in the text of this Unit.

Research Report Evaluation Proforma

Please take any research report from a library and respond to each question given below:

1. Introduction

a)	Is there any Bias?	Yes/No
b)	If yes, what is the extent of the bias?	Extensive/Some/Little
c)	Are the related areas of the field concerned laid out?	Yes/No
d)	Whether the problem selected is appropriate?	Yes/No
e)	Whether the problem is relevant?	Yes/No
f)	Whether the problem is important?	Yes/No
g)	Whether the problem is researchable?	Yes/No

2. Review of literature

a)	Whether gaps have been identified?	Yes/No
b)	Whether overlaps have been identified in the review?	Yes/No
c)	Whether the contradictions have been identified in the review?	Yes/No
d)	What is the level of the review?	Level 1/ Level 2/Level 3/Level 4

3. Objectives and hypotheses

a)	Are objectives stated clearly?	All/Some/None
b)	Are objectives measurable?	All/Some/None
c)	Are objectives comprehensive?	All/Some/None
d)	Are objectives judiciously chosen?	All/Some/None
e)	Are the hypotheses logical?	All/Some/None
f)	Are the hypotheses measurable?	All/Some/None
g)	Are the hypotheses stated clearly?	All/Some/None

4. Research design

a)	Whether the choice of Research Design viz-a-viz the research objectives are appropriate?	Yes/No
b)	Whether the details of the design are given?	Yes/No

5. Variables

a)	Whether the variables have been rightly identified?	All/Some/ None
b)	Whether the variables have been operationally defined?	All/Some/ None
c)	Whether the variables are measurable?	All/Some/ None

6. Research instruments

a)	Whether the instrument selected can measure the variable?	Yes/No
b)	Whether the instrument has been constructed or adopted?	Constructed/Adopted
c)	Whether the feasibility of the instrument has been tested?	Yes/No
d)	Is the language used in the research instrument comprehensible?	Yes/No

7. Sample

a)	Is the size of the sample appropriate?	Yes/No
b)	Is the technique of choosing the sample appropriate?	Yes/No

8. Data collection and analysis

a)	Whether the research instruments are administered?	Personally/ by a Representative/ by Mail
b)	Whether the secondary data are authentic?	Yes/No
c)	Whether the right kind of test is chosen?	Yes/No

9. Referencing

a)	Whether all the information is provided in the references?	All/Some/None
b)	Whether information provided is of the standard form?	All/Some/None
c)	Whether the references are indexed?	All/Some/None

10. Annexures

a)	Whether the annexures are comprehensive?	Yes/No
b)	Whether the annexures are serialized standard forms?	Yes/No

11. Findings and Implications

a) Whether the findings are in descriptive form or in tables? Description/Table/Graphs

b) Whether the tables/graphs have appropriate titles? Yes/No

c) Whether the tables/graphs have been explained? Yes/No

d) Whether the findings have been related to the introductory chapter? Yes/No

12. Summary and Conclusions

a) Whether the summary presented is comprehensive? Yes/No

13. General Indicators

a) Are there typing mistakes? Many/Some/None

b) Whether the gap between the lines is sufficient? Yes/No

c) Whether the placement of tables/graphics/ illustrations is proper? Yes/No

d) Whether the margin left is sufficient? Yes/No

e) Whether the binding is proper? Yes/No

22.6 GLOSSARY

PCP : Personal Contact Programmes

Hypotheses : A statement of causal or non-causal relationship of two or more variables under study.

22.7 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress Exercise 1

1. The major on attributes of well written objectives in a research report are given below:
   - Clarity of expression and direction,
   - Measurability, Comprehensiveness, Judiciousness.
2. The points which a researcher should keep in mind while evaluating the variables in a research report are:
   - Formulation of variables,
   - Classification of variables,
   - Whether the variables are operationally defined, and
   - Measurability of variables.

Check Your Progress Exercise 2

1. Following are the points of evaluating the chapters on data collection and analysis:
   a) Administration of research instruments,
   b) Authenticity of the data, and
   c) Kinds of test used.

Check Your Progress Exercise 3

1. Following are the points on which annexures of a research report evaluated:
   a) Whether the annexures are in proper serial order
   b) Comprehensiveness of annexures.

22.8 UNIT END QUESTIONS

1. What do you mean by evaluation of research report?
2. How do you evaluate the report a research based on knowledge generation?

22.9 FURTHER READINGS AND REFERENCES

Mukhopadhyay, M. (1981). *Barriers to change in secondary education: Some case studies.* Udang : Education Books. (1981).

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MCFT-005

COUNSELLING AND FAMILY THERAPY: RESEARCH METHODS AND STATISTICS

BLOCK 1 : FUNDAMENTALS OF RESEARCH

Unit 1 : Introduction to Counselling and Family Therapy Research
Unit 2 : Research Paradigms
Unit 3 : Scientific Method and Knowledge Generation
Unit 4 : Formulation of Research Problems
Unit 5 : Research Designs
Unit 6 : Test Measurement

BLOCK 2 : METHODS AND TECHNIQUES OF DATA COLLECTION

Unit 7 : Sampling
Unit 8 : Qualitative Methods
Unit 9 : Quantitative Methods
Unit 10 : Mixed Methods
Unit 11 : Psychological Testing and Projective Techniques
Unit 12 : Attitude Scales and Measurements

BLOCK 3 : DATA ANALYSIS AND INTERPRETATION

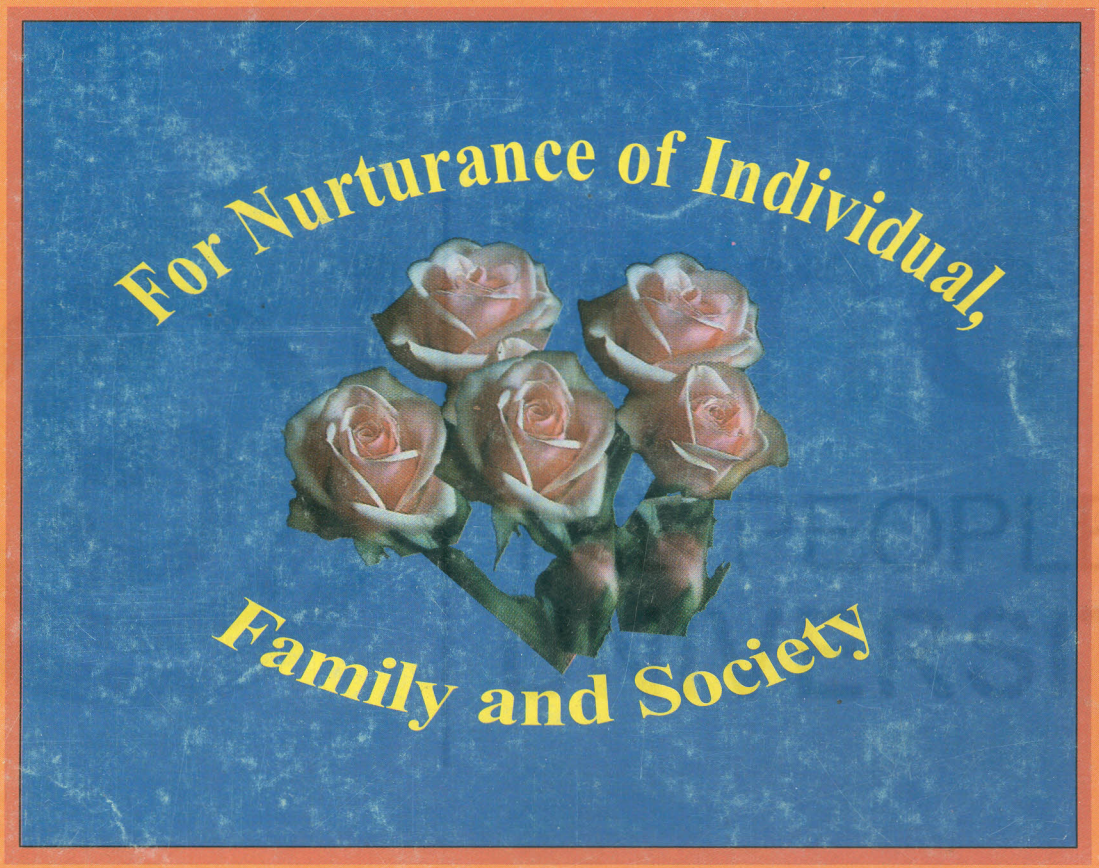
Unit13 : Analysis of Quantitative Data (Descriptive Statistical Measures: Selection and Application)
Unit 14 : Analysis of Quantitative Data: Inferential Statistics Based on Parametric Tests
Unit 15 : Analysis of Quantitative Data: Inferential Statistics Based on Non - Parametric Tests
Unit 16 : Analysis of Qualitative Data
Unit 17 : Data Analysis Techniques in Qualitative Research
Unit 18 : Computer Data Analysis

BLOCK 4 : REPORT WRITING AND EVALUATION

Unit 19 : Synopsis
Unit 20 : Review of Literature
Unit 21 : Research Report: Various Components and Structure
Unit 22 : Evaluating Research Reports

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