UNIT 22 RESEARCH REPORT: VARIOUS COMPONENTS AND STRUCTURE

Structure

22.1 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 thesis 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 thesis 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 in 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 1,2,3, and 4 of this course, we have focused upon the concept of educational 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/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/project.

22.2 OBJECTIVES

After going through this unit, you should 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.

22.3 SIGNIFICANCE OF A RESEARCH REPORT

The role of a research report is to disseminate the findings and results of a research with the readers/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 imagine 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.

22.3.1 What is a Research Report?

Research articles and reports had 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 detail description to try to replicate the experiments themselves. These research reports were viewed as a contribution to the general body of knowledge.

Source: (http:/doj.shef.ac.UK/Research Methods – Lecture % 20. Eleven.doc)

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 class size on teaching practice and pupils' behaviour and attainment". A report could be a product of collaborative/group research work report. For example, a report of UNICEF assisted project entitled "Nutrition and Health Education and Environmental Sanitation: 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, conclusion and recommendation. The diagrammatic representations of the sequence of events (Box 1) of a research process presented here emphasizes that the beginning is i.e. 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

Statement of a problem — Hypothesis/ Research questions — Design — Collection of Data — Analysis of Data — Reporting

Research Report

Title — Abstract

Introduction — Methods — Results — Conclusion

References — Appendix
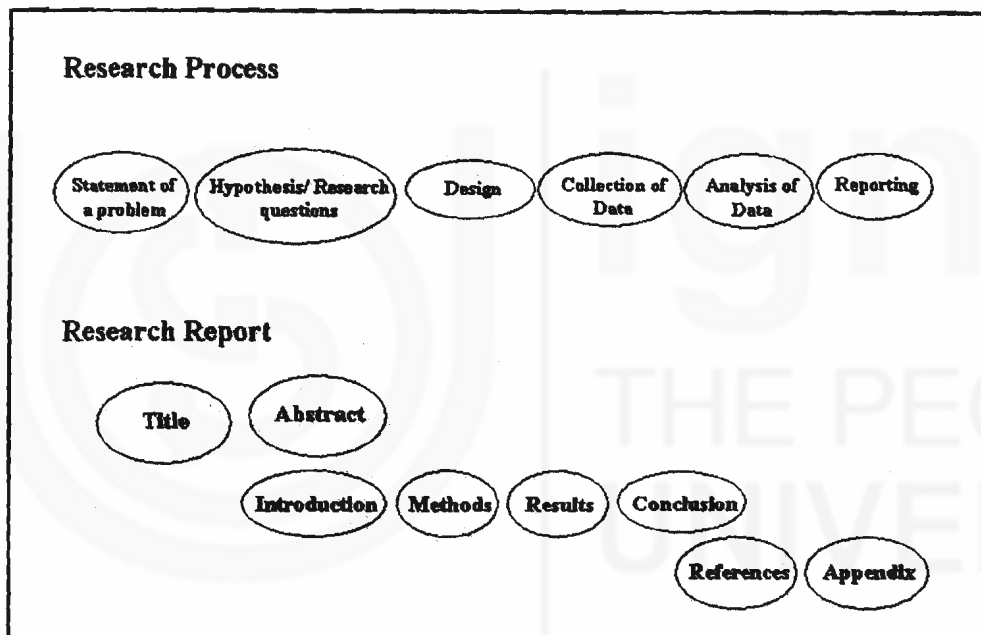
Activity 1

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

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22.3.2 Why to Prepare a Research Report ?

The purpose of the research report is to convey 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 educational activities of institutions. 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/findings

● Used as reference material or for review of related literature to get guidance and to record and utilize the findings for further work

● Utilisation of the research recommendations for decision making

● Replication of research methods in different contexts

● 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 recommendation 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 report 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.

Before proceeding to the next subsection, stop a while and complete this activity.

Activity 2

State the reasons for writing a research report.

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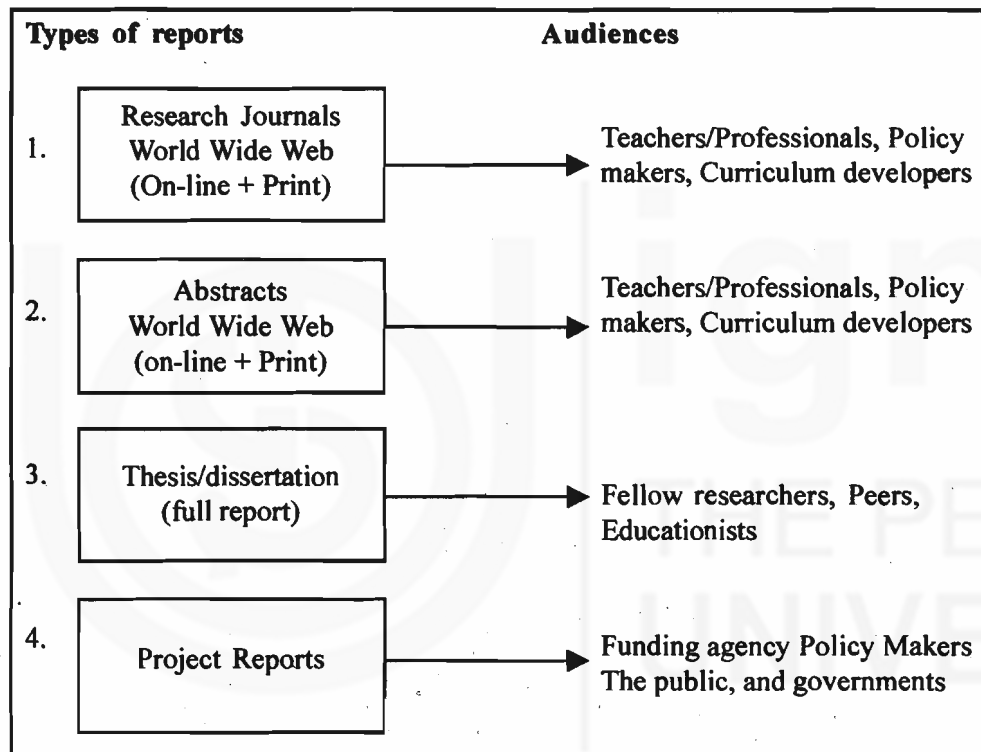

22.4 TYPES OF RESEARCH REPORTS

Researchers disseminate their research findings through research articles prepared for print and on-line journals, conference papers, theses and dissertation, 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 in schools their impact on academic. 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 learning environments for primary schools teachers trained through distance education in Eastern Ethiopia" 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/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	Audiences
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/dissertation (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 format and style 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 results from a research.

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

● Research articles

● Abstracts

● Theses and dissertations

● Project reports

22.4.1 Research Articles

The purpose of research articles is to inform the readers of what you investigated, why and how you conduct 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;

- Summarises 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/ethonographic 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).

22.4.2 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 him/her abreast of the work being done in his/her own field and also in the related fields (Koul, 1986 p. 94).

These abstracts are published in journals and educational periodicals. For example, periodicals are:

i)   Psychological Abstracts (1927 - Onwards)

ii)   Education Abstracts (1949 - Onwards)

iii)   Sociology of Education Abstracts (1965 - Onwards)

iv)   Dissertation Abstracts International (1952 - Onwards)

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 his/her 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.

● 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/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.

Activity

Suppose you are preparing an abstract of your research work/report. Considering the following questions prepare an abstract of your project work

● What information should be presented in an abstract to understand the important aspects of a research work?

● What are the main points from each section of a research report which have to be selected?

● How to summarise the important aspects of a research report in one or two paragraphs?

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In other words, a good abstract summarises 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

- Coherent and readable

> **Points to remember**
>
> *You should remember that an abstract is a concise summary rather than a detail 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.

22.4.3 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 degrees to the student. The reading audiences are committee members, fellow researchers, peer group, 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). The following discussion describes the sections of a typical thesis or a dissertation.

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. Suppose 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/examining committee as a part of a course/programme. Therefore, they must satisfy the specific requirements prepared by an institution. Sometimes, the requirements/style mentioned by standard manuals may be or may not be considered. Universities/institutions/schools who have launched a course/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.

22.4.4 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 educational 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, procedures used for collection of data

- Budget

- Findings

- Conclusions and recommendations

- Acknowledgements

- Appendices

Check Your Progress

Notes: a) Space is given below for writing your answer.

b) Compare your answers with the one given at the end of the 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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22.5 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/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/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/ institutions or department of education 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.

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. These sections could be presented in three major headings. They are:

●   The beginning,

●   The main body, and

●   The end

22.5.1 The Beginning

The beginning or the preliminary section begins with a cover page (and the second cover page). The title page consists of the title of the study, the author's name, institutional affiliation and degree for which the report is submitted, date of submission of the report. Besides a title page this section includes acknowledgements page, table of contents, list of tables, list of figures, and an abstract.

Cover Page

A cover page reflects the nature of your study. It should be brief and to the point. 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. We have reproduced the cover page of a research report in Box. The title should be precise and descriptive. Now-a-days most of the titles are used by the search engines for locating reference materials

Box 3: An example of a Cover Page

Learning Environment
For Primary Teachers Trained Through Distance Education
in Eastern Ethiopia

By

Shimeles Assefa, (M.Sc.)
Enrollment Number 029114729

Alemaya University
Faculty of Education
Alemaya, Ethiopia

Project Work Submitted to the
Indira Gandhi National Open University
In partial Fulfillment of the Requirements for the
Master of Arts (Distance Education)

June, 2005

Table of Contents

A table of contents is essential for any report. It indicates the logical arrangements of the sections and sub-sections in a report. The title of the chapters are written in capitals and the sections within chapters are written in small letters. A sample table of content is given below.

Box 4: Sample of Table Contents

List of Tables

The table of contents page is followed by the page consisting a list of tables which have appeared in the main body of the report. The list contains the exact title of each table, table number and the page number on which each table has appeared. The example of list of table is presented in figure 22.1.

Tables	Pages	
1. Schools, population and sample on eighth grade		47
II. Two sets of experimental data with sums, means and squares		52
III. Calculation of V1 of data of table – II		55

Fig. 22.1: List of Tables and pages in a research report.

List of Figures

The page containing 'list of figures' presented inside a research report comes immediately after the 'list of tables'. The difference between the two is that the figure headings (Fig. 22.2) are not typed in capitals where is the headings of a table are typed in capitals in the text of a report.

Figures	Pages
1. Electrical equipment utilized in the filming procedures	49
2. Equipment used for calculation of kinetic data	55

Fig. 22.2: List of figures and pages in a research report in science education.

Acknowledgements

Acknowledgements are used to indicate the basis of a study, support, review of prior draft of the manuscript and assistance in conducting the research and preparing or typing a manuscript. Figure 22.3 illustrates a sample page of acknowledgments.

Fig. 22.3: A sample of an Acknowledgement Page.

Abstract

The abstract, on page 2 of the research report, describes the study in 100-150 words. Included in this a comprehensive summary of the study, the procedures used, findings and the conclusions of the study. It increases the readership of the article or a research study because it provides a review of the complete study.

Abstract

This study describes distance and open learning environment by exploring what the distance learners feel about their learning environment and by finding out how the environment variables influenced the SGPA of distance learners. The study was conducted among primary teachers trained through distance education in eastern Ethiopia. The findings revealed that there are no gender differences in perception of distance learners about: psycho-social distance learning environment, the institutional support they receive, the home environment, and study centre environment. All of the students felt that the distance learning environment in Eastern Ethiopia, namely, Harar and Dire Dawa areas is below average and it is not an enabling environment in its present status for distance learning. The Z-test was used to test gender differences in perceptions of the distance learning environment. Interview schedules and observation (unstructured) were used to explore the conditions of study centres and student support services. The path and/or regression analysis of the relationship of environmental variables (psycho-social environment, institutional support, home environment, and study centre environment) to the SGPA of distance learners has shown that the environmental-macro variables share no direct effects on the SGPA of distance learners. The environmental variables first affect the study habit of individual learners through micro-variables such as self-motivation, self-regulation, and commitment of time to study. The study has shown that these intervening variables have a more direct effect than the environmental variables on SGPA of distance learners. Therefore, it was found out that the environmental variables does affect the SGPA of distance learners only indirectly (see figure 1 in the text). Having a quality environment by itself does not ensure academic success, but it plays a catalystic role in enhancing the academic performance of students. In general, the findings have suggested a need to upgrade the quality of distance learning environment in eastern Ethiopia.

Keywords: **Learning Environment, Environmental Variables, Self-motivation, Self-regulation, Time-commitment, SGPA, Perceptions.**

22.5.2 The Main Body

The main body or the text of the thesis usually consists of four chapters. They are (i) introduction, (ii) design of the study, (iii) analysis and interpretation of data and (iv) summary and conclusion. But in a few cases (as shown in table of contents on page 39-40 of this unit) you will find five chapters.

Let us discuss these chapters with their functions. (For chapterisation please refer to unit 23)

Chapter 1 Introduction

The introduction gives a broad and general overview of the subject. It introduces the research topic with a proper background and motivate the reader's to read a report thoroughly. This chapter includes:

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.

Hypotheses : Prediction of the eventual outcomes of the study.

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

In most cases the above sub-sections of introduction chapter are common, though practices vary. Some research reports follow the 'house rules'/guidelines provided by the institution while writing this chapter.

In some cases the review of related literature is also presented in the first chapter and is placed immediately after providing the theoretical background to the problem. In experimental research it becomes essential to review related studies to formulate the hypotheses.

In lieu of stating hypothesis, sometimes authors may provide a list of research questions that the study proposes to answer. Regardless of the specific format and organization, after reading an introduction section the reader should have a clear understanding of what is being studied and why it is being studied.

Chapter 2 Review of Related Literature

It is a well organized chapter that shows how the present study is different from other studies. Through a review, a theoretical basis and justification for the present study is formed. It is important that the authors establish the connection between their study and similar research or published materials. By citing previous research or theses pertinent to a problem, you are able to set the stage for showing where your particular study fits into the overall scheme of a project work.

Note : While reviewing literature, a researcher has to be familiar with reference books that list the abstracts of studies done in the field of education, for example, ERIC, Psychological Abstracts and the research journals and book. Now a days most libraries have access to the entire ERIC file and Resources in Education (RIE), Annual Cummulation of Abstrats, Current Index to Journals in Education (CIJE), the Educations Index. Searching data bases such as ERIC 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.

While writing the review of literature one way is to pull these studies into an organized pattern i.e. using a funnel approach. You could begin with broad statements that can then be used to isolate your research problem from the vast number of topics covered in a field. Continue this funneling (Ref. Fig. 22.4) systematically eliminating irrelevant research and then summarise those points that form a basis for your study.
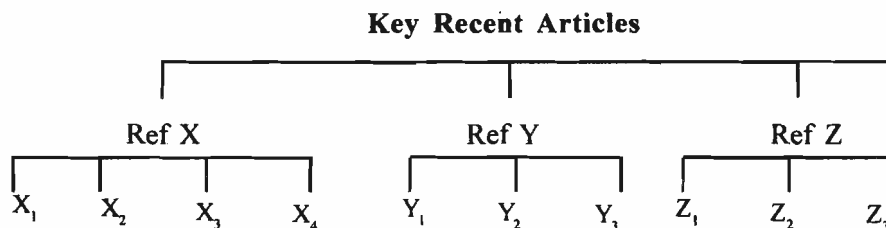
Key Recent Articles

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           X₁   X₂   X₃   X₄     Y₁   Y₂   Y₃     Z₁   Z₂   Z₃
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X_1 X_2 X_3 X_4 Y_1 Y_2 Y_3 Z_1 Z_2 Z_3

Fig. 22.4: A funnel approach for review of related studies.

One should note that the review should be the analytical summary of the related literature which tells a reader about the important studies and theories that proceeded the research work (see unit 21 for detailed information about reviewing the literature).

Functions

It is important for you to identify the literature you have reviewed only those which are pertinent because they permit you to establish the importance of your study. Some references may by important for developing a documented rationale.

The review of related literature provides a synthesis of research findings. It interrelates the research findings with existing theories and research works. For example, application or a theory or model from one field to a totally new area of study.

The review provides a new perspective to the study supported by the positive and negative evidence presented in the various research documents. A synthesis is thus the argument or new creation developed from the pre-existing materials.

The research review is also oriented and guided by the purpose and problem(s) of a study. The review focuses on addressing the purpose and problem(s) of a problem directly. A review presents on extended narrative that demonstrates and warrants the argument with direct quotations, citations and graphics presentation.

One way to consider the **presentation** of the results of the research review is to conceptualise an inverted triangle (fig. 22.5).

Essential points

Introducing the most broad argument and presentation

Important information
presents the narration that leads directly from the broad essential points to the conclusion and recommendation
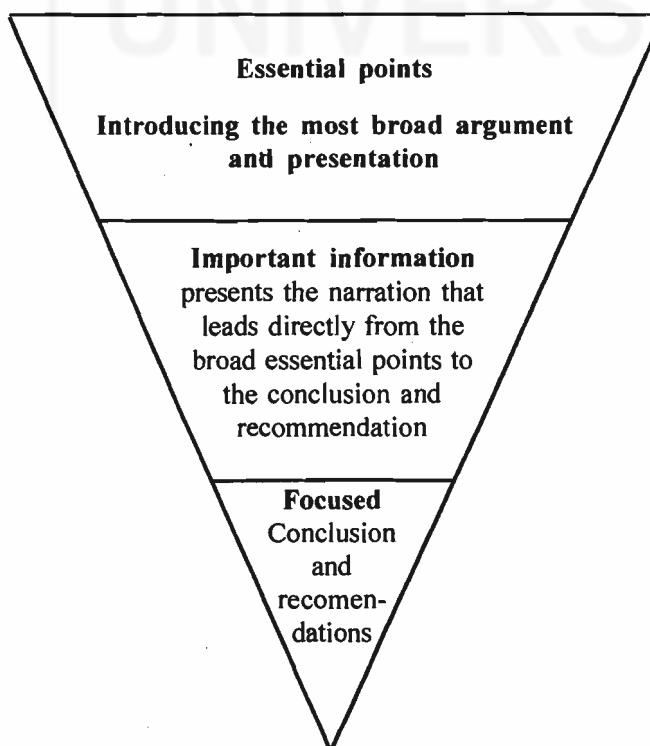
Focused Conclusion and recomen- dations

Fig. 22.5: The inverted triangle for reviewing related research studies.

The figure 22.5 provides a graphic representation of how to build an argument while 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 Ernakulam, India might move through a progression of narrowing elements like that presented in figure 22.6. 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.
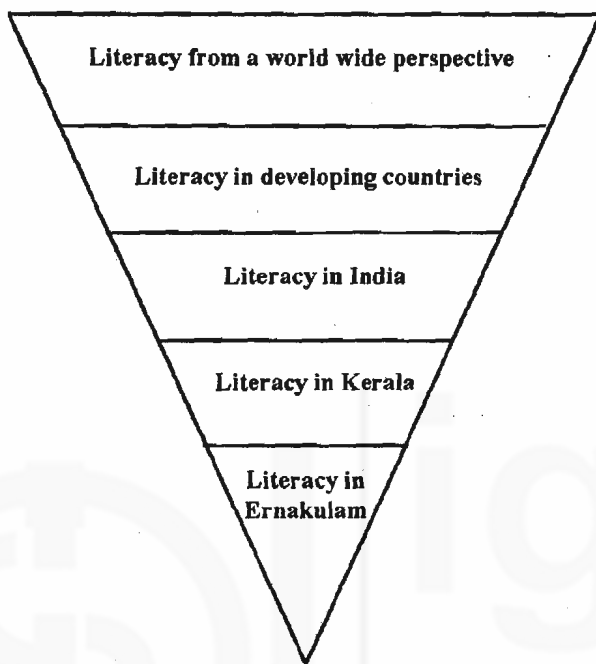
Fig. 22.6: The inverted triangle – Literacy in Ernakulam, India.

Citation and referencing

There are many styles for reporting the review of research. For this purpose the publication style manual of the American Psychological Association, 1994 could be used.

While referencing and citing in a research review the reviewer should keep in mind two important issues:

i)   Citations are placed in the text either to refer the reader to additional relevant information on the topic or to provide credit to the original source of the idea or information presented;

ii) References are provided to aid the reader in locating the original source of information cited in the review.

A **citation** in the text is required whenever the idea or information is not the original idea of the reviewer. If a reviewer quotes directly the basic substance of the information from a source, a citation must be provided. To use the information or ideas of another researcher/author without proper acknowledgement through a citation is a serious issue. The names of the author(s) and the publication data are always provided in a citation. For example, John, W.Best, and Kahn, V. James, *Research in Education* (New Delhi: Prentice Hall of India, 2001), pp. 61-80. Both author and date are essential information because a specific author or group of authors may have written more than one document included in the review. Thus for a reader to understand which document is being cited, both the author and data are

necessary in every citation. In case of a direct quotation (identified by the use of quotation marks the page from which the quotation was taken must be provided. Page numbers are always required for direct quotations or statistics.

Design of the Study

The next major chapter of a research report is the design of the study. This is the third chapter of the research report. This section is generally identified by **Title**, **Methods** or **Methodology** or **Procedures** or **Design of the Study**. Here the author provides a description of the procedures for selection of sample/research participants, research instruments and procedures for the administration of tools. The section is highly structured and contains detailed statement explaining the research methodology used to conduct the study. Ideally, this chapter should be written in such a way that would enable a reader to replicate the study using the same methodology (The detailed discussion about the various sections is discussed in the next unit 23, chapterisation and its functions). This chapter includes the procedures and instruments, results, and finally the report's main body which concludes with the discussion section. The discussion section serves the function of presenting the outcomes of the study. Here the author provides interpretation of findings, culminating with a conclusion that provides an answer to the research problem.

This section of a research report serves six major functions. They are:

● Summarising the findings.

● Planning and interpreting of what the results mean to achieve meaningful conclusions and generalizations

● Theorizing or theory development, either as support for existing theory or for the establishment of original theory

● Recommendation or application – since results of a research have theoretical and practical implications for altering professional practices, the discussion section provides the platform for making recommendations.

● Suggesting extensions – this section of a report includes suggestions for future research.

The author should concludes the main body of a report that reflects whether the original research problem is better understood, or even resolved as a result of this study.

Check Your Progress

Notes: a) Space is given below for writing your answer.

b) Compare your answers with the one given at the end of the unit.

3. Discuss the functions of (i) review of related research and (ii) writing a discussion section in a research report.

i) Functions of review of literature

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ii)   Functions of a discussion section

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22.5.3 The End

The last section labeled "References", and "appendices" appear at the end of a research report.

References

The purpose of the 'references' section is to enable the reader to find out the books that have been referred. The reference section is a list of works of other authors that have been cited in the report. The references are listed alphabetically according to the last name of the first author of the work. A bibliography contains a reference to all background material. The reference section lists only those works that have been referred in the report. If you have more than one work by the same author or authors, the works should be listed according to data of publication. For each author, give the last name followed by a comma and the first (and middle) initials followed by periods. For example,

Book

Koul, L. (1986): *Methodology of Educational Research*, New Delhi: Vikas Publishing House Pvt. Ltd.

*   Separate multiple authors with commas and the last author with the amper-sand ('&") rather than the word "and".

*   After the author(s) comes the year (in parenthesis). For example:

    Best, J.W. & Kahn, J.V. (1995) *Research in Education.* (7th ed.), New Delhi: Prentice – Hall of India Pvt. Ltd.

*   For a journal reference, underline the title of the journal, volume number and adjacent punctuation marks.

For example:

Journal

Barbara, B.L. and Tracy, C.R. (2003): The effects of collaborative action research on preservice and experienced teacher partners in professional development. *Journal of Teacher Education.* Vol. 54, No. 2, Pages 135-149.

Tariq, A. and Darcy, M. (2003): Overcoming resistance to change: A case study of revision and renewal in a US secondary education teacher preparation programme. *Teaching and Teacher Education: An International Journal of Research and Studies.* Vol. 19, No. 4 pages 409-420.

Book

Mcniff, J. and Whitehead, J. (2002): *Action Research Principles and Practices.* (2nd ed.) London: Routledge Falmer.

Travers, Robert M.W. (1978). *An Introduction to Education Research.* New York: Mac-millan Publishing Company, Inc.

Appendix

An appendix is an optional supplement to a research report. If there is a long article that you feel is essential for understanding and replication, probably should be included as an appendix. For example complicated statistical analysis, published articles, copies of questionnaires, inventories, tabular formation, special materials or illustrations of testing equipments may include as appendices at the end of a report.

Check Your Progress

Notes: a)   Space is given below for writing your answer.

   b)   Compare your answers with the one given at the end of the unit.

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

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5.   List the main chapters of a research report.

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22.6   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 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. The details of chapterisation will be discussed in the Unit 23.

22.7   UNIT-END ACTIVITY

1.   Collect at least one Ph.D or MA or M.Ed. research report each 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.

22.8   POINTS FOR DISCUSSION

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

2. Why would you do things this way?

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

4. Would you consider writing a research report as an on-going task throughout the research study?

5. Why do you want to write a report?

6. How much detail do you think you should discuss about methods of study?

7. What basic format/reference book would be appropriate for writing a report?

22.9   SUGGESTED READINGS

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

Baumgartner, A. Ted., Strong, H. Clinton, and Hensley, D. Larry (2002): *Conducting and Reading Research in Health and Human Performance*. Third Edition, San Francisco: McGraw Hill.

Bell, J. (1999): *Doing Your Research Project*, A guide for first-time researchers in Education and Social Science. Third Edition, New Delhi: Viva Books Private Ltd.

Best, J.W., and Kahn, J.V. (1995): *Research in Education*, Seventh Edition, New Delhi: Prentice Hall of India Private Limited

Blaxter, L., Hughes, C., and Tight, M. (2002): *How to Research*. First South Asian Edition, New Delhi: Viva Books Private Limited.

Campbell, W.G. (2000): *Form and Style: Thesis, Reports, Term Papers*. 11th ed., Boston: Houghton Miffin.

Chicago Manual of Style (2003): Chicago: The University of Chicago.

Crowl, Thomas K. (1993): *Fundamentals of Educational Research*. Wim. C. Brown Communications, Inc. USA.

Gibaldi, J. (2003): *MLA Handbook for Writers of Research*. (6th ed.), http://doj.shef.ac.uk/Research Methods - Lecture % 20 Eleven. doc.

Koul, Lokesh (1997): *Methodology of Educational Research*. New Delhi: Vikas Publishing House Pvt. Ltd., Third Revised Edition.

Slade, C. (2000): *Form and Style: Research Papers, Reports, Thesis*. 11th ed., Boston: Honghton Mifflin.

Strunk Jr., W. and White, E.B., Angell, R. (2000): *The Elements of Style*. (4th ed.), Pearson: Allyn and Bacon.

22.10   ANSWERS TO CHECK YOUR PROGRESS

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 from 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.

3. i)   The review of related literature forms a theoretical basis and justification for the present study. It helps the researcher to make the connection between the present study and similar research or published materials. It helps to establish the importance and documented rationale of a research study. The review provides a new perspective to the present study supported by the positive and negative evidence presented in the various research documents.

    ii) The discussion section of a report provides the platform for making recommendations and application of research findings . It serves the function of presenting the outcomes of the study. It summarizes the finding with conclusions and generalizations. It describes the planning and interpreting what the results mean to achieve meaningful generalizations. It also provides a base for theorizing or theory development, either as support for an existing theory or for the establishment of an original theory.

4. 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.

5. 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