

## Chapter one: Choosing a Research Project

### 1. Introduction to Educational Research

#### Lecture outline

- ◆ Meaning of research
- ◆ Methodology, methods, and techniques
- ◆ Purpose of research
- ◆ Criteria of good research
- ◆ Types of research
- ◆ The Research process

#### Introduction

This lecture introduces you to what we mean when we say we are ‘doing research’ and why research is an important way of learning more about a subject. You will meet some key concepts that are used within research. Moreover, all stages taken to achieve a scientific research project are briefly explained in this lecture and elaborate explanation will be offered during this academic year. This lecture also outlines the scientific way in which we approach and conduct our research projects.

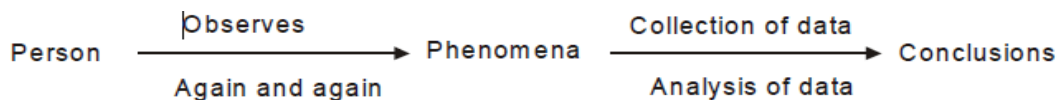
#### Meaning of Research

##### A. Term research

The term ‘Research’ consists of two words:

$$\text{Research} = \text{Re} + \text{Search}$$

‘Re’ means again and again and ‘Search’ means to find out something, so research requires that:



##### B. Definitions of research (and educational research)

The concise Oxford Dictionary defines research as: "careful search or inquiry; endeavor to discover new or collate old facts etc. by scientific study of a subject; course or critical investigation".

- 1) Howard and Sharp (1983, p. 6) define research as 'seeking through methodical processes to add to one's own body of knowledge and, hopefully, to that of others, by the discovery of non trivial facts and insights'.
- 2) Drew (1980, p.4) sees research as 'conducted to solve problems and expand knowledge'.
- 3) "Research is considered to be the more formal, systematic intensive process of carrying on the scientific method of analysis. It involves a more systematic structure of investigation, usually resulting in some sort of formal record of procedures and a report of results or conclusion." **John W. Best**
- 4) Hult Christine (1996) broadly defines research as: "Research is a systematic inquiry designed to further our knowledge and understanding of a subject
- 5) "... research may be defined as a scientific undertaking which by means of logical and systematized techniques aims to discover new facts or verify and test old facts , analyse their sequences , inter-relationships and casual explanation which were derived within an appropriate theoretical frame of reference , develop new scientific tools , concepts and theories which would facilitate reliable and valid study of human behavior." **P.V. Younge**
- 6) "Research in education is a disciplined attempt to address questions or solve problems through the collection and analysis of primary data for the purpose of description, explanation, generalization, and prediction. Research is fundamentally a problem-solving

activity which addresses a problem, tests a hypothesis or explains a phenomena."  
(Anderson & Arsenault, 1998, p.6)

From the above definitions we can deduce that research is a formal attempt to provide answers to questions and in which we intentionally set out to enhance our understanding of a phenomenon. Research is a systematic process of collecting, analyzing, and interpreting information or data. It may yield abstract and general answers, as basic research often does, or it may give extremely concrete and specific answers, as applied research often does. It is also oriented towards the discovery of relationship that exists among phenomena about which we are interested or concerned in order to increase our understanding of a certain phenomenon. Research is the most important process for advancing knowledge for promoting progress and to enable man to relate more effectively to his environment to accomplish his purpose and to resolve his conflicts.

Remember: **What research is not:** Following are three statements that describe what research is not:

- Research is not merely gathering information.
- Research is not merely rummaging around for hard-to-locate information.
- Research is not merely transporting facts from one location to another.

### ***Distinguish Methodology from Methods and Techniques***

#### **1. The Research Methodology:**

The etymological meaning of methodology (deduced from Greek *methodos* = *meta hodos*) is ‘the way along which’, in other words aimed at following a certain route. In this case methodology implies: the way (or route) the researcher will need to take in order to achieve a certain result (knowledge, insight, design, intervention, solution).

In more everyday language it means ‘. . . a system of methods and principles for doing something’ (Collins Cobuild 1987).

Methodology assumes there is a logical order the researcher needs to follow in order to achieve a certain predetermined result. Defining and defending the logic of this logical order is what methodology is all about.

So, A methodology indicates the main path to the destination, but without specifying the individual steps. Methodology thus helps make the main outline of the approach transparent to both yourself and others. In this way, it functions as a set of principles and global instructions. However, this does not mean that methodology prescribes what you should do (or not) in a specific situation or a particular moment in time. Such details entail methods and techniques.

## **2. The research methods:**

They are specific steps of action that need to be executed in a certain order during the research. It is obviously impossible to analyze data before it is available for example. Prior to the analysis you will need to consider the best way to collect the data. In this way, a method is adopted that can be compared to a railway timetable with arrival and departure times for all stations. Once the train has departed, it will pass all the stations in a fixed order.

## **3. The research techniques:**

They are practical ‘instruments’ or ‘tools’ for generating, collecting and analyzing data. Further elaboration of the methods within a specific methodology takes place in choosing techniques, also referred to as ‘instruments’ or ‘tools’. Techniques can be understood as concrete instructions for acting that have an explicit, compelling and prescribing character.

## ***The Purpose of Research***

The purpose of research is to discover answers to questions through the application of scientific procedure. The main aim of research is to find out the truth which is hidden and which has not been discovered as yet. Though each research study has its own specific purpose, here are some general purposes of research suggested by Collis & Hussey (2003):

- To review or synthesize existing knowledge
- To investigate existing situations or problems
- To provide solutions to problems
- To explore and analyze more general issues
- To construct or create new procedures or systems
- To explain new phenomenon
- To generate new knowledge
- ...or a combination of any of the above!

### ***General characteristics of research***

1. Educational research attempts to solve a problem in an educational setting
2. Research involves gathering data from first-hand (primary) or using existing data for a new purpose
3. Research is based upon observable experience or empirical evidence.
4. Research generally employs carefully designed procedures and rigorous analysis.
5. Research requires expertise and familiarity with the field.
6. Research attempts to find an objective, unbiased, and valid solution to the problem.
7. Research is carefully recorded and reported to other persons interested in the problem.

### ***Criteria of good research***

Whatever may be research is, one can state the qualities of good research should be as under:

***Good research is systematic:*** It means that research is structured with specified steps to be taken

in specified sequence in accordance with the well-defined set of rules. Systematic characteristic of the research does not rule out creative thinking but certainly does reject the use of guessing and intuition in arriving at conclusions.

**Good research is logical:** This implies that research is guided by the rules of logical reasoning and the logical process of induction and deduction are of great value in carrying out research. Induction is the process of reasoning from a part to the whole; whereas, deduction is the process of reasoning from some premise.

**Good research is replicable:** This characteristic allows research results to be verified by repeating the study and thereby building a sound basis for decisions (Kothari, 1990).

**Types of research**

Types of research can be classified from three different perspectives (Kumar, 2011):

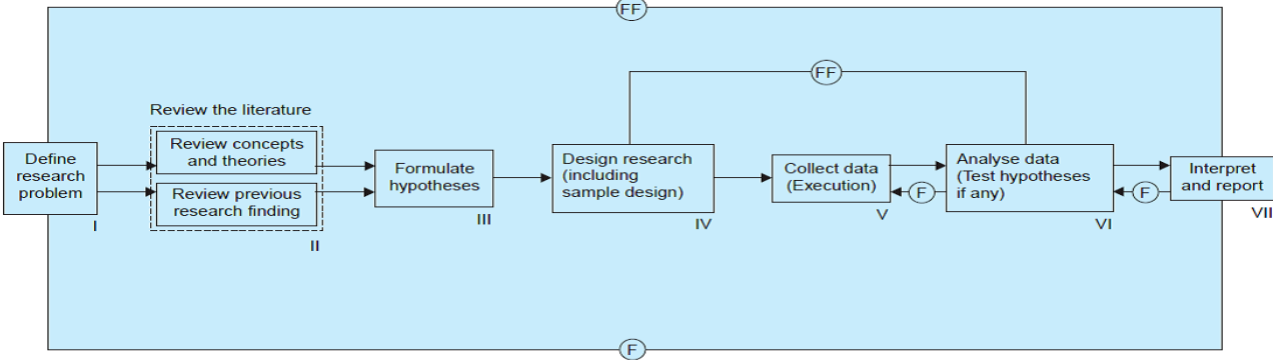
<b>Types of research</b>	
<b>1. Application of the findings of the research study</b>	<b>a. Pure research:</b> This kind of research is academic in nature and is undertaken in order to gain knowledge about phenomena that may or may not have applications in the near future, and to develop new techniques and procedures that form the body of research methodology
	<b>b. Applied research:</b> Most of the research in social sciences is applied. In other words, the research techniques, procedures and methods that form the body of research methodology are applied
<b>2. Objectives of the study</b>	<b>a. Descriptive:</b> A research study classified as a descriptive study attempts to describe systematically a situation, problem, phenomenon, service or program, or provide information about the living conditions of a community, or describe attitudes towards an issue.
	<b>b. Correlational research:</b> The main emphasis in a correlational study is to discover or establish the existence of a relationship/ association/ interdependence between two or more variables or more aspects of a situation.
	<b>c. Explanatory research:</b> this kind of research attempts to clarify <b>why and how</b> there is a relationship between two aspects of a situation or phenomenon. <b>how home environment affects</b>

	<b>children’s level of academic achievement</b>
	. <b>d. Exploratory research:</b> it is a study which is undertaken to explore an area where little is known or to investigate the possibilities of undertaking a particular research study. It is flexible and can answer <b>what, who</b> and <b>why</b> questions
<b>3. Mode of enquiry used in conducting the study</b>	<b>.a. Quantitative research (structured research):</b> The main objective of this research is to quantify the variation and diversity in a phenomenon, situation or attitude.
	<b>b. Qualitative research (unstructured):</b> A qualitative study describes the variation and diversity in a phenomenon, situation or attitude with a flexible approach so as to identify as much variation and diversity as possible.

**Steps of the research process**

Research process consists of series of actions or steps necessary to effectively carry out research and the desired sequencing of these steps. The research process consists of a number of closely related activities. At first glance, this may seem like straightforward process, but it is not. Because research is dynamic, the elements of the research process interact and impact on one another and activities overlap continuously rather than following a strictly prescribed sequence. However, the following order concerning various steps provides a useful procedural guideline regarding the research process:

1. Problem formulation
2. developing the hypothesis
3. Literature review
4. Selection of research design, subjects, and data collection techniques
5. Data gathering
6. Data processing and analysis
7. Preparation of the report: presentation of the results and formal write-up of conclusions.



Where (F) = feed back (Helps in controlling the sub-system to which it is transmitted)  
 (FF) = feed forward (Serves the vital function of providing criteria for evaluation)

**The Research Process Cycle**

