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Research Methodology
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Lesson One: Basic Concepts of Research

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Introduction

Research is the **powerful tool** that leads **human to progress** in the different fields of life because the aim of any research is to answer a question or to provide new knowledge. New products, new facts, new concepts and new ways of doing things are being found due **to ever-increasing significant research** in different fields of life; educational, social, medical, physical, psychological, and other fields. In fact, "**The secret of our cultural development has been research**, pushing back the areas of ignorance by discovering new truths, which, in turn, lead to better ways of doing things and better products." John W. Best

1. Definition of Research

The word 'Research' is comprises of two words = Re+Search. It means to search again. So research means a systematic investigation or activity to gain new knowledge of the already existing facts.

The following definitions will help you in understanding the research concept.

According to C.R. Kothari,

"Research in common parlance refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. In fact, research is an art of scientific investigation."

According to P.M. Cook

"Research is an honest, exhaustive, intelligent searching for fact and their meanings or implications with reference to a given problem. The product of findings of a given piece of research should be an authentic, verifiable, and contribution to knowledge in the field studied".

He has emphasised the following characteristics of research in his description:

- It is an honest and exhaustive process.
- The facts are studied with understanding.
- The facts are discovered in the light of a problem. Research is problem- centred.
- The findings are valid and verifiable.
- Research work should contribute new knowledge in that field (Cited in Singh, 2006).

According to C. Francies Rummel,

"Research is an endeavor / attempt to discover, develop and verify knowledge. It is an intellectual process that has developed over hundreds of years ever changing in purpose and form and always researching to truth" (Saranya, 2023, P. 2).

According to Francis G. Cornell (2004, p.1)

"To be sure the best research is that which is reliable, verifiable, and exhaustive, so that it provides information in which we have confidence. The main point here is that research is, literally speaking, a kind of human behaviour, an activity in which people engage".

Anderson (1998, P. 8) explained the nature of educational research saying that

"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." Apprehending educational research from an empiricist perspective, Anderson argues that this type of research aims at discovering the laws that govern human behaviour in an educational setting:

2. Research Methodology vs Research Method

Research Methods and Research Methodology are two terms that are often confused as one and the same. Strictly speaking they are not so and they show differences between them.

Research methodology is a systematic way to solve a problem. It is a science of studying how research is to be carried out. Essentially, *the procedures by which researchers go about their work of describing, explaining and predicting phenomena are called research methodology.* It is also defined as the study of methods by which knowledge is gained. Its aim is to give the work plan of research.

Research methods are the various procedures, schemes, etc. used in research. All the methods used by a researcher during a research study are termed as *research methods*. They are essentially planned and scientific. They include methods of data collection and data analysis. Research methods help us collect samples, data and find a solution to a problem. Particularly, scientific research methods call for explanations based on collected facts, measurements and observations and not on reasoning alone. They accept only those explanations which can be verified by experiments.

Research Methods	Research Methodology
• Research methods are the methods used by researchers to collect data from researching a particular research topic. • The objective is to find a solution. • Research methods are useful to apply during the latter stage of research process. • It is a small part of research methodology. • It consists of various techniques where various studies and experiments are used to conduct research and reach an appropriate conclusion. • It consists of different investigation techniques. • It includes of carrying out an experiment, survey, test and so on.	• A research methodology is a systematic approach to solve the research problem and to reach a new conclusion. • The objective is to determine the solution by applying correct procedures of research. • Research methodologies are applied in the initial stage of the research being conducted. • It is a multi-dimensional concept. • Research methodologies are used applied during the initial stage of the research to explain the purpose of chosen methods and how they will serve its function. • It is systematic strategy to achieve the decided objectives • It includes different techniques which are used during the performance of the experiment, survey, and test, etc.

3. Objectives of Research

The purpose of research is to discover answers to questions through the application of scientific procedures. The main aim of research is to find out the truth which is hidden and which has not been discovered yet. Though each research study has its own specific purpose, we may think of research objectives as falling into a number of following broad groupings:

1. To gain familiarity with a phenomenon or to achieve new insights into it (studies with this object in view are termed as *exploratory* or *formulative* research studies;

2. To portray accurately the characteristics of a particular individual, situation or a group (studies with this object in view are known as *descriptive* research studies);

3. To determine the frequency with which something occurs or with which it is associated with something else (studies with this object in view are known as *diagnostic* research studies);

4. To test a hypothesis of a causal relationship between variables (such studies are known as *hypothesis-testing* research studies).

4. General Characteristics of Research

The following characteristics may be gathered from the definitions of "research":

- It gathers new knowledge or data from primary or first-hand sources.
- It places emphasis upon the discovery of general principles.
- It is an extent systematic and accurate investigation.
- It uses certain valid data gathering devices.
- It is logical and exact.
- The researcher eliminates personal feelings and preferences.
- Research is patient and unhurried activity
- Research is carefully recorded and reported.
- Conclusions and generalisations are arrived at carefully and cautiously (Singh, 2006).

5. Criteria of a 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. Introduction is the process of reasoning from a part to the whole; whereas, deduction is the process of reasoning from some premise. In fact, logical reasoning makes research more meaningful in the context of decision making.

• **Good research is replicable:** This characteristic allows research results to be verified by replicating the study and thereby building a sound basis for decisions (Kothari, 2004).

6. Types of Research

The basic types of research are as follows:

1. Description Vs. Analytical

The major aim of descriptive research is description of the state of affairs as it exists at present. In analytical research, on the other hand, researcher has to use facts or information already available, and analyse these to make a critical evaluation of the materials.

2. Applied Vs. Fundamental

Research can either be applied or (action) research or fundamental (basic or pure) research. Applied research aims at finding a solution for an immediate problem facing a society or an organisation; whereas, fundamental research is mainly concerned with generalisations and with the formulation of the theory

3. Conceptual Vs. Empirical

Conceptual research is that related to some abstract idea(s) or theory. It is generally used by philosophers and thinkers to develop new concepts or reinterpret new ideas. On the other hand, empirical research relies on experience or observation alone, often without due regard for system or theory.

4. Other types of research

All other types of research are variations of one or more of the above examples. Generally, these types of research are based on either the purpose of research, or the

time required to accomplish research, or the environment in which research is done, or on the basis of some similar factor.

Historical research is that which utilises historical sources likes documents. It is concerned with the study of ideas, or events of the past. Research can also be classified as conclusions-oriented and decision-oriented. A research in doing conclusion oriented research is free to pick-up a problem, re-design the enquiry as s/he proceeds, and is prepared to conceptualise as s/he wishes. On the other hand, decision-oriented research is always for the need of decision maker and the researcher. In this case, the researcher is not free to embark upon research according to his/her inclination.

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