

A Presentation on Scientific Research



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Meaning of research

Research is a process steps used to collect and analyse information to increase our understanding of a topic or issue.

It consists of three steps:

- 1) Pose a question
- 2) Collect data to answer the question
- 3) Present an answer to the question



Types of research

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graph LR; A[Types of research] --- B[BASIC RESEARCH]; A --- C[Applied Research]; A --- D[QUALITATIVE RESEARCH.]; A --- E[QUANTITATIVE RESEARCH];
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BASIC
RESEARCH

Applied
Research

QUALITATIVE
RESEARCH.

QUANTITATIVE
RESEARCH

Basic Research

It is the research which is done for knowledge enhancement and for the welfare of human, animal and plant kingdom not for commercial potential. The main motivation is to expand man's knowledge, not to create or invent something. There is no obvious commercial value to the discoveries that result from basic research. Basic research lay down the foundation for the applied research.

Applied Research

Applied research is designed to solve practical problem of the modern world. The goal of applied research is to improve the human condition. It focus on analysis and solving social and real life problems. It is conducted on large scale basis and is expensive. Eg: improve agriculture crop production, treat or cure a specific disease, improve the energy efficiency homes etc.

Applied research can be further classified as:

- 1) problem oriented research
- 2) problem solving research.



Problem oriented research

Problem oriented research is done by industry apex body for sorting out problems faced by all the companies.

Eg:-

WTO does problem oriented research for developing countries, in india agriculture and processed food export development authority (APEDA) conduct regular research for the benefit of agri-industry.

Problem solving

Problem solving is type of research which is done by an individual company for the problem faced by it.

Eg:-

Videocon international conducts research to study customer satisfaction level, it will be problem solving research.

QUALITATIVE RESEARCH.

Qualitative research presents non-qualitative type of analysis and is used for collecting, analyzing and interpreting data by observing what people do and say . It is much more subjective and uses very different methods of collecting information , mainly individual, in depth interviews and focus groups. The nature of this type of research is exploratory and open ended.

It can be further classified as:

- 1) Phenomenology
- 2) Ethnography
- 3) Case study

Phenomenology

It is the type of research in which the researcher attempts to understand how one or more individuals experience a phenomenon.

Eg:-

We might interview 20 victims of bhopal tragedy.

Ethnography

This type of research focuses on describing the culture of a group of people. A culture is the shared attributes, values, norms, practices, language, and material things of a group of people.

Eg:-

The researcher might decide to go and live with the tribal in Andaman island and study the culture and the educational practices

Case study

It is the form of qualitative research that is focused on providing a detailed account of one or more cases.



QUANTITATIVE RESEARCH

This research aim to measure the quantity or amount and compares it with past records and tries to project for future period. The process of measurement is central in it as it provides fundamental connection between empirical observation and mathematical expression of quantitative relationships. Statistics is most widely used in it.

Objective:

To develop and employ mathematical models, theories or hypothesis pertaining to phenomena.

Significance of research

- 1) To Gather Necessary Information
- 2) To Make Changes
- 3) Improving Standard Of Living
- 4) For A Safer Life
- 5) To Know The Truth
- 6) Explore Our History
- 7) Understanding Arts

Research methods versus methodology

Research methods

- 1) Research methods are the methods by which you conduct research into a subject or a topic.
- 2) It involves conduct of experiments, tests, survey and the like.
- 3) It aims at finding solution to the research problems.

Research methodology

- 1) It explains the methods by which you may proceed with your research.
- 2) It involves the learning of various techniques that can be used in the conduct of research and the like.
- 3) It aims at finding the employment of the correct procedure to find out solutions.

Research Process

- 1) It is series of various actions which are necessary to effective research work.
- 2) The steps involved in research process are not mutually exclusive nor they are separate and distinct.

Steps of the research process

- 1) Formulate your question.
- 2) Get background information.
- 3) Refine your search topic.
- 4) Consider your resource options.
- 5) Select the appropriate tool.
- 6) Use the tool.
- 7) Locate your materials.
- 8) Analyze your materials.
- 9) Organize and write.
- 10) Compose your bibliography



Criteria for good research

- 1) The aim of the research should be clearly mentioned, along with the use of common concepts.
- 2) The procedures used in the research should be adequately described, in order to permit another researcher to repeat the research for further advancement, while maintaining the continuity of what has already been done.
- 3) The researchs procedural design should be carefully planned to obtain results that are as objective as possible.
- 4) The flaws in the procedural design should be sincerely reported by the researcher to correctly estimate their effects upon the findings.
- 5) The data analysis should be adequate to reveal its significance.
- 6) The methods used during the analysis should be appropriate.
- 7) The reliability and validity of the concerned data should be checked carefully.
- 8) The conclusions are needed to be confined and limited to only those data, which are justified and adequately provided by the research.
- 9) In case, the researcher is experienced and has a good reputation in the field of research, greater confidence in research is warranted.

Problems faced by researchers in Pakistan

- 1) Lack of Scientific Training.*
- 2) Lack of Confidence:*
- 3) Insufficient Interaction.*
- 4) Lack of Code of Conduct.*
- 5) Inadequate Assistance.*
- 6) Improper Library Management.*
- 7) High Cost of Publishing.*

Research Orientation

1. Will your research contribute to knowledge and practice?
 - It fills a void or extends existing research
 - It replicates a study with new participants or a new site
 - Problem has not been studied or understudied
 - It gives “voice” to people not heard, silenced, or rejected in society
 - It informs practice
2. Accessed to people & sites.
3. Time, Resources and skills.
4. To prove what you already know.