

RESEARCH METHODOLOGY : AN OVERVIEW

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INTRODUCTION

- It is an investigation of finding solution to scientific and social problems, through systematic analysis.
- Research is done with the help of experimental study collection of data , observation ,analysis ,comparison etc.
- It can lead to new contributions to the existing knowledge.
- Research is an important tool in all pharmaceutical and other business industries for higher growth & to improve the quality of products.

DEFINITION

Research :

The research defined as a logical, scientific and systematic search for new and useful information on a specific topic. OR it is investigation of finding solution to specific and social problems , through systematic analysis. OR any gathering of data, information and facts for the advancement of knowledge.

Thesis :

The proposition laid down as a theme to be discussed and proved . A discussion to maintain and prove a thesis especially written or delivered by a candidate for university degree – Ph.D.

OBJECTIVE

- The main aim of research is to find out the truth which is hidden and which has not been discovered as yet .
- To serve the society by solving social problems.
- To overcome or solve the problems occurring in our everyday life.
- To get research degree for better employment or promotion .
- To develop new scientific method , concept and theories to solve the scientific and non-scientific problems.
- To discovered new things and tests the existing facts.

IMPORTANCE OF RESEARCH :

- Research provides basis for many government policies.
e.g. : preparation of budget, solution for social problem,etc.
- It is an important tool in all pharmaceutical and other business industries for higher growth & to improve the quality of products.
- Isolation , identification and characterization of new living organisms, materials.
- It gives guidelines for solving problems.
- The process such as Human genome project ,Gene therapy , superconductivity have been discovered through research .

- It helps to study the application of existing theories and concepts.
- Research gives the solution for problems of large and small scale industries.
- Helps to learn how to use libraries & other information resources
- They helps to finding answers to social problems.
- Research is one of the important parameter for International University Ranking .

TYPES OF RESEARCH

- **Descriptive Research :**

Means description of the state of affairs as it exist at present. Researcher only reports only what has happened or what is happening.

- **Applied research :**

Aims at finding solution for an immediate problem facing a society or an industry business organization. Most of experimental research , case studies , and inter – disciplinary research are essentially applied research .

- **Quantitative Research :**

This Research is based on measurement of Quantity or amount. This is structured or predetermined methodology. Based on measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity. . Determination of amount by volumetric ,calorimetric, or instrumental methods.

■ **Qualitative Research :**

. Concerned with qualitative phenomena , i.e. phenomena relating to or involving quality or kind. It is non-numerical, descriptive ,and applies reasoning .the main aim is to get the meaning , feeling and situation. The detection of compound by Physical or chemical tests is Qualitative analysis.

Fundamental Research / basic research :

Mainly concerned with generalization and with the formulation of a theory. It is also called theoretical research and not concerned with solving problem of immediate interest. Study of some natural phenomena or research related to pure science termed as basic research.

■ **Analytical Research:**

- Researcher has to use facts on information already available and analyze these to make a critical evaluation of the material .

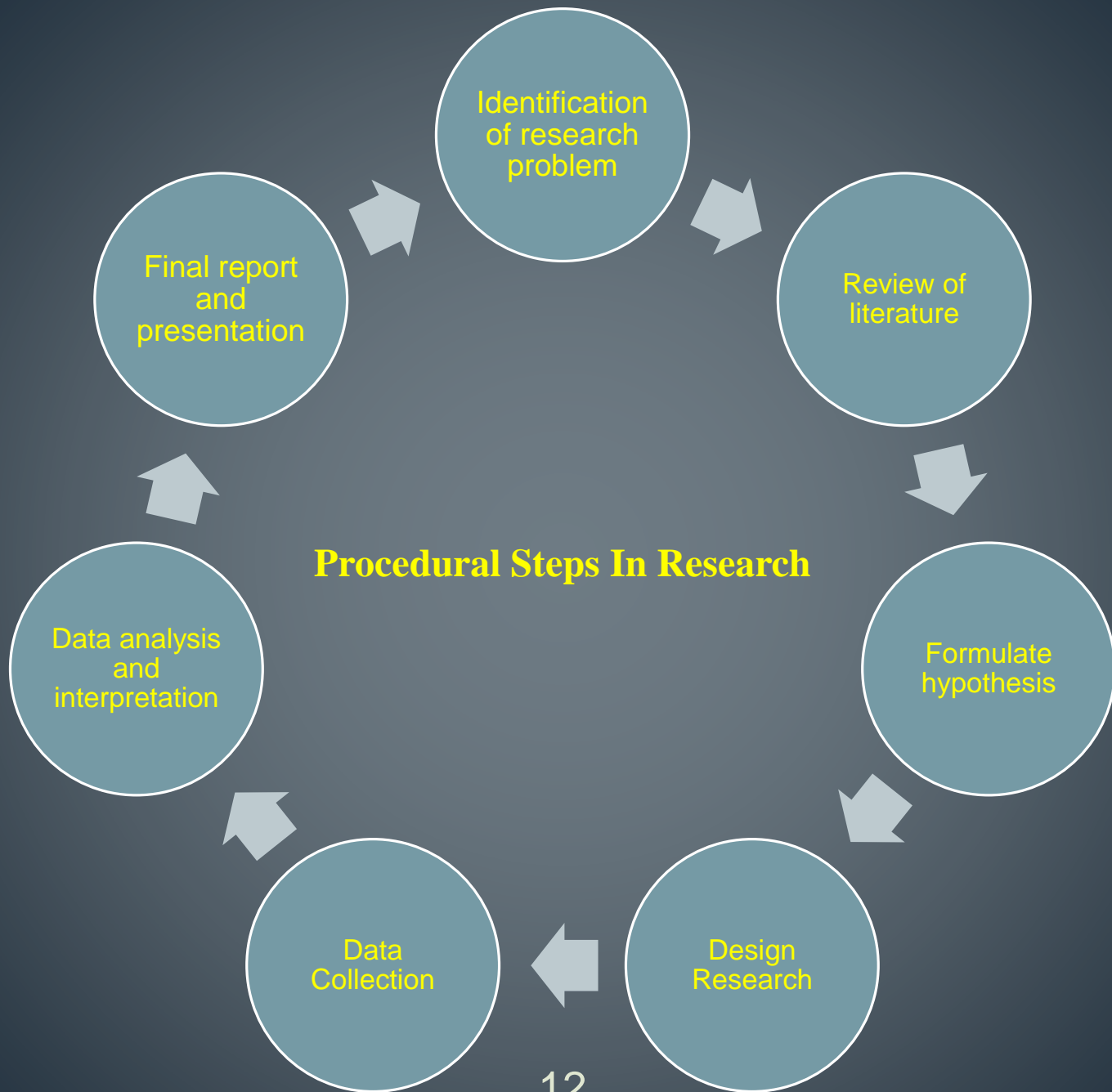
RESEARCH METHODS VS. RESEARCH METHODOLOGY

- **Research Methods :-**

. Refers to the methods / techniques researcher use in performing research operations.eg : collection of data , analysis of data . It means description , explanation , and justification of methods. It is way to solve research problem systematically and logically .

- **Research Methodology :-**

It may be understood as a science of studying how research is done scientifically. In it we study the various steps that are generally adopted by researcher in studying his research problem along with the logic behind them .



Procedural Steps In Research

- **Formulating the research problem :**

The best way to select it that discuss it with colleagues or with those having expertise in specific field. In an academic institution the researcher can take help from guide who is expert in research area.

- **Literature survey :**

It is a collection of research publication , books and other documents related to the defined problem. It bring clarity and focus to research problem, improve methodology and broaden the knowledge.

- **Formulation of hypothesis :**

hypothesis are scientifically reasonable prediction.

The expected solution based on available data and tentative explanations constitute the hypothesis. It should be very specific and its role is to guide the researcher and keep him on right track.

- **Research Design :**

It should indicate various approaches to be used in solving the research problem, sources and information related to problem, the measurement procedures, the frame of analysis, time schedule and cost budget.

- **Data collection :**

Primary data can be collected either from experiment work or survey. The data can be collected by observation, through personal/telephone interview or by mailing of questionnaire.

- **Data analysis and interpretation :**

the way of analysis of data depends on type of information i.e. Qualitative , Quantitative , Descriptive .Appropriate statistical tools are used for data analysis. The research hypothesis must be tested by Chi square test, t-test , F-test, ANOVA test etc. The process of interpretation may quite often trigger off new question which may lead to further investigation. The number of data and its units , errors bars and other details must be written in graphs .

- **Research report :**

It is an oral or written presentation of important and useful aspects. It helps to get feedback from other researcher . It is important to publish the research outcome in appropriate journal , magazine or conference. The outcome of research work will become known to the scientific community only through publication .

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