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Unit 1: Research Methodology

1. Research in Geography: Meaning, types and significance:

❖ **Meaning of Research in Geography:**

Definition. Geography is a branch of academic study broadly concerned with the Earth. Geographers can be roughly divided into those concerned with physical earth processes (physical geography), such as erosion and sedimentation, and those who are more concerned with human activities (human geography).

Geographic research is the critical objective study, investigation and explanation of specific cultural and physical phenomenon. Basic research personnel attempt to acquire data through experimentation by describing and evaluating usefulness of theory for observation of new principles and laws. In other words, they attempt to solve or bridge a particular deficiency or gap in **geographic** knowledge.

❖ **Types of scientific research in Geography**

Research is a logical and systematic search for new and useful information on a particular topic. Research is important both in scientific and nonscientific fields. In our life new problems, events, phenomena and processes occur every day. Practically, implementable solutions and suggestions are required for tackling new problems that arise. Scientists have to undertake research on them and find their causes, solutions, explanations and applications.

The research is broadly classified into two main classes: 1. Fundamental or basic research and 2. Applied research. Basic and applied researches are generally of two kinds: normal research and revolutionary research. In any particular field, normal research is performed in accordance with a set of rules, concepts and procedures called a paradigm, which is well accepted by the scientists working in that field. In addition, the basic and applied researches can be quantitative or qualitative or even both (mixed research).

1. **Fundamental or basic research:**

Basic research is an investigation on basic principles and reasons for occurrence of a particular event or process or phenomenon. It is also called theoretical research. Study or investigation of some natural phenomenon or relating to pure science are termed as basic research. Basic researches sometimes may not lead to immediate use or application. It is not concerned with solving any practical problems of immediate interest. But it is original or basic in character. It provides a systematic and deep insight into a problem and facilitates extraction of scientific and logical explanation and conclusion on it. It helps build new frontiers of knowledge. The outcomes of basic research form the basis for many applied researches.

- Seeks generalization
- Aims at basic processes
- Attempts to explain why things happen
- Tries to get all the facts
- Reports in technical language of the topic

2. **Applied research:**

In an applied research one solves certain problems employing well known and accepted theories and principles. Most of the experimental research, case studies and inter-disciplinary research are essentially applied research. Applied research is helpful for basic research. A research, the outcome of which has immediate application is also termed as applied research. Such a research is of practical use to current activity.

- Studies individual or specific cases without the objective to generalize
- Aims at any variable which makes the desired difference

- Tries to say how things can be changed
- Tries to correct the facts which are problematic
- Reports in common language

Basic and applied research, further divided into three types of research bearing some characteristics feature as follows:

Quantitative research

- It is numerical, non-descriptive, applies statistics or mathematics and uses numbers.
- It is an iterative process whereby evidence is evaluated.
- The results are often presented in tables and graphs.
- It is conclusive.
- It investigates the what, where and when of decision making.

Qualitative research

- It is non-numerical, descriptive, applies reasoning and uses words.
- Its aim is to get the meaning, feeling and describe the situation.
- Qualitative data cannot be graphed.
- It is exploratory.
- It investigates the why and how of decision making.

Mixed research

Mixed research- research that involves the mixing of quantitative and qualitative methods or paradigm characteristics. Nature of data is mixture of variables, words and images.

Other types of research

Exploratory Research: Exploratory research might involve a literature search or conducting focus group interviews. The exploration of new phenomena in this way may help the researcher's need for better understanding, may test the feasibility of a more extensive study, or determine the best methods to be used in a subsequent study. For these reasons, exploratory research is broad in focus and rarely provides definite answers to specific research issues. The objective of exploratory research is to identify key issues and key variables.

Descriptive research: The descriptive research is directed toward studying "what" and how many off this "what". Thus, it is directed toward answering questions such as, "What is this?".

Explanatory research:

- Its primary goal is to understand or to explain relationships.
- It uses correlations to study relationships between dimensions or characteristics off individuals, groups, situations, or events.
- Explanatory research explains (How the parts of a phenomenon are related to each other).
- Explanatory research asks the "Why" question.

Longitudinal Research: Research carried out longitudinally involves data collection at multiple points in time. Longitudinal studies may take the form of:

- *Trend study*- looks at population characteristics over time, e.g. organizational absenteeism rates during the course of a year
- *Cohort study*- traces a sub-population over time, e.g. absenteeism rates for the sales department;
- *Panel study*- traces the same sample over time, e.g. graduate career tracks over the period 1990 – 2000 for the same starting cohort.

While longitudinal studies will often be more time consuming and expensive than cross-sectional studies, they are more likely to identify causal relationships between variables.

Cross-sectional Research:

One-shot or cross-sectional studies are those in which data is gathered once, during a period of days, weeks or months. Many cross-sectional studies are exploratory or descriptive in purpose. They are designed to look at how things are now, without any sense of whether there is a history or trend at work.

Action research: Fact findings to improve the quality of action in the social world

Policy-Oriented Research: Reports employing this type of research focus on the question 'How can problem 'X' be solved or prevented?'

Classification research:

- It aims at categorization of units in to groups
- To demonstrate differences
- To explain relationships

Comparative research: To identify similarities and differences between units at all levels

Causal research: It aims at establishing cause and effect relationship among variable

Theory-testing research: It aims at testing validity of a unit

Theory-building research: To establish and formulate the theory

- **Significance of Research in Geography:**

Geography is the spatio-temporal science of the Earth- its natural and physical environments, human activities and social changes, the interrelationships and interactions of these and their effects, from local to global scales; and, among many skills, it uses mapping and fieldwork.

The priority areas of geographical research are:

1. To clarify the purposes and goals of geography, no matter how the geography curriculum is expressed;
2. To refine the curriculum, pedagogic and assessment practices used in geography;
3. To deepen collective understanding of learning progressions in geography;
4. To improve ways in which high quality materials and resources for geography can be developed and provided;
5. To develop understanding of learners' geographical knowledge and experience, including their misconceptions; and
6. To improve the technology base by linking innovative practices to empirical research in geography.

The outcomes of research in and relevant to geography are:

- ✓ To provide and distribute evidence and/or conceptually robust arguments and practices that will improve the quality of geographical knowledge in national settings and internationally;
- ✓ To encourage a 'research orientation' among geography teachers and learners that enables reflective and critical engagement with habitual practices and a professional habit of mind that demands improvement in the quality of geographical knowledge;
- ✓ To strengthen the scientific status of geography education and consolidate it as an area of knowledge by developing and reinforcing working networks among researchers, stakeholders and educators.

Scientific Geographical Research helps us in many ways:

- ✓ A research problem refers to a difficulty which a researcher or a scientific community or an industry or a government organization or a society experience. It may be a theoretical or a practical situation. It calls for a thorough understanding and possible solution.
- ✓ Research provides basis for many government policies. For example, research on the needs and desires of the people and on the availability of revenues to meet the needs helps a government to prepare a budget.
- ✓ It is the fountain of knowledge and provide guidelines for solving problems.
- ✓ Only through research inventions can be made; for example, new and novel phenomena and processes such as superconductivity and cloning have been discovered only through research.
- ✓ It is important in industry and business for higher gain and productivity and to improve the quality of products.
- ✓ Research leads to a new style of life and makes it delightful and glorious.
- ✓ It leads to the identification and characterization of new materials, new living things, new stars, etc.
- ✓ Mathematics and logic-based research on business and industry optimizes the problems in them.
- ✓ Social research helps find answers to social problems. They explain social phenomena and seek solution to social problems.

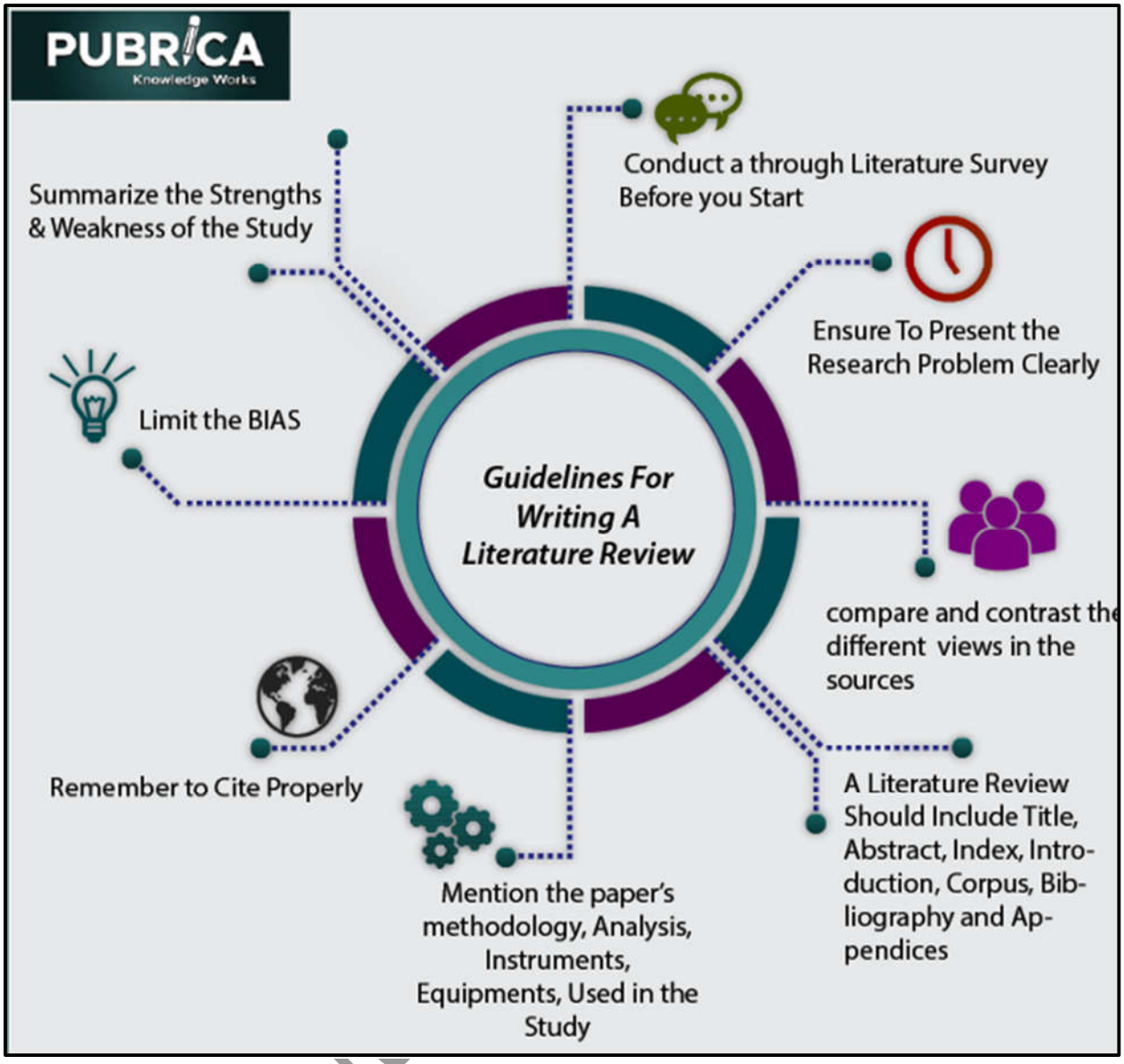
2. Significance of Literature review in research:

A literature review provides an overview of previous research on a topic that critically evaluates, classifies, and compares what has already been published on a particular topic. It allows the author to synthesize and place into context the research and scholarly literature relevant to the topic. It helps map the different approaches to a given question and reveals patterns. It forms the foundation for the author's subsequent research and justifies the significance of the new investigation.

A literature review Services for research is outlined as a survey of scientific books, bookish articles, and the other systematic scientific research sources relevant to a selected issue, space of study, or theory, to supply an outline, summary, and important analysis of a plan, faculty of thought, or concepts bearing on the analysis question in investigation. In extension, the literature review familiarizes the author to the extent of data in their field. once conferred as a section of the paper, it establishes to the readers, the author's depth of understanding and data of their subject.

A literature review can be a short introductory section of a research article or a report or policy paper that focuses on recent research. Or, in the case of dissertations, theses, and review articles, it can be an extensive review of all relevant research.

- ✓ The format is usually a bibliographic essay; sources are briefly cited within the body of the essay, with full bibliographic citations at the end.
- ✓ The introduction should define the topic and set the context for the literature review. It will include the author's perspective or point of view on the topic, how they have defined the scope of the topic (including what's not included), and how the review will be organized. It can point out overall trends, conflicts in methodology or conclusions, and gaps in the research.
- ✓ In the body of the review, the author should organize the research into major topics and subtopics. These groupings may be by subject, (e.g., globalization of clothing manufacturing), type of research (e.g., case studies), methodology (e.g., qualitative), genre, chronology, or other common characteristics. Within these groups, the author can then discuss the merits of each article and analyze and compare the importance of each article to similar ones.
- ✓ The conclusion will summarize the main findings, make clear how this review of the literature supports (or not) the research to follow, and may point the direction for further research.
- ✓ The list of references will include full citations for all of the items mentioned in the literature review.



A literature review should try to answer questions such as:

1. Who are the key researchers on this topic?
2. What has been the focus of the research efforts so far and what is the current status?
3. How have certain studies built on prior studies? Where are the connections? Are there new interpretations of the research?
4. Have there been any controversies or debate about the research? Is there consensus? Are there any contradictions?
5. Which areas have been identified as needing further research? Have any pathways been suggested?
6. How will your topic uniquely contribute to this body of knowledge?
7. Which methodologies have researchers used and which appear to be the most productive?
8. What sources of information or data were identified that might be useful to you?
9. How does your particular topic fit into the larger context of what has already been done?
10. How has the research that has already been done help frame your current investigation?

The scientifically relevant literature review in a very field consists of the previous studies within the space, established colleges of thought, bookish articles, and scientific journals among different things. The literature review services vary from field to field. In exhausting sciences, the literature is usually facts and also the review could also be merely an outline of the important sources. whereas in soft sciences, the survey provides a summary and synthesis of assorted colleges of thoughts and their interconnection. An outline or a summary is that the transient account of all informational highlight from key sources, whereas synthesis is that the restructuring or reorganization of the data in a very manner that informs of the dissertation's set up of work the analysis drawback.

The following square measure reasons however literature review adds price and legitimacy to the study:

1. Literature review permits the interpretation of recent literature within the lightweight of the latest developments within the field; this helps in establishing the consistency in information and connection of older materials.
2. The progress of data within the field is mapped and the way the dialectics of contradictions between varied thoughts inside the sphere helped establish facts is known throughout the course of reviewing the literature. This helps in hard the impact of the latest data within the field.
3. The literature is primarily scrutinized to spot gaps within the information of the sphere. This gap is more explored throughout the analysis to determine new facts or theories that add price to the sphere.
4. The conception of conducting a scientific and systematic study necessitates scrutiny of existing information, thus, facilitating the requirement for literature review
5. The literature review conjointly helps in distinguishing the present study's place within the schema of the sphere.

The literature review services conjointly validate the study by providing data on its relevance and coherency to the prevailing data and ways in the analysis. In turn, it establishes the author's experience within the field and provides legitimacy to hold forward the knowledge of the world mistreatment scientific and systematic ways. The literature review service whereas elucidating the continuance of data conjointly entails areas that need more investigation and thence, aid as a start line for future analysis.

3. **Defining research problem, objectives and hypothesis. Research materials and methods:**

4. **Techniques of writing scientific reports: Preparing notes, references, bibliography (APA Style), abstract and keywords:**

Unit 2: Field Work

1. **Fieldwork in Geographical studies – Role and significance. Selection of study area and objectives. Pre-field preparations. Ethics of fieldwork:**

2. **Field techniques and tools: Questionnaires (open, closed, structured, non-structured). Interview with special reverence to focused group discussions:**

3. **Field techniques and tools: Landscape survey using transects and quadrants, constructing a sketch, photo and video recording.:**

4. **Collection of samples. Preparation of inventory from field data. Post-field tasks:**