

Introduction to Research Methods

Introduction to Research Methods

(A concise guide for students and beginners)

1. What Is Research?

Aspect	Description
Definition	Systematic, organized inquiry aimed at discovering new knowledge or solving a problem.
Purpose	• Test theories • Explore phenomena • Inform practice and policy
Key Characteristics	• Empirical (based on observation or experiment) • Replicable • Transparent documentation

2. The Research Process – Step by Step

1. Identify a Problem / Question

- Observe a gap in knowledge or a practical issue.
- Formulate a clear, focused research question (or hypothesis).

2. Review the Literature

- Search scholarly books, journal articles, reports.
- Summarize existing findings, note contradictions, and justify your study.

3. Choose a Research Design

- **Qualitative** (e.g., interviews, ethnography) – explores meanings, experiences.
- **Quantitative** (e.g., surveys, experiments) – measures variables, tests relationships.
- **Mixed Methods** – combines both for richer insight.

4. Select Methods & Instruments

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- **Data collection:** questionnaires, observations, archival data, lab tests, etc.
- **Sampling:** probability (random, stratified) or non-probability (convenience, purposive).

5. Plan Data Analysis

- **Quantitative:** descriptive statistics, inferential tests (t-test, ANOVA, regression).
- **Qualitative:** thematic coding, content analysis, discourse analysis.

6. Collect Data

- Follow ethical protocols (informed consent, confidentiality).
- Keep detailed field notes or logs.

7. Analyze & Interpret

- Apply the chosen statistical or coding procedures.
- Relate findings back to the research question and literature.

8. Report Findings

- Structure: Introduction ? Methods ? Results ? Discussion ? Conclusion.
- Use tables, figures, and citations to enhance clarity.

9. Reflect & Disseminate

- Evaluate limitations and suggest future research.
- Share through journal articles, conferences, or public presentations.

3. Core Research Designs

Design	When to Use	Strengths	Weaknesses
Experimental	Testing causal relationships; controlled settings	High internal validity; clear cause-effect	May lack ecological validity; ethical limits
Quasi-experimental	Field studies where randomization isn't possible	More realistic contexts	Threats to internal validity
Descriptive Survey	Measuring attitudes, prevalence, demographics	Large samples; generalizable	Cannot infer causality

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Design	When to Use	Strengths	Weaknesses
Case Study	In?depth exploration of a single case or few cases	Rich, contextual detail	Limited generalizability
Ethnography	Understanding cultural practices over time	Deep insight into lived experience	Time?intensive; researcher bias risk
Longitudinal	Studying change over time	Tracks development, trends	Attrition, costly
Cross?sectional	Snapshot of a population at one point	Quick, efficient	No temporal information

4. Sampling Basics

Concept	Explanation
Population	Entire set of individuals/units of interest.
Sample	Subset drawn from the population for study.
Sampling Frame	List or method