

2.9: Introduction to Research

Credits: 4
Semester: S-6

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title	Credits	Credit Distribution of the Course			Eligibility Criteria	Pre-requisite
		Lecture	Tutorial	Practical/Practice		
Research Methodology	4	3	1	-	-	-

2.9.1 About the course

The course seeks to develop an in-depth understanding about the foundations of research, dynamics of knowing and knowledge, methodologies, and paradigms of research. The students will gain insight into the epistemological, ontological, and axiological perspectives shaping the research. The course delves into the nature of inquiry, the validation of knowledge, preparing students to engage critically with research literature and methodologies and developing the important research skills keeping in mind the ethical perspectives of research. The course is designed to provide students with a comprehensive understanding about nature, types, and processes prevalent in interdisciplinary approach to research.

2.9.2 Learning Outcomes: After the completion of the course, it is expected that the student teachers will be able to:

- critically examine the various perspectives in research;
- explain the basics of research and the research process;
- describe the methods of acquiring and validation of Knowledge in Indian Knowledge System;
- develop thinking and process skills essential to conceptualise, design, and conduct research.
- demonstrate ethical code of conduct in all phases of the research process.

Unit 1 Foundations of Research: Knowing and Knowledge (12 hours)

- Research: Meaning, Nature and Characteristics.
- Epistemological perspectives of research: Sources & Methods of acquiring and ways of validation (truth) of Knowledge, Methods of Acquiring and validation of Knowledge in Indian Knowledge System- Nyaya Epistemology, Pramana Vichar, Saptabhangi Naya
- Ontological and Axiological perspectives in research: Ethics, Human Values, Academic Integrity and Prevention of Plagiarism
- Research paradigms: logical positivism, phenomenological inquiry/ interpretivism, and critical theory.
- Research Across the Boundaries-Interdisciplinary, Multidisciplinary, and Trans-disciplinary

Unit 2: Process of Research and Research Skills (14 hours)

- A. Concepts, Construct and Variables.
- B. The Steps in the Process of Research- Identification of Research Problem, Statement of the Problem, Rationale and needs, Review of related literature, Research Questions, Research objectives, Hypotheses, Operationalization of variables, Population, Sampling Techniques, Data collection- Data Gathering Techniques and Tools: Qualitative and Quantitative; Data Analysis and Interpretation; Delimitations & Limitations
- C. Research Skills (Through Tutorial Classes): Ways and means of finding authentic research literature; Reading research papers; Writing annotation, Preparing Research Proposal (Synopsis), Writing citations/references/bibliography in different formats; review of related literature; Data Analysis and Report Writing; Using ICT in research process (Review of literature, Data Collection, Classification, Tabulation, Diagrammatic Representation and Analysis, and Finding the level of Plagiarism).

Unit 3: Approaches to Research (20 hours)

- A. Qualitative Research:
 - i. Historical Research, Case Study Research, Action Research, Ethnography, Ethnomethodology, Phenomenology, Narrative Analysis, Grounded Theory,
 - ii. Critical Theory Research: Process, Concept, Advantages and Limitations.
- B. Quantitative Research:
 - i. Non-experimental Research: Descriptive, Ex-post facto/Causal-comparative and Correlational
 - ii. Experimental Research: The Experiment, Experimental Research Settings-Field Experiment and Laboratory Experiment, Control of Confounding Variables, Experimental Research Designs
 - iii. Quasi-Experimental and Single-Case Designs Research,
 - iv. Validity of Research Results: Internal Validity and External Validity.
- C. Mixed Methods Research: Components, Nature and Types

Unit 4: Data Analysis and Interpretation (14 hours)

- A. Qualitative Data Analysis and Interpretation: Interim Analysis, Memoing, Analysis of Visual Data, Data Entry and Storage, Segmenting, Coding and Developing Category System, Enumeration, Creating Hierarchical Category Systems, Identifying Relationships Among Categories, Corroborating and Validating Results, Computer Programs for Qualitative Data Analysis.
- B. Quantitative Data Analysis and Interpretation: Scales of Measurement; Descriptive Statistics-Measures of Central Tendency, Variability and Correlation; Process and Steps of Hypothesis testing; Inferential Statistics: Parametric and Non-Parametric; Computer Programs for Quantitative Data Analysis.
- C. Data Analysis in Mixed Research: Mixed Analysis Matrix, analytical Procedures in Mixed Data Analysis; Triangulation: Concept, Use and Advantages.

2.9.3 Suggestive Practicum

Following are the suggestive practical and activities. The teachers may design more tasks based on classroom interactions and discussions.

1. Review a research paper and write a report regarding its ontological and epistemological perspectives.
2. Write the annotated bibliography of two books of Research Methodology.
3. Write the references of 30 research papers, articles, published dissertation and books in

different formats (APA, MLA, and Chicago).

4. Make a list of Application Software which are used for data analysis and interpretation in research and write a report mentioning their salient features.
5. Review a few research papers and classify them into quantitative, qualitative and mixed research and write a report regarding their salient features.
6. Conduct an open-ended interview for your classmate and analyse the data using a computer application.

2.9.4 Mode of Transaction:

The course content transaction will include the following:

- Planned lectures infused with multimedia resources/PowerPoint presentations.
- Workshops on Academic Writing; Referencing & In-Text Citation; Plagiarism; Ethics in Research; Employing Technology in Research; and other such themes.
- Small group discussion, panel interactions, small theme-based seminars, group discussions, cooperative teaching and team teaching, selections from theoretical readings, case studies, analyses of educational statistics, and personal field engagement with educationally marginalized communities and groups, through focus group discussion, surveys, short term project work, etc.

2.9.5 Mode of Assessment:

The examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi from time to time.

2.9.6 Suggested Readings:

Anderson, G. & Arsenault, N. (2001). *Fundamentals of Educational Research* (2nd ed.). Routledge.

Berg, B.L., & Lune, H. (2017). *Qualitative Research Methods for the Social Sciences* (9th ed.). Pearson Education.

Best, J. W. & Kahn, J. V. (2014). *Research in Education* (10th ed.). Pearson Education.

Bogdan, R. C., & Biklen, S. K. (2007). *Qualitative research for education: An Introduction to Theory and Methods* (5th ed.). Pearson Education.

Broota, K.D. (1989). *Experimental Design in Behavioural Research*. New Age International.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research Methods in Education* (6th ed.). Routledge.

Creswell, J. W. (2017). *Qualitative Inquiry and Research Design: Choosing among the Five Traditions* (4th ed.). Sage Publication.

Garrett, H. E. (2020). *Statistics for psychology and education* (5th ed.). Surjeet Publications.

Gaur, A.S., & Gaur, S. S. (2009). *Statistical Methods for Practice and Research: A Guide to Data Analysis Using SPSS* (2ND ed.). Sage Publication.

Gupta, S. (2010). *Research Methodology and Statistical Techniques*. Deep & Deep

Publications.

- Johnson, R.B., & Christensen, L. (2012). *Educational Research: Quantitative, Qualitative and Mixed Approaches* (5th ed.). Sage Publication.
- Khan, M.S. (2008). *Educational Research*. A P H Publishing Corporation.
- Kumar, S. (2019). *Action Research and Grounded Research: Evidence-Based Practices in Education*. Kanishka Publication.
- Kumar, S. (2023). *Strengthening Qualitative Research in Education*. Muktibodh Trust Publication.
- Kumari, M. (2020). *Bhartiya Gyan Mimansa*. Motilal Banarasi Das.
- Leavy, P. (2017). *Research Design: Quantitative, Qualitative, Mixed Methods, Arts-Based, and Community-Based Participatory Research Approaches*. The Guilford Press.
- Patton, M.Q. (2015). *Qualitative Research & Evaluation Methods* (4th ed.). Sage Publication.
- Silverman, D. (2017). *Doing Qualitative Research* (5th ed.). Sage Publication.
- Singh, A. K. (1986). *Tests, Measurement, and Research Methods in Behavioural Science*. Tata McGraw-Hill Publishing.
- Willis, J.W. (2007). *Foundations of Qualitative Research: Interpretive and Critical Approaches*. Sage Publication Inc. DOI:[10.1016/j.soscij.2007.07.007](https://doi.org/10.1016/j.soscij.2007.07.007)