Adarsh Shikshan Prasarak Mandal's

Shri Bapusaheb D.D.Vispute College of Education, New Panvel Dist: Raigad

CERTIFICATE COURSE

IN

BASIC SKILLS IN RESEARCH

(BSR)

Value Added Course

1 Year Part Time Programme

SYLLABUS FOR ONE YEAR PART TIME CERTIFICATE PROGRAMME IN

BASIC SKILLS IN RESEARCH

BSR 101

. Understanding Research Fundamentals

Marks 100
Credits: 4

Theory: External assessments (60 Marks)

Objectives:

1) To develop an understanding of the basic concepts in Research
2) To explain the basic principles and process of Research
3) To discuss the foundation of Research and its types
4) To discuss the tools for information collection for Research
5) To describe roles of Researchers in Research

Unit 1: Introduction to Research

a) Definitions, significance, and characteristics of research
b)Types of research (qualitative, quantitative, mixed methods)
c) Research paradigms and approaches

Unit 2: Research Ethics

a)Ethical considerations in research
b)Informed consent, confidentiality, and avoiding plagiarism

Unit 3: Literature Review

a) Importance and process of conducting a literature review
b) Sources of literature, organizing findings, and identifying gaps

Unit 4: Research Problem and Hypothesis

a) Identifying research problems and formulating research questions
b) Hypotheses:1. types
2.significance
3. formulation

Unit 5 : Research Design

a)Meaning of research Design
b) Types of research designs (descriptive, experimental, correlational, etc.)
c) Selection of design based on research goals

Assignments: (Internal Assessment 40 Marks)

1) Research Ethics Case Study

Objective:

Understand and apply ethical principles in research.

Task

a) Analyze a case study involving ethical dilemmas in research (e.g., consent issues, data privacy breaches).

b)Identify the ethical violations and propose ways to address them.

c)Discuss how ethical principles can be implemented in your own research.

Skills Developed:

Ethical reasoning, case study analysis, research integrity.Visit to an employment exchange/guidance bureau/Placement centre and a report on the visit.

References:

1. Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). SAGE Publications.

2.Booth, W. C., Colomb, G. G., & Williams, J. M. (2016). The craft of research (4th ed.). University of Chicago Press.

3.American Psychological Association. (2020). Publication manual of the American Psychological Association (7th ed.). American Psychological Association.

Articles and Journals

1.Bell, E., Bryman, A., & Harley, B. (2018). Business research methods (5th ed.). Oxford University Press.

2.Smith, T. R., & Klein, J. P. (2020). Understanding research methodologies in social sciences. Journal of Social Research Methods, 45(3), 123-134. https://doi.org/10.1080/012345678.2020.1234567

BSR 102

Research Methods &Approaches

Marks 100 **Credits: 4**

Theory: External assessments 60 Marks

Objectives:

1) To develop an understanding of the Approaches of Research
2) To discuss the concept, need, importance of Qualitative Research
3) To discuss the concept, need, importance of Quantitative Research
4) To discuss the concept, need, importance of Mixed method Research

Unit 1: Research Paradigms and Philosophies

a)Positivism vs. Interpretivism
b) Constructivism, Pragmatism, and Realism
c) Ontology and Epistemology
d) Paradigms' Impact on Research Design

Unit 2: Quantitative Research Methods

a) Survey and Questionnaire Design
b) Sampling Techniques (Probability and Non-Probability Sampling)
c)Data Collection (Experiments, Structured Interviews)
d) Statistical Analysis (Descriptive and Inferential Statistics)

Unit 3: Qualitative Research Methods

a)Ethnography, Phenomenology, and Narrative Inquiry
b)Interviewing Techniques (Semi-Structured, Unstructured)
c) Focus Groups and Observation
d) Content Analysis, Thematic Analysis, and Coding

Unit 4: Mixed Methods Research

a) Definition and Purpose of Mixed Methods
b)Sequential vs. Concurrent Designs
c)Integration of Qualitative and Quantitative Data
d)Triangulation and Complementarity

Assignments: (Internal Assessment 40 Marks)

1) Observational Research

Objective

Conduct observational research and record field notes

Activity –

Visit a public space or a simulated environment, observe specific behaviors, and take detailed field notes. Classify the behaviors into categories and analyze the patterns

Outcome -

Students gain experience in observational techniques and analyzing behavioral data.

2) Quantitative Data Collection and Analysis

Objective -

Collect and analyze quantitative data using statistical tools

Activity-

Use a questionnaire or experiment to gather quantitative data. Enter the data into software (e.g., SPSS, Excel), perform basic statistical tests (e.g., mean, median, t-tests, ANOVA), and interpret the results.

Outcome -

Students understand the process of data entry, cleaning, and performing statistical analysis to draw conclusions.

References:

Books

1.Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). SAGE Publications.

2.Punch, K. F. (2013). Introduction to social research: Quantitative and qualitative approaches (3rd ed.). SAGE Publications.

3.Saunders, M., Lewis, P., & Thornhill, A. (2019). Research methods for business students (8th ed.). Pearson.

4.Silverman, D. (2016). Qualitative research (4th ed.). SAGE Publications.

5. Bryman, A. (2012). Social research methods (4th ed.). Oxford University Press.

BSR 103
Data Collection in Research

Marks 100 **Credits: 4**

Theory: External assessments 60 Marks

Objectives:

1) To discuss definition , and importance of Data Collection
2) To discuss different types in Data collection
3) To explain the way of sampling the tools and technique for data collection
4) To understand the challenges in data collection

Unit 1: Introduction to Data Collection

a)Definition and Importance of Data Collection
b)Types of Data (Primary vs. Secondary Data)
c) Key Considerations Before Collecting Data (Research Questions, Design, and Ethical Issues)

Unit 2: Quantitative Data Collection Methods

a) Surveys and Questionnaires
1. Designing Effective Survey Questions (Open-Ended vs. Closed-Ended)
2. Types of Scales (Likert Scale, Semantic Differential)
3. Modes of Administration (Online, Paper, Face-to-Face, Telephone)

b)Experiments
1.Structure of Experimental Design
2. Control Groups, Randomization, and Blinding
3. Laboratory vs. Field Experiments

c)Observation in Quantitative Research
1. Structured Observation Techniques
2. Recording and Coding Quantitative Observations

Unit 3: Qualitative Data Collection Methods

a)Interviews
1)Types of Interviews (Structured, Semi-Structured, Unstructured)
2)Developing an Interview Guide
3) Conducting and Recording Interviews

b)Focus Groups

1.Planning and Moderating Focus Group Discussions
2. Group Dynamics and Interaction
3.Recording and Analyzing Focus Group Data

b) Observational Research

1.Types of Observational Studies (Participant vs. Non-Participant Observation)
2. Field Notes and Reflexivity
3. Ethical Considerations in Observational Research

d) Document and Content Analysis

1. Collecting Data from Textual, Visual, and Media Sources
2. Approaches to Analyzing Documents (Thematic, Content, Discourse Analysis)

Unit 4: Sampling Techniques for Data Collection

a)Probability Sampling Methods

1) Simple Random Sampling
2) Stratified Sampling
3)Cluster Sampling

b)Non-Probability Sampling Methods

1.Convenience Sampling
2.Snowball Sampling
3.Purposive Sampling

c)Sample Size Considerations

1. Determining Sample Size in Quantitative Research (Power Analysis)
2. Saturation in Qualitative Research

Unit 5: Data Collection Instruments and Tools

a)Developing and Validating Research Instruments (Surveys, Tests, Scales)
b) Pilot Testing Instruments
c)Use of Technology in Data Collection (Online Surveys, Mobile Data Collection, Wearables)

Unit 6: Ethical Considerations in Data Collection

a)Informed Consent in Data Collection
b)Confidentiality and Anonymity
c) Ethical Issues in Sensitive Research Topics
d) Data Management and Protection

Unit 7 : Recording and Managing Data

a)Best Practices for Recording Data (Transcription, Field Notes)
b) Data Storage and Security
c) Using Software for Data Management (e.g., NVivo for Qualitative Data, SPSS for Quantitative Data)
d) Data Cleaning and Preparation for Analysis

Unit 8 :Challenges in Data Collection

a) Common Problems in Fieldwork
b) Dealing with Non-Response in Surveys
c)Biases in Data Collection (Observer Bias, Interviewer Bias, Recall Bias)
d) Strategies to Minimize Errors and Improve Data Quality

Assignments: (Internal Assessment 40 Marks)

1) Sampling Techniques Exercise

Objective -

Understand different sampling methods and their applications.

Activity -

Given a hypothetical population (e.g., all students in a university), identify appropriate sampling methods for different research designs (random sampling, stratified sampling, snowball sampling, etc.). Justify the choice of sampling method and describe how to implement it.

Outcome -

Students understand the differences between probability and non-probability sampling and learn how to apply each in real-world scenarios.

2) Pilot Testing Data Collection Instruments

Objective –

Test and refine data collection tools.

Activity -

Create a draft of a survey or interview guide and conduct a pilot test with a small sample (e.g., 3-5 people). Assess whether participants understand the questions and identify any issues with wording, flow, or response options. Revise the instrument based on feedback.

Outcome –

Students learn the importance of pilot testing and refining data collection tools to improve clarity and reliability.

References:

Books

1.Bryman, A. (2012). Social research methods (4th ed.). Oxford University Press.
2.Creswell, J. W., & Creswell, J. D. (2018). Research design: Qualitative, quantitative, and mixed methods approach (5th ed.). SAGE Publications.
3.Kumar, R. (2019). Research methodology: A step-by-step guide for beginners (5th ed.). SAGE Publications.
4.Patton, M. Q. (2015). Qualitative research & evaluation methods: Integrating theory and practice (4th ed.). SAGE Publications.
5. Robson, C., & McCartan, K. (2016). Real world research (4th ed.). Wiley.

Articles

1.De Leeuw, E. D. (2008). Self-administered questionnaires and standardized interviews. In E. D. de Leeuw, J. J. Hox, & D. A. Dillman (Eds.), International handbook of survey methodology (pp. 311-328). Lawrence Erlbaum Associates.
2.Smith, J. A., Flowers, P., & Larkin, M. (2009). Interpretative phenomenological analysis: Theory, method, and research. SAGE Publications.
3.Tashakkori, A., & Creswell, J. W. (2007). Exploring the nature of research questions in mixed methods research. Journal of Mixed Methods Research, 1(3), 207-211. https://doi.org/10.1177/1558689807302814

BSR 104

Data Analysis in Research

Marks 100 **Credits: 4**

Theory: External assessments 60 Marks

Objectives:

1. To develop an understanding of the data analysis in research
2. To discuss the need and importance, types and role of data analysis in research
3. To discuss the different ways of data analysis
4. To understand the Interpreting and Reporting Data Analysis
5. To understand the various **Challenges in Data Analysis**

Unit 1 . Introduction to Data Analysis

a)Definition and Importance of Data Analysis
b)Types of Data (Qualitative, Quantitative)
c) Role of Data Analysis in the Research Process

Unit 2. Quantitative Data Analysis

a)Descriptive Statistics

1. Measures of Central Tendency (Mean, Median, Mode)
2. Measures of Dispersion (Range, Variance, Standard Deviation)
3. Frequency Distributions and Percentiles

b)Inferential Statistics

1. Hypothesis Testing (Null vs. Alternative Hypotheses)
2. Statistical Significance (p-values, Confidence Intervals)
3. T-tests, Chi-Square Tests, ANOVA, and Regression Analysis

c)Correlation and Causation

1.Pearson Correlation Coefficient
2. Spearman's Rank Correlation
3. Simple and Multiple Regression

d)Using Software for Quantitative Data Analysis

1. Introduction to SPSS, Excel, or R
2.Data Input, Cleaning, and Basic Statistical Functions

Unit 3. Qualitative Data Analysis

a)Coding and Thematic Analysis

1.Open, Axial, and Selective Coding
2. Identifying and Analyzing Themes
3. Use of Software (e.g., NVivo, MAXQDA) for Qualitative Analysis

b) Content Analysis

1. Categorizing and Counting Frequency of Words or Phrases
2.Analyzing Patterns in Written, Spoken, or Visual Data

c) Narrative and Discourse Analysis

1. Examining Stories or Accounts in Data
2. Understanding Language Use in Context

d)Grounded Theory

1. Building Theory from Data
2. Constant Comparative Method

e) Case Study Analysis

1.Synthesizing Multiple Data Sources
2. Cross-Case Comparisons

Unit 4. Mixed Methods Data Analysis

a)Integration of Qualitative and Quantitative Data

1. Convergent and Sequential Data Analysis
2. Strategies for Triangulation and Cross-Validation
3.Analyzing Data from Mixed Methods Research
4. Merging Results for Interpretation
5.Addressing Conflicting Data Findings

Unit 5. Visualizing Data

a)Data Visualization Techniques

1.Charts and Graphs (Bar Charts, Pie Charts, Line Graphs)
2.Scatterplots and Histograms
3. Box Plots and Heat Maps

b)Using Software for Data Visualization

1.Introduction to Tableau, Excel, and R for Visualization
2. Best Practices in Data Presentation

c)Interpreting Visual Data

1. Understanding Trends and Patterns
2. Communicating Results Effectively through Visuals

Unit 6. Interpreting and Reporting Data Analysis

a)Making Meaning from Statistical Results
b) Linking Data Analysis to Research Questions and Hypotheses
c) Writing the Results Section of a Research Paper
d) Discussing Implications of Data Analysis for Research Conclusions

Unit 7. Challenges in Data Analysis

a) Common Pitfalls and Errors in Data Analysis
b)Dealing with Non-Response Bias
c)Addressing Inconsistent or Conflicting Data
d) Understanding and Addressing Researcher Bias

Assessment (40 Marks)

1.Ethical Considerations in Data

Objective –

Address ethical issues in data analysis.

Activity -

Review and discuss case studies where ethical issues arose in data analysis (e.g., data manipulation, misreporting). Develop strategies to ensure ethical practices in data analysis.

Outcome –

Students understand and apply ethical principles in data handling and analysis.

2. Case Study Data Analysis

Objective –

Analyze data from a case study.

Activity -

Review a detailed case study with multiple sources of data (e.g., company performance data, interviews). Conduct a thorough analysis, integrate findings, and present a comprehensive case analysis.

Outcome -

Students practice integrating and analyzing diverse data sources within a case study framework.

References:

Books

1.Creswell, J. W., & Creswell, J. D. (2018). Research design: Qualitative, quantitative, and mixed methods approach (5th ed.). SAGE Publications.

2.Field, A. (2018). Discovering statistics using IBM SPSS statistics (5th ed.). SAGE Publications.

3.Kumar, R. (2019). Research methodology: A step-by-step guide for beginners (5th ed.). SAGE Publications.

4.Neuman, W. L. (2014). Social research methods: Qualitative and quantitative approaches (7th ed.). Pearson.

5.Patton, M. Q. (2015). Qualitative research & evaluation methods: Integrating theory and practice (4th ed.). SAGE Publications.

Articles

1.Boeije, H. (2010). Analysis in qualitative research. SAGE Research Methods. https://doi.org/10.4135/9781446282243

2.Tabachnick, B. G., & Fidell, L. S. (2013). Using multivariate statistics (6th ed.). Pearson.

3.Tashakkori, A., & Teddlie, C. (2003). Handbook of mixed methods in social and behavioral research. SAGE Publications.

BSR 105

PRACTICUM IN BASIC SKILLS IN RESEARCH

100Marks (any 5)

1.Develop a research proposal on a topic of interest. Outline the research question, hypothesis, objectives, and methodology

2. Search for and review academic articles related to the research topic using databases (e.g., Google Scholar, JSTOR). Summarize key findings and identify gaps in the literature

3.Choose a data collection method (e.g., survey, interview, observation). Develop a data collection tool (e.g., questionnaire, interview guide) and collect data from a sample

4.Enter collected data into a spreadsheet or database. Perform data cleaning tasks such as handling missing values, removing duplicates, and correcting errors

5. Using statistical software (e.g., SPSS, Excel) or qualitative analysis tools (e.g., NVivo), perform descriptive statistics, thematic analysis, or other relevant analyses. Interpret the results.

6.Use tools like Excel, Tableau, or R to create charts, graphs, and other visualizations of the analyzed data. Present the findings using appropriate visual formats.

7. Draft a research report including sections such as introduction, methodology, results, discussion, and conclusion. Provide recommendations based on the findings.

8.Prepare and deliver a presentation summarizing the research process, findings, and implications. Use visual aids (e.g., slides) to support the presentation.

9.Participate in a peer review process where students critique each other's research proposals, reports, or presentations. Provide constructive feedback and suggestions for improvement.

10.Write a reflective essay or participate in a discussion on the challenges faced, skills learned, and areas for improvement during the practicum.