MAED I Year, M.A. in Education
PAPER III: RESEARCH METHODS AND STATISTICS IN EDUCATION(Paper code-MAED-103)

COURSE OBJECTIVES

1. To enable the students to understand the meaning, significance, types and purposes of educational research.
2. To enable the students to compute the values of various descriptive and inferential statistics.
3. To familiarize the students with the characteristics and uses of Normal Probability Curve.
4. To enable the students to prepare the research report.
5. To acquaint the learners with various types of tools and scales.

BLOCK 1

Educational Research- Types and Methods

Unit 1- Research and Scientific Inquiry: Meaning, need and importance

Unit 2- Educational Research: Meaning, scope, significance and purpose.

Unit 3- Types of research-Fundamental, applied and action research. Quantitative research and Qualitative research.

Unit 4- Methods of Educational Research: Experimental, Normative Survey, Historical, Case Study, Documentary Analysis and Ethnography.

BLOCK 2

Educational Research Problems

Unit 5- Areas of Educational research-research priorities in the field of Education

Unit 6- Selection of the problem, sources of the problem, Objectives of the Research work- concomitant, major, subsidiary; Hypothesis-definition, types.

Unit 7- Preparing the Research proposal (Synopsis)

Unit8-Review of the Related Literature, Purpose of the Review;

Identification of the Related Literature; Organizing the Related Literature

BLOCK 3

Sampling and Data Collection

Unit 9-Sampling- sample and population, Characteristics of a good sample. Techniques of sampling -

(a) Probability sampling techniques

(b) Non- Probability techniques

Unit 10- Data -types of data, Quantitative and Qualitative data, Scales of Measurement- Nominal, Ordinal, Interval and Ratio scales.

Unit11- Tools and techniques of data collection for Quantitative and Qualitative research.

Unit 12- General principles of construction of tools- and their standardization process, characteristics of research tools- Reliability , Validity and objectivity of scores and related issues.

BLOCK 4

Statistical Analysis of Data

Unit 13 - Descriptive Statistics- Measures of Central Tendency, Measures of Variability (Range, Average Deviation, Quartile Deviation, Standard Deviation), Quartiles, Percentiles, Standard errors of various relevant statistics.

Unit14- Measures of Correlation- Meaning, types, interpretation, computation techniques- Spearman's Rank Order, Pearson's Product Moment coefficient of correlation, Biserial, Point-biserial, Tetrachoric, Phi and contingency coefficients of correlation.

Unit 15- Understanding the nature of the distribution of scores. Normal Distribution and Binomial Distribution, Normal Probability Curve (NPC) - its characteristics and uses. Computation of the values of Skewness and Kurtosis and their uses.

Unit 16-Inferential statistics (Parametric statistics) - Critical Ratio, testing the null hypothesis, test of significance, types of error:-one tailed and two tailed tests and t- test; Z- test, the F-test (ANOVA)

Unit 17- Inferential statistics (Non-parametric Statistics): - Chi-square, Mann Whitney U, Sign Test and Median Test

BLOCK 5

Preparing and Evaluating Research Report- Various steps

Unit 18 - Need and significance of the study, Title of the study, Definitions of the terms, Objectives of the study- concomitant objectives, major objectives, subsidiary objectives, Hypotheses of the study, Delimitations of the study

Unit 19- Survey of the related literature, Research design- population, sample, sampling technique and description of the sample, tests and tools used, data collection procedure and statistics employed

Unit 20- Analysis of the data and results, Conclusions and their socio-educational implications and suggestions for future studies, Bibliography and appendices

Suggested Readings:-
1. Research in Education: Best and Kahn
2. Methodology of Educational Research: Lokesh Kaul
3. Fundamentals of Educational Research: R.A. Sharma
4. Research Methodology in Behavioural Sciences: F.Kerlinger
5. शैक्षिक अनुसन्धान: Paras Nath Rai and Mehrotra
6. शैक्षिक अनुसन्धान के मूल तत्व: Sukhiya and Mehrotra
7. मनोविज्ञान समाजशास्त्र एवं शिक्षा मे शोध विधियाँ: A.K. SIngh
8. सांख्यिकी एवं मापन : Dr. D.N. Srivastava
9. Statistics in Psychology and Education: Garrett and Woodsworth
10. Fundamental Statistics in Psychology and Education: Guilford