

Syllabus : Semester - III

MEH504 : Methodology of Research in Education - II

Objectives: After completing this course the students will be able to

- understand the characteristics, sources of invalidation of experiments, different designs of Experimental Research.
- understand the different types of Descriptive Research Methods.
- understand the structure and nature of a qualitative Research.
- understand Case study and Grounded Theory methods of Qualitative Research
- understand the Characteristics and applications of Normal probability curve.
- compute Rank ordered Co-efficient of correlation and Product moment Co-efficient of correlation for ungrouped data.
- elucidates the meaning of Regression Analysis and its application in predictive studies.
- explain the concepts of statistical terms – Parameter, statistic, sampling distribution, sampling error, standard error and Statistical inference.
- understand statistical techniques to test the significance of difference between two means, interpret the results and draw generalizations.
- compute 't', chi square, 'F' ratio for the given data.
- understand the Procedure of qualitative data analysis.
- write research report in the form of thesis, dissertation, synopsis and executive summary.

Unit 1 : Methods of Educational Research

- 1.1 Experimental Method –characteristics, Variables in Experimental Research & Controlling of Confounding Variables ; steps in conducting experimental research ; Sources of invalidation of experiments – concept of external validity and internal validity, threats to internal validity and external validity; Experimental Designs – ; True Experimental Design – Pre-test, Post-test control group design, Post-test only control-group design, Solomon Four – group design ;Factorial Design (with two factors).
- 1.2 Non Experimental Research Methods: Historical Research : Purpose, types , steps, sources of data, External and Internal Criticism, Evaluation of Historical Research; Descriptive Research : Nature ; Survey Research – Key characteristics and use, types of survey designs : Cross sectional and longitudinal, steps, criteria for evaluating survey research, Ethical issues in survey research; Correlational Research : key characteristics and Uses , steps, criteria for evaluating a correlation study, ethical issues in correlation research; Causal Comparative studies – Characteristics.
- 1.3 Qualitative Research –Steps in the qualitative research process, Methods of Qualitative Research – Grounded Theory, Case Study – Characteristics and steps

Unit 2: Descriptive Statistics

- 2.1 Normal Probability Curve : Properties and applications – determining percentage of cases, determination of limits, overlapping, relative difficulty and separation of a given group into sub groups ; Deviation from Normality ; Skewness & Kurtosis.
- 2.2 Measures of Relationship : Linear, Product Moment, Biserial, Point Biserial, Partial and Multiple correlation – Concept and application ; Computation of Rank ordered Co-efficient of correlation and Product moment Co-efficient of correlation for ungrouped data.
- 2.3 Regression: Linear Regression – Concept, standard score form and raw score form of simple regression equations (two variables) and applications in Predictive studies

Unit 3 : Inferential Analysis of Quantitative Data

- 3.1 Concept of statistical terms – Parameter, statistic, sampling distribution, sampling error, standard error, Statistical inference – Meaning, Estimation, one tail and two tail tests
- 3.2 Procedure of testing the hypothesis ; Levels of significance, confidence limits – concept, computation (large and small sample), degrees of freedom, types of error: type I and type II, Tests of significance – Concept; Parametric Test –Meaning, Assumptions, Uses and Computation of “t” test -Testing the significance of Means for large and small Independent & correlated samples;
- 3.3 Analysis of Variance (ANOVA) - Assumptions, Uses and Computation of one way ANOVA ; Post Hoc test – Scheffes test, Fischer’s Protected “t” – Concept and uses

Unit 4: Non Parametric Test, Qualitative Data Analysis and Report Writing

- 4.1 Non-Parametric test -; Chi Square, Mann Whitney and Sign test – Meaning, Assumptions and uses; Computation of Chi-square using Contingency Co-efficient.
- 4.2 Analysis of qualitative data- Organizing and presenting qualitative data - Meaning, Content Analysis, coding and developing category system, Analysis of Visual data.
- 4.3 Research Report –General Principles and format of a Research report; Preparation of Abstract, executive summary and Synopsis; Reference & Bibliography (APA Style); Evaluating a research report – need and criteria for evaluation.

Practicum :

- Critically review one research study each for different descriptive methods.
- Critically review two qualitative research studies.
- Critical study the data analysis in any two M.Ed. dissertations.
- Make a study of the experimental designs employed in any 2 M.Ed. dissertations and 2 studies published on line.
- Critically evaluate one M.Ed. dissertation based on the given criteria.

(Any other relevant or suitable topics related to the syllabus)

References :

- Agarwal, P. *Statistical Methods, Concepts, Applications and Computations*, Sterling Publications, New Delhi, 1988.
- Best J.W., Kahn J.V., *Research in Education* (7th Ed.), Prentice Hall of India Pvt., Ltd., New Delhi, 2000.
- Cohen L., Manion L., *Research Methods in Education*, Great Britain, 1989.
- Downie, N.M. and Health R.W. – *Basic statistical methods*, Harper and Row, New York, 1959.
- Edwards A., *Techniques of Attitude Scale Construction*, Vakils feffer and Simsons, Bombay, 1969.
- Edward W. Minimum and Robert B. Clarke, *Elements of Statistical Reasoning*, John Weley and Sons, New York, 1982.
- Gay L.R., *Educational Research*, MacMillan Publishing Company, New York, 1992.
- Guilford J.P. and Benjamin Fruchter, *Fundamentals of Statistics in Psychology and Education* New York, McGreed Hall, 1971.
- Gupta Santhosh – *Research Methodology and statistical techniques*, Deep and Deep Publications, New Delhi.
- Grewal, P.S. *Methods of Statistical Analysis*, Sterling Publications, New Delhi, 1990.
- George A., Ferguson, *Statistical Analysis in Psychology and Evaluation*, Mc Grawhill Publication, New Delhi, 1989.
- Garret Henry E. and Woodsworth R.S., *Statistics in Psychology and Education*, David Mckay Company, Inc and Longman Group Ltd. 1966.
- Kothari C.R., *Research Methodology Methods and Techniques* second revised edition.
- Maser and Kalton, *Survey methods in Social Investigation*, Heinemann Educational Books Ltd., London, 1980.
- Michael S. Lewis (Editor), *Basic Statistics – International Handbooks of Quantitative Applications in the Social Sciences*, Sage Publications, Toppan Publishing 1980.
- Popham, James, W. *Educational Statistics : Use and Interpretation* New York, Harper and Row Publications, 1967.
- Pannersevlam R., *Research Methodology*, Prentice Hall of India Private Ltd., New Delhi, 2008.
- Poonia Virendra S. and Poonia Meenakshi, *Research Methodology and Statistical Method*, Vishvabharathi Publications, New Delhi, 2009.
- Somekh Bridget and Lewin Cathy, *Research Methods in the Social Sciences*, Vistaar Publications, New Delhi, 2008.
- Tuckman T.W., *Conducting Educational Research*, Harcourt Brace Jovanovich Inc., 1972.
- Turney, L. Billy and P. Robb George, *Research in Education: An introduction*, Hindle, Illinois, Dryden Press Inc., 1971.