

Ph.D. PRELIMINARY QUALIFYING EXAMINATION (Education)
Syllabus for Paper I Research Methodology

Objectives

1. To know the fundamental principles and functions of Educational Research.
2. To acquaint the students with the Quantitative research designs and methods.
3. To familiarize the students with the Qualitative research designs and methods.
4. To equip the students to prepare and to evaluate research proposals and research reports.

Course Outline

Section A – Educational Research

Sub unit I Fundamental Principles of Educational Research

Introduction to the field of Educational Research – Research as Scientific and Disciplined Inquiry – Positivism – Functions of Research.

Sub unit II Quantitative Research Designs and Methods

Problem formulation in Quantitative Research – Selection of Research Designs for Quantitative Research:- Descriptive Research, Expost-Facto, Causal-Comparative Research, Correlational Research, Experimental Research, Pre-experimental, True-experimental and Quasi-experimental Designs. (One Group Pre-test – Post-test Design, the Pre-test – Post-test Equivalent Groups Design, the Solomon Four Group Design, the Pre-test – Post-test Nonequivalent Group Design).

Sub unit III Qualitative Research Designs and Methods

Problem formulation in Qualitative Research - Qualitative Research Designs:- Historical Research, Phenomenology, Ethnography, Grounded Theory, Case study – Ethnomethodology – Data Collection Strategies and Data Analysis.

Sub unit IV Evaluation and Communication of Educational Research

Preparation and criticisms of Research Proposals and Reporting – Communication of Research – Ethics of Educational research.

Section B – Educational Statistics

Objectives

1. To enrich the students knowledge on the theoretical background of Hypothesis Testing.
2. To enrich the students capability of using different parametrical tests of significance.
3. To make the students know and use different Nonparametric tests of significance.

Sub unit I Inferential Statistics – Part I

Sampling and sampling Distributions – Standard Error as an Index of Sampling Error – Estimation of Standard Error – Directional and Nondirectional Tests – Type I and Type II Errors – Level of Significance of Hypothesis Testing.

Sub unit II Inferential Statistics – Part II

Parametric Techniques of Hypotheses Testing –

ANOVA – one way – two way, ANCOVA

Sub unit III Inferential Statistics – Part III

Non Parametric Techniques of Hypotheses Testing – Analysis of Frequencies - Chi-square (χ^2 test) – Sign Test.

References:

Section –A

Best, John.W & Kahn, James.V: Research in Education (10th Ed). New York: Pearson Education Inc.

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Van Dalen, Deobdd. B. Understanding Education Research – An Introduction

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Vockell L.Edward (1983) Educational: Research. New York: Macmillan Publishing Co. INC. Good.C. V/(1972). Essentials of Educational Research – Methodology and Design. New York: Appleton – Century (soft)

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Gomm, Rogger (2004). Social Research – Planning & Design. New York: Macmillain Publishing /co., Inc.

Gomm, Roger (2004) Social Research Methodology – A critical Introduction. New York: Palgrave Mackmillan.

Ary.D, Jacobs.L.C & Razavich.A (1972). Introduction to Research in Education. New York: Holt, Rinehart and Winston, Inc.

Wiseman S. Reporting Research in Education. Manchester : Manchester University Press.

Van Dalen. D.D Understanding Educational Research. New York: Mc Graw Hill.

Section-B

Ferguson. G.A. (1989) Statistical Analysis in Psychology and Education, New York. Mc Graw Hill.

Guilford. J.P. and Fruchter (1978). Fundamental Statistics in Psychology and Education. New York. Holt. Mc Graw Hill.

Siegel.S. (1975). Non Parametric Statistics for the Behavioral Sciences. New York. Mc Graw Hill

**Ph.D PRELIMINARY QUALIFYING EXAMINATION
(Course Work)**

Paper I – RESEARCH METHODOLOGY (EDUCATION)

Time: Three Hours

Maximum : 70 Marks

Section A

*Answer any **two** questions.
Each question carries 15 marks.*

1. Examine the scientific basis of educational research. Enunciate the functions of research.
2. Describe the distinctions between qualitative and quantitative research. How will you formulate a problem and design it for quantitative research?
3. What do you mean by sampling error? Under what circumstances, would you recommend probability and non-probability samples?
4. Explain Chi-square test its significance in statistical analysis. If $\Psi^2 = 16$ and $N = 4$, find the value of Phi coefficient.

(2x15 = 30 marks)

Section B

*Answer any **eight** questions.
Each question carries 15 marks.*

5. Elucidate the principles of educational research and its types.
6. Illustrate ex post facto research with a problem from education.
7. Explain experimental research and its designs.
8. Critically examine the value of causal comparative and correlational research in education.
9. Explain ethnography and ethno methodology with examples.
10. Describe the data collection strategies and mode of analysis in qualitative research.
11. Prepare a format for submitting a research report. Discuss its credentials.
12. Define Type I and Type II error. Which is more serious, a Type I or Type II error? Substantiate.
13. Illustrate directional and non-directional tests. Add a note on level of significance.
14. Describe briefly the technique of analysis of variance for one-way and two-way classifications.
15. Compare the advantages and assumptions of using parametric and non-parametric tests.
16. Formulate a research proposal for a project in teacher education. Mention the ethics of educational research.

(8x5 = 40 marks)