Kadi Sarva Vishwa Vidyalaya
Gandhinagar

Ph. D. Course Work

For

FACULTY OF EDUCATION

Year: 2014-15 onwards

Course Structure

Paper	Title	Objective Type Questions (Marks)	Essay Type Questions (Marks)	Total Marks
I	Research Methodology	40	60	100
II	Scientific Communication	40	60	100
III	Specialization Paper	40	60	100

PAPER – 1

RESEARCH METHODOLOGY AND DATA ANALYSIS

Syllabus

Rationale:

The only static thing in the world is "change" in every field of human endeavor. It has increased the complexities in every field including education because every now and then novel situations are emerging. Emergence of these situations is inevitable. Hence in order to resolve them, it is essential to understand these situations from their derivation point and adopt systematic and scientific approach. Research Methodology and Data Analysis helps educators to address to these aspects in more systematic and scientific way. Hence the course "Methodology of Educational Research and Data Analysis" is introduced for Ph.D. in Education.

Objectives:

To enable students to

1. develop the understanding about the concept and significance of Research in education
2. develop insight in identification of research problem and preparation of research proposal
3. develop scientific aptitude and rational attitude toward solving a problem
4. develop understanding about the use of different types of research tools & techniques.
5. develop insight into different methods of research in education
6. learn to write a good research report
7. plan for different types of research designs.
8. acquire the skill of presenting data in graphical form
9. get acquainted with the skill in applying statistical techniques for data analysis

UNIT:1 Introduction to Educational Research

1.1 Nature, Meaning, Characteristics of Research and Educational Research

1.2 Need or Significance or Educational Research

1.3 Purpose of Research: Basic or Fundamental, Applied and Action Research

1.4 Areas of Educational Research: Problems related to Content, Different Stages and Sectors of Education and Teaching process.

1.5 Steps in Research process

UNIT:2 The Research Problem and Preparation of the Research Proposal

2.1 Selection of the Problem, Definition and Statement of the Problem, Evaluation of the Problem, Criteria and sources for identifying the problem

2.2 Use of reference material source, library survey and internet surfing

2.3 Variables- Dependent, Independent, Intervening, Control

2.4 Delineating and Operationalizing variables

2.5 Writing Objectives

2.6 The Hypothesis: Nature, Definition and Characteristics of Good Hypothesis, Various types of hypothesis-Directional and Non Directional Hypothesis

2.7 Steps in Preparation of Research Proposal

UNIT: -3 Tools and Techniques for Data Collection

3.1 Sampling: Concept of Population and Sample, Characteristics of a Good Sample, Non Probability Sampling, Probability Sampling, Methods of Sampling: Random, Stratified, Purposive, Cluster and Quota Sampling, Sampling Errors and how to reduce them

3.2 Tools of Educational Research

3.2.1 Concept, types, forms, preparation (Construction), characteristics, validity, reliability, advantages and limitations of following tools: Questionnaire, opinionnaire, Interview, Observation, Rating scale, Attitude scale, Check-list

3.2.2 Standardized tests: Types and characteristics, Criteria for selecting a standardized test, NRT and CRT, Some standardized tests available in Gujarati language (Sp)

UNIT: -4 Methods of Research:

4.1 Descriptive Research, Historical Method, Survey Method, Ex post Facto Research, Developmental Research, Experimental and Quasi Experimental Research, Designs of experimental research, characteristics, Internal and external validity in experimental research.

4.2 Qualitative Research: Concept.

UNIT: -5 Data Presentation

5.1 Concept of Statistics

5.2 Parametric and Non Parametric Data: Concept and Scales of Measurement, Uses of Parametric and Non Parametric Tests

5.3 Descriptive and Inferential Analysis: Concept

5.4 Organization and Graphical Representation of Data: Drawing up a Frequency Distribution

5.5 Graphical Representation of The Frequency Distribution: Concept, Frequency Polygon, Histogram or Column Diagram, Ogive

UNIT:-6 Descriptive and Inferential Statistical Techniques for Data Analysis

6.1 Descriptive Statistics: Measures of Central Tendency, Measures of Variability, Measures of Relative Position and Correlation

6.2 Non Parametric Techniques: The Chi Square Test(single strata and 2x2 small sample only), Sign Test, Median Test, The Mann-Whitney U Test, Candle's W Test

6.3 Parametric Techniques: The Significance of the Difference between the Means, SDS and Percentages of Two Independent Groups as well as correlated group, Level of Significance, Types of Errors, Two Tailed and One Tailed Tests of Significance, Degree of Freedom, t-test and F test (One Way and Two Way ANOVA)

UNIT: -7 The Writing of Research Report and Its Evaluation:

7.1 General and Essential Considerations Format of Thesis/Dissertation, Quotations, Footnotes, Bibliography, Table and illustrations, Style and Typing,

7.2 Probable errors aroused while report writing

7.3 Criteria for evaluating research report

REFERENCES:

1. Anastasi, A (1982), Psychological Testing Macmillan, New York.
2. Best, J.W, and Kohn, J.V. (1986), Research in Education, New Delhi Prentice Hall.
3. Blacock, H.M. and Blacock, A.B.(1971), Methodology in Social Research, London, Mcgraw Hill.
4. Chandra, S.S. & Sharma, R.K. (2002), Research in Education, New Delhi: Atlantic Publishers and Distributors.
5. Cohen, L. an dManion, L. (1994), Research Methods in Education, London: Roulledge
6. Corey, S.M.(1953), Action Research to improve School Practice, New York; Bureau of Publications, Columbia University.
7. Edward, A.L. (1969), Technique of Attitude Scale Contruction, Bombay : Vakils Fetter, and Simons.
8. Good, C.V.(1972), Essential of Educational Research Methodology and Design, New York; Appleton Lentary crafts.
9. Guilford, J.P. (1982), Psychometric Methods, New Delhi, Tata McGraw Hill.
10. Garrett, Henry E.(1981): Statistic in psychology and Education, Vakils, Feffer, and Simon Bombay.
11. Gupta, S. (2005), Research Methodology and Statistical Techniques, New Delhi: Deep and Deep Publication
12. Kerlinger, F.N. (2007), Foundations of Behavioral Research (10^{nd} Edn.) Delhi : Surjeet Publications.
13. Koul, L (2002), Methodology of Educational Research (3^{rd} Edn), New Delhi : Vikas Publishing House.
14. Mangal, S.K. (2002), Statistics in Psychology and Education (2^{nd} Edn), New Delhi: Prentice Hall
15. Saxena, N.R., Mishra, B.K. & Mohanty, R.K. (2003), Fundamentals of Educational Research, Meerut: Surya Publication
16. Sharma, B. (2004), Methodology of Educational Research, New Delhi: Vohra Publishers and Distributors.
17. Yadav, M.S. and Mitra, S.K. (1989).Educational Research Methodological perspective CASE, Baroda.

Paper II - Scientific Communication

Syllabus

RATIONALE

Many students initially think of the development of a "thesis" as the product of their successful graduate education, rather than a key part of its genesis. A thesis is a conjecture, or a proposition supported by evidence. But how do you get started? What makes one thesis more successful than others? What are the relationships among a thesis, a hypothesis, and a research question? Knowing early on what research questions and hypotheses will guide the development of the proposed research is key to efficient literature searching, organizing background material, and generating hypotheses.

This course will explore scientific philosophy, critical thinking, and the use of the Web of Science and other tools to search literature. Key communication skills also will be developed in this course, and will include a working knowledge of scientific philosophy such that students can think and converse competently in the language of science. Course objectives will be met through practice in scientific writing, as well as critiques of existing literature.

OBJECTIVES

1) Develop and refine skills in communication of scientific knowledge (broadly defined to include the ability to be conversant in scientific philosophy), and competency in oral presentation and technical writing of reviews and proposals;

2) Learn to give, receive and value criticism in the form of peer review; and

3) Share in the wide diversity of ongoing research topics

Unit 1

- Steps to publication: from draft to submission
- Constructing tables and figures
- Manuscript preparation
- Grammar basics
- Commas

Unit 2

- Norms and standards of writing research papers and publishing papers;
- reviewing and recording from books, Journals, articles and thesis
- writing titles, running title

- authors-single and multiple authorship
- writing abstract/summary/ briefs
- selecting key words

Unit 3

- discussion section; Format, Drawing conclusion, Language style, acknowledgment
- references : Different style
- communication with the Editor, Reviewing Referees' Comments, Writing Review Articles
- Preparing Posters for Scientific Presentation
- Preparing and Delivering of Oral Presentation of Research Paper and handling questions
- Writing reports
- Plagiarism
- Funding Agencies for Research work, Preparing project proposal and applying for financial assistance / grant
- symbols and terminology, Standard Abbreviations and Symbols
- Preparing documents for MoUs,

Useful References

http://www.ldeo.columbia.edu/~martins/sen_res/how_to_thesis_proposal.html
http://www.learnerassociates.net/dissthes/
http://www.meaning.ca/articles/writing_research_proposal_may02.htm
http://www.indiana.edu/~wts/pamphlets/thesis_statement.shtml

TEXT BOOKS

1. Jane Gregory and Steve Miller, Science in Public: Communication, Culture, and Credibility, Plenum, New York, 1998.
2. James G, Paradis and Muriel L. Zimmerman, The MIT Guide to Science and Engineering Communication. MIT Press, UK, 2002.

3. J.V. Vilanilam, Science Communication and Development in India, Sage, New Delhi,

1993.

1. Stuart Allan, Science Journalism: Media, Risk and Science. Open University Press,

London, 2002.

2. Science Magazine. http://www.sciencemag.org

3. A.N. Kothare, Sudhanshu S. Palsule, S.M. Parekh and M.P. Navalkar. Of Science & Scientists, National Book Trust, New Delhi, 2005.

Core Paper- III(Education)

Syllabus

Unit : 1 Educational Philosophy **20%**

1.1 Relation of Education and Philosophy

1.2 Western Schools of Philosophy: Idealism, Realism , Naturalism, Pragmatism, Existentialism

1.3 Indian Schools of Philosophy: Vedanta, Buddhism ,Jainism , Islamic

1.4 Contributions of Swami Vivekanand , Mahatma Gandhi, Ravindranath Tagore, Shree Aurbindo to Educational Thinking

Unit: 2 Sociological Foundations of Education **20%**

2.1 Relationship of Sociology and Education ,Meaning and Nature of Educational Sociology

2.2 Meaning and Nature of Social Change and Social Mobility

2.3 Education as Related to Social Equity and Equality of Educational Opportunities

2.4 Constraints on Social Change in India (caste, ethnicity, class, language, religion, regionalism)

Unit:3 Psychological Foundations of Education **20%**

3.1 Relationship of Education and Psychology and Concept of Educational Psychology

3.2 Process of Growth and Development

- Physical, social, emotional and intellectual
- Individual Differences- determinants, role of heredity and environment, implications of individual differences for organizing educational programmes

3.3 Personality : Types and trait theories ,Measurement of Personality

3.4 Mental Health and Hygiene: Process of adjustment, Conflicts and Defence mechanism, Mental Health,

Unit : 4 Educational Measurement and Evaluation **20%**

4.1 Educational Measurement : Concept ,Scope , Need

4.2 Tools of Measurement and Evaluation: Essay type test, Objective test, Scales, Questionnaires, Inventories, Performance test,

4.3 Steps in the Standardization of test and Characteristics of a Good Measuring Instrument (i.e. Validity, Reliability, Norms, Usability)

4.4 Measurement of Achievement, Aptitudes, and Attitudes

Unit: 5 Educational Technology **20%**

5.1 Meaning and scope of educational Technology, System Approach ,components of educational Technology(Hardware and software)

5.2 Communication Process: Concept of Communication, Modes and barriers of Communication, Class room Communication

5.3 Modification of Teaching Behaviour : Micro teaching, Simulation ,Flander's Interaction Analysis

5.4 Instructional Strategies: Lecture, Team teaching , Discussion , Seminars and Tutorials

REFERENCES:

1. Aggrawal. S. (2007) Philosophical Foundation of Education, Authors press. Delhi.

2. Aggrawal.J.C. & Gupta, S., (2007)Great Philosophers and Thinkers on Education, Shipra publications, New Delhi.

3. Rusk,R.R.(2007) The Doctrines of the Great Educators, Surjeet Publication, New Delhi.

4. Talesra,H. (2007) Sociological Foundation of Education, Kanishka Publication, New Delhi.

5. Joshi, O.H. (2006) Kelavni na Samajik Paya, Sikshan Shastra Bhavan, Saurastra University, Rajkot.(Gujarati)

6. Mangal S.K.,(2007) Essentials of Education psychology, Prentice Hall of India Delhi.

7. Sharma Yogendra., (2004), A textbook of educational Psychology ,Kanishka Publishers,New Delhi.

8. Berge, Z.L. and Collins.(1999),M.P. Computer Mediated Communication and the Online Classroom (Vol.1-3) Cresskil, N.S: Hamptom Press.

9. Singh A. (2007) ,(etal) Teacher Training A reflective perspective, Kanishka Publishers Distributors, New Delhi.

10. Singh B. (2007), Modern Educational Measurement and Evaluation System,Anmol Publications Pvt. Ltd. New Delhi.

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QUESTION PAPER FORMAT

Question - 1 Choose the correct answer from the given options. (40)
(40/40)

Question - 2 Answer any two of the following questions in detail. (24)
(2/3)

Question - 3 Answer any three of the following questions. (24)
(3/5)

Question - 4 Answer any four of the following questions in brief. (12)
(4/6)