

Savitribai Phule Pune University

(formerly University of Pune)

Syllabus for M.Phil./Ph.D. (PET) Entrance Exam : Physical Education

Research Methodology

1. Fundamentals of Research

- a. Meaning, Nature, Characteristics, Need and Scope of research in the field of Education/ Physical Education.
- b. Distinction between Research, Invention and Discovery
- c. Scientific inquiry and theory development
- d. Source of knowledge
- e. Interdisciplinary in research : need and importance

2. Types and Methods of Educational Research

- a) Types: Fundamental, Applied, Action research
- b) Research Methods:
 - Historical: Sources of data, internal and external validity
 - Descriptive: Surveys, Case Study, developmental, co- relational and ex-post-facto research
 - Experimental: research designs - pre, quasi and true experimental researches, internal and external validity of the experiment
 - Multimethod Research
- c) Qualitative Research : Need and importance, Characteristics, Difference between Qualitative and Quantitative Research

3. Research Problem, Variables, Hypothesis Population and Sampling

- a) Selection and finalization of research problem, Operational/dictionary/conceptual definitions
- b) Review of related literature
 - Sources (Data Bases)
 - Searching (Use of technology)

➤ Review writing

- c) Variables: Concept, Nature, Characteristics and Types
- d) Hypothesis: Concept, Characteristics and Forms, hypothesis testing
- e) Assumptions: Meaning and Role
- f) Population: Concept
- g) Sampling and Sample: Need of Sampling, Probability and non-Probability
- h) based sampling, characteristics of good sample, errors in sampling

4. Data Collection tools/techniques:

1. Questionnaire
2. Interview
3. Observation
4. Psychological tests
5. e-tools

Qualities of good data collection tools.

5. Data Analysis and interpretation

- a) Scales of Measurement
- b) Measures of central tendency and variability
- c) Measures of relative positions: Deciles, Percentiles, Percentile rank and standard scores
- d) Correlation - Concept, types and uses
- e) Concepts of: Parameter and statistic, Type I and Type II errors, Degrees of Freedom, Confidence limits and intervals, Parametric and non-Parametric tests
- f) t- test, F test, Chi-Square test

6. Report writing and other

- a) Format of research report
- b) Characteristics of good research report
- c) Research ethics
- d) Plagiarism, Citation guidelines
- e) Use of computers in various phases of research

Subject Concerned Syllabus

Physical Education

Unit-1 Foundation of Physical Education

- Introduction to and definition, aims and objectives of Physical Education
- Philosophical basis of Physical Education
- Psychological basis of physical Education-Play and Play theories
- General principles of growth and development, Principles of motor-skill acquisition, transfer of training effects.
- Sociological basis of physical Education-socialization process, social nature of men and physical activity, traditions and sport, competition and cooperation
- Olympic Movement-and its impact
- Professional preparation in Physical Education in India, development of teacher education in Physical Education, Professional Ethics, Qualities and Qualifications of Physical Educational Personnel
- Principles of curriculum planning, Age characteristics of pupils and selection of activities.
- Construction of class and school physical Education time table.
- Learning process - theories and laws of learning, Motivation, theories and dynamics of motivation in sports,
- Psychological factors affecting sports performance-viz., stress, anxiety, tension and aggression.
- Personality, its dimensions, theories, personality and performance
- Individual differences and their impact on skill learning and performance
- Group dynamics, team cohesion and leadership in sports
- Sociometrics, economics and politics in sports

Unit-2 Scientific Basis of Physical Education

- Physiology of muscular activity, Neurotransmission and Movement mechanism
- Physiology of respiration
- Physiology of blood circulation
- Factors influencing performance in sports
- Bioenergetics and recovery process
- Health-Guiding principles of health and health education
- Nutrition and dietary manipulations
- Health-related fitness, obesity and its management
- Environmental and occupational hazards and first aid
- Communicable diseases-their preventive and therapeutic aspects
- School health program and personal hygiene
- Theories and principles of recreation.
- Recreation program for various categories of people

Unit—3 Fitness & Sports Training

- Characteristics and principles of sports training
- Training load and periodization – short term & long term plan
- Training methods and Designing training program for development of various motor qualities.
- Training cycles (Micro, Meso & Macro cycles)
- Technical and Tactical preparation for sports.
- Sports talent identification process and procedures
- Preparing for competition-build up competitions, main competition, competition frequency, Psychological preparation.
- Biological basis of physical activity-benefits of exercise, growth and exercise, exercise and well-being sex and age characteristics of adolescent. body types
- Basic Principles of Physical Fitness
- Benefits of aerobic exercises, monitoring heart rate, Developing aerobic exercise program- setting goals, applying FITT, building & maintaining aerobic fitness,

- Benefits of muscular strength & endurance, assessing muscular strength & endurance, creating a successful strength training program,
- Applying FITT principle, weight machines versus free weights, weight training safety,
- Determinants of flexibility, benefits & additional potential benefits of flexibility & stretching exercises, Flexibility improvement- FITT principle

Unit-4 Biomechanics, Athletic care & Rehabilitation

- Joints and their movements-planes and axes
- Kinetics, Kinematics-linear and angular, levers
- Laws of motion, principles of equilibrium, force, spin and elasticity
- Muscular analysis of Motor movement
- Mechanical analysis of various sports activities
- Mechanical analysis of fundamental movements- running, jumping, throwing, pulling and pushing
- Athletic injuries-their management and rehabilitation
- Therapeutic modalities and exercise
- Ergogenic aids and doping
- Posture – Postural Deformities

Unit—5 Research , Statistics, Evaluation & Management of Physical Education & Sports

- Nature, scope and type of research , ethical consideration in research
- Formulation and selection of research problem.
- Sampling-process and techniques.
- Methods of research.
- Data collection-tools and techniques.
- Statistical techniques of data analysis-measures of central tendency and variability correlation, normal probability curve, t-test and chi-square, ANOVA

- Hypothesis-formulation, types and testing of null hypothesis
- Concept of test, measurement ,Evaluation & Assessment
- Basic Approaches and Principles of measurement and evaluation
- Construction of knowledge test and Psychomotor test
- Criteria of test selection
- Concepts and assessment of physical fitness, motor fitness, motor ability and motor educability and skill tests (Basket Ball, Soccer, Volley Ball, Badminton, Tennis)
- Measurement of Affective Behavior: Likert Scale, Rating Scale and Questionnaire
- Psychological measurement in sports and Exercise -competitive anxiety, aggression, team cohesion motivation, self-concept.
- Anthropometric measurements and body composition.
- Concept and principles of management
- Management of infrastructure, equipments, finance and personnel. Media & Sports
- Instructional Process in Physical Education – essential elements, optimizing
- learning, effectiveness, class management, methods & techniques of teaching

Unit—6 Yoga, recreation, pedagogy, adapted physical education

- Meaning, definition, need & importance of yoga , Historical background of yoga, types of yoga, Ashtanga Yoga (Eight stages of yoga), Chitta Vrtti (Causes for the modification of the mind), Chitta Viksepa (Directions & obstacles)
- Meaning & definition of Asanas, Pranayam, Bandha, & Kriya, Types of Asanas, Pranayam, Bandha, & Kriya, Need & importance of Asanas, Pranayam, Bandha, & Kriya ,Benefits & effects of Asanas, Pranayam, Bandha, & Kriya
- Purpose, Aims and Objectives of Adapted Physical Education and Sports, Adapted Sports- Para Olympics

- Behavioral and Special learning disability, Visual Impaired and Deafness, Health Impaired students and Physical Education, HRPF and its development for Individual with unique need
- Stages of skill development in teaching, sources of help, expert PE teacher, Effective teacher- Active teachers, contextual variations of active teaching
- Spectrum of teaching styles, Managing behavior & misbehavior, discipline, Developmental analysis, planning for instruction
- Technology in Physical Education, Domains of Physical Education, Curriculum in Physical Education
- Generic instructional strategies- guided practice, independent practice, monitoring student performance, Instructional format- active teaching, task teaching, teaching through questioning, peer teaching, cooperative learning
- Traditional methods for assessing teaching- intuitive judgment, eyeballing, anecdotal records, checklists, rating scale, Systematic observation records- event recording, duration recording, interval recording, group time sampling, self recording