



VINAYAKA MISSION'S RESEARCH FOUNDATION

(Deemed to be University under section 3 of the UGC Act 1956)

FACULTY OF PHYSICAL EDUCATION Ph.D Program Physical Education RESEARCH METHODOLOGY – SYLLABUS

Total Lecture Hours: 60

Credits: 4

UNIT I – Objectives and types of research

Meaning and Definition of Research in Physical Education and Sports – Importance, limitations - Motivation and objectives – Research methods vs. Methodology. Types of research – Descriptive, Analytical, Applied vs. Fundamental, Quantitative vs. Qualitative, Conceptual vs. Empirical, concept of applied and basic research process, criteria of good research.

UNIT II – Research Formulations and Design

Defining and formulating the research problem, selecting the problem, necessity of defining the problem, importance of literature review in defining a problem, literature review – primary and secondary sources, reviews, monograph, patents, research databases, web as a source, searching the web, critical literature review, identifying gap areas from literature and research database, development of working hypothesis.

UNIT III – Data Collection and Analysis

Computers and its role in research, Effective use of Internet, Execution of the research - Observation and Collection of data - Methods of data collection – Sampling Methods- Data Processing and Analysis strategies - Data Analysis with Statistical Packages (SPSS for student t-test, ANOVA, ANCOVA, Correlation and regression etc.), - Hypothesis-testing - Generalization and Interpretation.

UNIT IV – Reporting and thesis writing

Structure and components of scientific reports -Types of report – Technical reports and thesis – Significance – Different steps in the preparation – Layout, structure and Language of typical reports – Illustrations and tables- Bibliography, referencing and footnotes - Oral presentation – Planning – Preparation – Practice – Making presentation – Use of visual aids - Importance of effective communication.

Unit V – Research and Publication Ethics (Theory)

15 Hours)

PHILOSOPHY AND ETHICS :(3 Hours)

1. Introduction to philosophy: definition, nature and scope, concept, branches.
2. Ethics: definition, moral philosophy, nature of moral judgments and reactions.

SCIENTIFIC CONDUCT: (5 Hours)

1. Ethics with respect to science and research
2. Intellectual honesty and research integrity



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3. Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP)
4. Redundant publications: duplicate and overlapping publications, salami slicing
5. Selective reporting and misrepresentation of data.

PUBLICATION ETHICS: (7Hours)

1. Publication ethics: definition, introduction and importance
2. Best practices/standards setting initiatives and guidelines: COPE, WAME, etc.
3. Conflicts of interest
4. Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types
5. Violation of publication ethics, authorship and contributor-ship
6. Identification of publication misconduct, complaints and appeals
7. Predatory publishers and journals

RESEARCH AND PUBLICATION ETHICS (PRACTICE) (15HOURS) (INTERNAL)

OPEN ACCESS PUBLISHING:(4 Hours)

1. Open access publications and initiatives
2. SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies
3. Software tool to identify predatory publications developed by SPPU
4. Journal finder/journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggested, etc.

PUBLICATION MISCONDUCT:(4Hours)

(A) Group Discussions:

- a. Subject specific ethical issues, FFP, authorship
- b. Conflicts of interest,
- c. Complaints and appeals: examples and fraud from India and abroad

- (B) Software tools: Use of plagiarism software like Turnitin, Urkund and other open source software tools.

DATABASES AND RESEARCH METRICS :(7Hours)

(A) Databases:

1. Indexing databases
2. Citation databases: Web of Science, Scopus, etc.

(B) Research Metrics:

1. **Impact Factor of journal** as per Journal Citation Report, SNIP, SIR, IPP, CiteScore
2. **Metrics:** h-index, g-index, i10 index, altmetrics.

REFERENCES



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1. Garg, B. L., Karadia, R., Agarwal, F., & Agarwal, U. K. (2002). *An introduction to research methodology*. Jaipur: RBSA Publishers.
2. Clarke, D. H., & Clarke, H. H. (1984). *Research processes in physical education, recreation, and health*. Englewood Cliffs, NJ: Prentice Hall.
3. Kamlesh, M. L. (2011). *Methodology of research in physical education and sports*. New Delhi, India: Metropolitan Book Co.
4. Sinha, S. C., & Dhiman, A. K. (2002). *Research methodology* (Vols. 1–2). New Delhi: EssEss Publications.
5. Trochim, W. M. K. (2005). *Research methods: The concise knowledge base*. Mason, OH: Atomic Dog Publishing.
6. Wadehra, B. L. (2000). *Law relating to patents, trademarks, copyright, designs and geographical indications*. New Delhi: Universal Law Publishing.

ADDITIONAL READING

1. Argyrous, G. (2011). *Statistics for research: With a guide to SPSS* (3rd ed.). Los Angeles, CA: Sage Publications.
2. Barrow, H. M., & McGee, R. (2006). *A practical approach to measurement in physical education* (6th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.
3. Baumgartner, T. A., Hensley, L. D., & Hensley, L. D. (2013). *Conducting and reading research in kinesiology* (5th ed.). Boston, MA: McGraw-Hill.
4. Best, J. W., & Kahn, J. V. (2006). *Research in education* (10th ed.). Boston, MA: Pearson Education.
5. Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Los Angeles, CA: Sage Publications.
6. George, D., & Mallery, P. (2020). *IBM SPSS statistics 26 step by step: A simple guide and reference* (16th ed.). New York, NY: Routledge.
7. Gravetter, F. J., & Wallnau, L. B. (2016). *Statistics for the behavioral sciences* (10th ed.). Boston, MA: Cengage Learning.
8. Kothari, C. R. (2009). *Research methodology: Methods and techniques* (2nd ed.). New Delhi, India: New Age International.
9. Pallant, J. (2020). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (7th ed.). Maidenhead, UK: Open University Press/McGraw-Hill Education.
10. Reddy, M. V. (1997). *Research methods in physical education and sports*. New Delhi, India: Friends Publications.
11. Thomas, J. R., Nelson, J. K., & Silverman, S. J. (2015). *Research methods in physical activity* (7th ed.). Champaign, IL: Human Kinetics.
12. Verma, J. P. (2013). *Data analysis in management with SPSS software*. New Delhi, India: Springer.