



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 –Research Ethics, IPR and Scholarly Publishing

Ethics-ethical issues, ethical committees (human & animal); IPR- intellectual property rights and patent law, commercialization, copy right, royalty, trade related aspects of intellectual property rights (TRIPS); scholarly publishing- IMRAD concept and design of research paper, citation and acknowledgement, plagiarism, reproducibility and accountability

UNIT-V – 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.

REFERENCES

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: Ess Ess 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.