

## **Educational Research Methodology**

### **COURSE CONTENT:**

This course provides a framework for learning the fundamental codes of scientific research in the fields of education and educational sciences. The content is divided into three parts: (a) the theory of educational research, (b) the core elements of the quantitative approach using appropriate software, and (c) an introduction to the logic of interpretative approaches.

### **A. The Theory of Educational Research**

Fundamental research methodologies and their epistemological assumptions.

1. Key research paradigms and the interplay between theory, methodology, and data.
2. The concept, institutions, and bodies in educational research (journals, associations, conferences), along with major studies in the fields of education and educational sciences.
3. The role, purpose, and importance of the literature review, proper use of citations, issues of plagiarism, guidelines from the American Psychological Association (APA), and the use of the Mendeley reference management software.

### **B. Statistical Analysis (using Jamovi software)**

4. Measures of central tendency and dispersion (mean, median, mode, moments, variance, standard deviation, range, etc.).
5. Correlation between two or more variables (covariance, correlation, Karl Pearson's  $r$  coefficient, Charles Spearman's  $\rho$  coefficient).
6. Techniques for presenting quantitative data (bar charts, histograms, John Tukey's box plots, pie charts, radar charts).
7. The normal distribution, probability tables, and their application in educational research and assessment.
8. Sampling distribution, statistical significance, and hypothesis testing using the Mann-Whitney U test.
9. Chi-square distribution and hypothesis testing using Karl Pearson's chi-square statistic.

### **C. Qualitative Approaches**

10. The field and history of qualitative research methodologies.
11. Collection and interpretation of qualitative data (interviews, narratives, artifacts, grounded theory).
12. Forms and possibilities of ethnography in educational research (school ethnography, autoethnography, visual ethnography) and Max van Manen's phenomenological research approach.