Code: M-PED/04
Credits: 9
Matter: Theories and models of educational processes
Main language of instruction: Italian
Other language of instruction: English

Teaching Staff

Head instructor
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Introduction

1. *Objective of the course:*

The course presents topics concerning the development of educational and evaluative research, the study design as a tool for research documentation, evaluation though method, learning and system aspects, and multivariate data analysis. The objectives of this course, which broadens the issues addressed in the three-year degree courses, aim on the one hand to link the actions of educational and evaluative research to the actions of data analysis depending on the operational transformation or conceptual models, and constructs; on the other hand this course introduce the main techniques of statistical data analysis, functional to educational-evaluative research, (in addition to qualitative, quantitative or mixed kinds), to describe, to explain, to interpret the findings that derive from the observed and analyzed phenomena.

Objectives

2. *Course Structure:*

The course is built around the followings core topics:
1. The exploration of the phenomenon under study; 2. the description of the phenomenon under study; 3. The synthesis and classification of information regarding the object of study; 4.The explanation, the interpretation and the specification of the relations between the variables, which are hypothetically considered to be relevant in connection with the phenomenon under study; 5. The forecast of future states regarding the phenomenon under study; 6. The formal design of the research, also in an European research perspective.
The order of pursuable goals is not random: they are arranged in ascending order with respect to: a) the level of complexity (from the relatively simple exploration to the more complex forecast); b) the degree of desirability, in the sense that an empirical investigation should guarantee the achievement of all six objectives.

Competencies:

Based on the objectives, the student will demonstrate:
- critical reasoning through the analysis and interpretation of experimental data, theoretical results and models.
- critical interpretation and understanding of experimental research cases;
- critical analysis and comparison of results from national and international educational research.
- critical analysis of educational phenomena and problems (pedagogical, psychological and social) and of educational and evaluative research;

In addition, the student will will be able to plan/adopt:
- the activities of formalized educational and evaluative research;
- the main techniques of data analysis, sorting and classification, used in the analysis of educational research results (mainly empirical);
- data analysis models in a laboratory context, interactive teaching, or based on assigned tasks or analyzing the results of educational research with awareness and critical spirit;

Syllabus

3. *Programme of the course:*

Subject 1. Experimental educational and evaluative research. Application of research in education. Paradigms, theories and laws.
Subject 2. Qualitative empirical research.
Subject 3. Quantitative empirical research.
Subject 4. Assumptions for measurement. Measurement with indicators. Measurement, scales and scaling. Design phases. Project preparation. Design by objectives.
Subject 5. Aspects of evaluation. Educational assessment. System evaluation. Performance evaluation. Evaluation of learning tests. Analysis of learning outcomes.
Subject 6. Multidimensional data analysis. Analysis of variance. Multivariate analysis logic.
Subject 7. Dimension reduction: multiple regression analysis, factor analysis, correspondence analysis.
Subject 8. The log-linear analysis. Group analysis.
Subject 9. The validity of the research.

Evaluation system and criteria

Student Project work (50% of final grade): short presentation about a systematic review produced by the student about an assigned topic. Appraisal of critical reasoning and reporting competence.

Final exam (50% of final grade): A written test, in which the student should choose 2 questions (or exercises) out of 4. The evaluation of the written test will be determined by the degree of knowledge demonstrated, use of the correct methodology and related skills.

Bibliography and resources

1. *Materials to consult:*

Study resources provided by the lecturer

Recommended bibliography:

Melchiori R., Pedagogia. Teoria della valutazione, Roma, Pensa Editore, 2009.