

Methodology of Didactic Research

Schedule:

Week 1: Foundations of classroom research: methodological differences between disciplinary research and subject-specific pedagogy research; criteria of scientific rigor.

Week 2: The process of subject-specific methodological research: empirical research, experimental designs, database creation, standardization of measurement instruments.

Week 3: Statistical methods for educators: statistical analysis of research results.

Week 4: Knowledge structure investigations I: knowledge space and knowledge states; prerequisite relationships; competence-performance extensions; knowledge space theory with phenomenography; collective analyses.

Week 5: Knowledge structure investigations II: comparison and interpretation of relevant scholarly literature.

Week 6: The word association method I: applications and critiques.

Week 7: The word association method II: comparison and interpretation of relevant scholarly literature.

Week 8: Evaluation of the impact and effectiveness of subject-specific pedagogical development: goals, hypotheses, sample selection, methods and tools of interventions, assessment, literature examples.

Week 9: Measurement and assessment of student progress under different teaching methods: developmental categories; stagnation, progression, regression; Cohen's effect size; examples.

Week 10: Research methodology and applications of student self- and peer-assessment in schools: definition; advantages and disadvantages; validity and reliability; forms and methods; examples.

Week 11: Student presentations I: independent research design principles and methodology; scholarly discussion.

Week 12: Student presentations II: independent research design principles and methodology; scholarly discussion.