

Research design in psychology, 9 hp

Forskningsdesign i psykologi, 9 hp

Course Code/Codes	35PS086
Subject Area	Psychology
School/equivalent	School of Behavioral, Social and Legal Sciences
Valid from	2025-05-06
Approved	2025-05-06
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Approved by	Head of School
Translation to English, date and signature	250425 JP

1 Course content

The course aims to provide knowledge about research design: how a study is set up, carried out and reported, and how this is expressed in different areas of psychology. During the course, the elements of research are discussed and examined: problem formulation, research questions, previous research, method, the empirical investigation, selection, limitations and justification of empirical evidence, results and research contributions. Research ethics and scientific theory issues are also touched upon.

The course focuses on jointly discussing and examining various research designs in psychology. Various research designs of central importance to different areas of psychology will be covered, including randomized controlled trials, experimental designs using behavioral and brain imaging data, longitudinal designs, and designs within epidemiological research.

2 Outcomes

2.1 The course in relation to the doctoral programme

The course shall primarily refer to the following intended learning outcomes for third-cycle courses and study programmes as described in the Higher Education Ordinance, i.e. the doctoral student shall demonstrate:

Knowledge and understanding

- broad knowledge and systematic understanding of the research field (part of outcome 1)
- advanced and up-to-date specialised knowledge in a limited area of this field (part of outcome 1)
- familiarity with research methodology in general (part of outcome 2)
- familiarity with the methods of the specific field of research in particular (part of outcome 2)

Competence and skills

- the capacity for scholarly analysis and synthesis (part of outcome 3)
- the capacity to review and assess new and complex phenomena, issues and situations autonomously and critically (part of outcome 3)
- the ability to identify and formulate issues with scholarly precision critically, autonomously and creatively (part of outcome 4)
- the ability to plan and use appropriate methods to undertake research and other qualified tasks within predetermined time frames (part of outcome 4)
- the ability to review and evaluate research and other qualified tasks (part of outcome 4)

Judgement and approach

- the ability to make assessments of research ethics (part of outcome 9)

The intended learning outcomes are listed in the same order as in the general syllabus for the programme.

2.2 Intended course learning outcomes

To obtain a passing grade, the doctoral student shall demonstrate:

Block 1. Experimental and quasi-experimental group studies.

Knowledge and understanding

- Has knowledge of different types of experimental research design, analysis methods and reporting of results.
- Understands the application of different types of experimental research design, analysis methods and reporting of results.

Skills and abilities

- Reads, interprets and discusses experimental research methods and designs, both orally and in writing.
- Can critically compare different types of experimental research design, analysis methods and reporting of results.
- Can apply different types of experimental research design to plan and carry out own research projects under supervision.

Block 2. Observational studies

Knowledge and understanding

- Has, regarding observational studies, knowledge of different types of research design, analysis methods and reporting of results.
- Understands, regarding observational studies, the application of different types of research design, analysis methods and reporting of results.

Skills and abilities

- Reads, interprets and discusses research designs in observational studies both orally and in writing.
- Can, regarding observational studies, critically compare different types of research designs, analysis methods and reporting of results.
- Can apply different types of research designs within observational studies to plan and carry out own research projects under supervision.

For both blocks:

Knowledge and understanding

- Has knowledge of scientific theoretical assumptions behind different methods for hypothesis testing in research in psychology
- Has knowledge of methodological and scientific theoretical starting points for testing causal relationships in psychological research
- Has knowledge of different ways to summarize, synthesize and evaluate research based on a predetermined research question

Evaluative skills and approaches

- Can evaluate and critically compare different methods for hypothesis testing in research in psychology based on scientific theoretical assumptions

- Can evaluate and critically compare different methods for testing causal relationships based on scientific theoretical assumptions
- Can evaluate and critically compare different methods for summarizing, synthesizing and evaluating research in order to be able to draw valid conclusions regarding a research question

3 Reading list and other teaching material

The following course readings and teaching material will be used on the course:

William R. Shadish, Thomas D. Cook, Donald T Campbell. (2001) *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*.

Kazdin, A. *Methodology: What it is and Why it is so important*.

Holland, P. W. (1986). "Statistics and Causal Inference." *J. Am. Stat. Assoc.* 81 (396): 945–60.

Shadish, W. R. (2010). Campbell and Rubin: A primer and comparison of their approaches to causal inference in field settings. *Psychological Methods*, 15(1), 3–17.

Selected chapters from:

Kenneth J Rothman (2024). *Epidemiology: An Introduction*

Peter A Bandettini (2020). *fMRI*.

Alan E Kazdin. (2024). *Methodological Issues and Strategies in Clinical Research*

Research papers:

Selected papers (maximum 300 pages).

4 Teaching formats

Teaching on the course takes the following format:

Individual studies, seminars and lectures. Attendance at the seminars is mandatory. Before each seminar, the student is expected to have read the literature, prepared for discussion, and actively participated.

5 Examination

Examination consists of two separate papers, each addressing the theme of one of the blocks. The written paper for block I should focus on designing a study with respectively an experimental or quasi-experimental group study design; the paper for block 2 should focus on designing a study with an observational design.

- Purpose and aims (research question)
- Method
- Reflection

The method should be written as a method section using APA standard. The reflection section should detail reflections on the potential risks, strengths and weaknesses of your choice of methods, making active use of the literature. Included in this should be a more general reflection on possibilities and limitations to draw causal inferences based on the choice of design. The reflection section should also discuss a possible alternative research design that could answer the research question. Each examination should be maximum 5 pages in length and written in accordance with the Publication Manual of the American Psychological Association (6th edition).

The course is assessed through an examination consisting of the components listed below. The individual components are not graded separately but together they provide the basis for assessment and grading.

- Written assignment

- Active participation in the seminars

6 Grades

Examinations on third-cycle courses and study programmes are to be assessed according to a two-grade scale with either of the grades 'fail' or 'pass' (local regulations).

The grade shall be determined by a teacher specifically nominated by the higher education institution (the examiner) (Higher Education Ordinance).

To obtain a passing grade on examinations included in the course, the doctoral student is required to demonstrate that he/she attains the intended course learning outcomes as described in section 2.2. Alternatively, if the course consists of multiple examinations generating credit, the doctoral student is required to demonstrate that he/she attains the outcomes that the examination in question refers to in accordance with section 5.

A student who has failed an examination is entitled to a retake.

If an examination consists of several examination components, and a student fails an examination component, the examiner may, as an alternative to a retake, set a make-up assignment with regard to the examination component in question.

A doctoral student who has failed an examination twice for a specific course or course element is entitled, upon his/her request, to have another examiner appointed to determine the grade.

7 Admission to the course

7.1 Admission requirements

To gain access to the course and complete the examinations included in the course, the applicant must be admitted to a doctoral programme at Örebro University.

In order to participate in the course and the exams included in the course, the applicant must be admitted to a doctoral degree program at Örebro University.

The basic eligibility to participate is for those who have been admitted to a doctoral degree program at a Swedish university or equivalent education abroad.

The specific eligibility is for those who have been admitted to a doctoral degree program in the subject of psychology.

7.2 Selection

Selection between applicants who have been admitted to doctoral programmes at Örebro University and who otherwise meet the admission requirements as listed above is made according to the following order of precedence:

If no other selection criteria are specified in this section, priority shall be given to applicants with a lower number of course credits left before the award of their degree over applicants with a higher number of remaining course credits. Should two or more students have equal number of credits,

selection will be done through the drawing of lots. This also applies within any selection groups listed unless otherwise stated.

7.3 Other applicants than doctoral students admitted at Örebro University

Other applicants than doctoral students admitted at Örebro University may be given access to the course on the grounds of provisions for and/or agreements regarding contracted courses, joint degrees, national graduate schools or cooperation in other respects with other universities.

Any decisions on what such other applicants may be given access to the course are made separately and on the basis of the provisions and/or agreements that occasion the student to apply for the course.

For participation in the course in other respects, the same provisions shall apply as for doctoral students admitted to Örebro University.

8 Transfer of credits for courses, study programmes and other experience

Provisions on the transfer of credits can be found in the Higher Education Ordinance and on the university's webpage.

9 Other information

Transitional provisions