



DEPARTMENT OF EDUCATION, COMMUNICATION AND LEARNING

FOU2100 Methodology in early childhood mathematics education research, 7.5 credits

Metodologi i forskning om yngre barns matematiklärande, 7,5 högskolepoäng

Third-cycle level / Forskarnivå

Confirmation

This syllabus was confirmed by the Department of Education, Communication and Learning on 2021-03-15, and is valid from Autumn semester 2021.

Responsible Department

Department of Education, Communication and Learning, Faculty of Education

Entry requirements

Admission to the course requires admission to a postgraduate programme.

Learning outcomes

After completing the course the students will be able to:

Knowledge and understanding

- Identify and discuss differences between research traditions within early childhood mathematics research, including their methods for data analysis and conceptualization.
- Develop knowledge based arguments for selection of research design, method for data analysis and generalization of research findings.
- Understand the implication of, and argue for, choice of methodology for research projects on early childhood mathematics education.

Competence and skills

- Motivate and argue for choices of methods and approaches to operationalize research questions into executable research designs.
- Discuss and problematize approaches in research design, methods for generating data and analysis, and conceptualization of research findings.
- Critically discuss the limitations and opportunities of different methodological approaches

in relation to early childhood mathematics education research.

Judgement and approach

- Reflect upon traditions and innovations in methodology regarding their knowledge contribution to the field of early childhood mathematics education.
- Evaluate different designs, methods for data generation, analysis and conceptualization of results in relation to research questions.
- Discuss research in early childhood mathematics education in relation to a research ethics perspective and the role of the researcher.

Course content

The course Methodology in early childhood mathematics education research offers deep insights to methodological questions that are raised in research on mathematics learning in the early years. Specific immersion is done regarding research designs, methods for data generation, approaches for quantitative and qualitative analyses, and ethical questions in research. The course contribute to knowledge about theoretical approaches and methodological contributions to the field of early mathematics learning, limitations and benefits of different methods that will develop students preparedness to design research projects but also critically evaluate the knowledge contribution that different methodological choices entail.

The course consists of three workshops with following themes:

1. Formulating problems and design for researching children's mathematics learning
2. Methodological challenges, focusing quantitative and qualitative methods, large- and small scale research designs
3. How to operationalize aim and research questions with pedagogical aims and implications, and ethical questions in research.

Invited experts participate in the workshops with lectures and guidance in practical-oriented work regarding the topics outlined in the themes. These are further elaborated through literature reading and collaborative work in seminars. Included in the course is also participation in an international conference within the field of the course's knowledge area.

Types of instruction

The forms of instruction are lectures, seminars and workshops.

Language of instruction

The course is given in Swedish but can be given in English if necessary.

Grades

The grade Pass (G) or Fail (U) is given in this course.

Types of assessment

The workshops are followed up by small group seminars in which the students reflect upon the workshop theme and literature connecting to this theme. This part of the course is examined by

short written reflections presented in text and verbally at the seminars, which includes commenting on a fellow student's reflections.

The course ends with attendance at an international conference on early childhood mathematics education research, to which a paper is written and discussed in a final seminar.

Course evaluation

Course evaluation is carried out after the course. Course evaluations are compiled and made available to interested students. This should guide the development and planning of future courses.