



Course Report Introduction to Research Methods in Technology and Learning, FLF3011, ht 2021- vt 2022

Mandatory course for doctoral students in Technology and Learning provided by the Department of Learning in Engineering Sciences, KTH.

Course responsible and examiner: Linda Barman

Teachers: Arnold Pears, Linda Barman, Lars Geschwind, Stefan Hrastinski, Ernest Ampadu

Participants

5 (current course round), 3 (from previous course round, joined part II), 1 student joined sessions and performed assignment (part II) as part of reading course. Students' previous research experience varied from recently started to past half-time control.

Course structure

10 hp, 2 parts: I Qualitative approaches (fall), II Quantitative/ mixed-method (spring), 11 course meetings, two - four hours mix of on campus/blended/hyflex and remote, and online discussions before and after meetings (part I). Reading of course literature was required before all sessions. Meetings included interactive lectures, seminar discussions and jointly performed activities on-campus/hyflex and/or online. Expert teachers provided examples of own data and research.

Assessment, Grading and Feedback

Pass/Fail graded based on completion of two written assignments (part I and II) including analysis of methods section in one field relevant thesis (I), and formulation of research design and suggested statistical analysis (II). Oral peer and teacher feedback was provided during the obligatory assessment seminar (part I), individual written feedback/feedforward provided on both assignments after course completion.

Student learning outcomes

In tot: 8/8 students gained course credits. 5/5 students enrolled and fulfilled all course requirements, and 3 students joined and completed their part II. 1(/8) student needed to revise part II assign. The depth of the students' analyses varied but overall they demonstrated reflections significant for conducting research. The main challenge seem to be the understanding of how generalisability relates to qualitative research and for some it was hard to formulate quantitative/mixed methods research questions/hypotheses. At the end of the course students expressed uncertainty of how to perform analysis in practice (not surprisingly, and not the focus of the course). It was clear that the students need some understanding of Technology and Learning (the field and related phenomena) to fulfil the course learning outcomes, in particular how methods can be applied to investigate phenomena within this field.

Basis for students' course feedback

Evaluation was made at the end of part I, online with 5/5 students, written online feedback in pairs followed by open discussion together with the teacher. An online anonymized questionnaire was provided at the end of part II (2/8 students gave comments). Due to the limited number of students, KTH's regular course evaluation was not used (hard to anonymise).



Participants' views of the course

Overall, the students expressed positive comments about; what they learned and the course content, structure, assignments and open and friendly course climate including teachers who all shared authentic data/ experiences. They appreciated the mix of lectures, discussions/interaction and activities. Jointly conducted analyses were highly appreciated, e.g. phenomenographic data (part I) and the SPSS-activity (part II). A few students reported that they found the beginning of each part challenging (too fast, too theoretical, too new/different). One student expressed wishes to expand the quantitative part of the course. They also appreciated the recurrent discussion about how research is about making choices (including ethical). Relevant literature, the main course book was OK but not that helpful for all sessions.

Suggestions for development include more scheduled/longer sessions to enable more time for discussions/interaction particularly in part II that only had three course meetings. For students new to Technology and Learning as a field of research, an overview of the field as such (types of phenomena etc.) in the beginning would have been helpful.

Analysis and comments from course responsible

The strategy to mix theory with practical examples of research approaches, methodology and methods for data collection and analysis seemed helpful for students' understanding. The course is a 'smörgåsbord' and so it seemed helpful that a teacher attended all sessions and helped the students connect and compare the different methods. Due to limited time, and sessions that moved online at the last minute (pandemic) the joint and overall connection and comparison of methods was limited, and students were partly left to do this by themselves. Should have been more time to discuss and go deeper into research ethics, at least a 2-hour session. All students participated with engagement and contributed with valuable questions and reflections facilitating each other, however it seemed hard for students without interest to conduct TL-research to understand and reason about methodologies and the application of methods on unfamiliar phenomena. Several doctoral students (not attending the course) expressed interest in joining to learn specific parts of research methods without current, previous or expected future association to research in the area of Technology and Learning (TL) – most of these students never enrolled. Before next round: ensure alignment between literature and sessions - search for updated literature to perhaps replace the main course book.

Changes compared to last course round

Syllabus refined to clarify intended learning outcomes and content, as well as graded assessment and requirements for course completion. Sessions were planned to enable on-campus meetings and avoid student travels during rush-hours (due to the pandemic), therefore most sessions were scheduled 13-15 which gave less time together. Canvas was used for course information and online interaction, and several interactive online tools were applied. Blended and remote sessions in addition to campus/hyflex meetings.

Suggested developments

- Increase time during course meetings to 3 hours to enable more and deeper conversations.
- Add one longer session, at the end of each part to compare approaches and facilitate students' overview and meta-reflections.
- Increase time for the session about research ethics
- Reconsider the main course book (depending on teachers and perspectives)