

Hypothesis, Action and Design, 7,5 ECTS

Hypotes, handling och design, 7,5 hp

Spring 2020

Information about the course:

<https://www.edu.su.se/utbildning/alla-program-och-kurser/2.6944/hypothesis-action-and-design-7-5-ects-1.357561>

Course overview and literature

Course Leaders

Susanne Kreitz-Sandberg (SKS), susanne.kreitz-sandberg@edu.su.se (contact person for reading course)

Max Scheja (MS), max.scheja@edu.su.se

Marianne Teräs (MT), marianne.teras@edu.su.se

Course administrator

Christina Edelbring, forskarutbildning@edu.su.se

Overall aim

The overall aim of the course is to give doctoral students the opportunity to develop their methodological understanding about intervention studies in the field of educational research. In particular, this course will invite students to reflect on different national and international approaches to intervention studies including the complex use of hypotheses in different study designs and how intervention aspects can be seen in relation to data collection procedures. The course will also address the question how interventions can be designed in order to facilitate educational processes and outcomes, thus providing doctoral students with an opportunity to develop their understanding of possibilities and constraints of conducting intervention studies in the context of, for instance, school improvement.

Course content

The course introduces national and international literature that serve to invite reflection on the conditions for designing intervention studies in the field of education. In particular, the course centres on three broad themes:

- 1) interventions and experiments anchored in qualitative and quantitative research paradigms
- 2) interventions in practice (learning studies, lesson studies, action research, design-based research and formative interventions)
- 3) interventions in data collection and data analysis

Course layout

The course is offered this year as a reading course. That means we will meet in one obligatory seminar in the beginning of the course and then you will study the material by yourself. Teachers can be contacted if you have specific questions (see contact person). We have earlier organized central material in seminar sessions. The structure with particular texts of relevance to the thematic strand might also in this years reading course support your understanding. You can however, as this is a reading course, study according to your own preferences. An overview of the different seminar sessions can also be found on Athena.

Time and place

Themes

Tuesday 7th of April, 13-15, Dept of Education, room xxx* / relocated to Zoom

The Department of Education, Stockholm University is located at Frescativägen 54, behind the Swedish National Museum of Natural History (for directions, please see: <http://www.edu.su.se/english/about-us/find-us>)

Week 15

Introduction and overview of course
Theme: Formulating research aims, research questions and hypotheses, ethical considerations in intervention studies **Max Scheja, Marianne Teräs & Susanne Kreitz-Sandberg. In preparation for the seminar session, please read:** Brown, A. (1992). Design Experiments: Theoretical and Methodological Challenges in Creating Complex Interventions in Classroom Settings. *Journal of the Learning Sciences*, 2(2), 141-178, doi: 10.1207/s15327809jls0202_2)

Week 16

Theme: Similar terms, different methods: Intervention studies, lesson studies and learning studies

Zoom seminar (1 hour) can be offered.

Contact: Susanne Kreitz-Sandberg

Bradley A. Ermeling & Genevieve Graff-Ermeling (2014) "Learning to learn from teaching: a first-hand account of lesson study in Japan", *International Journal for Lesson and Learning Studies*, Vol. 3 Issue: 2, pp.170-191, <https://doi.org/10.1108/IJLLS-07-2013-0041>

Pang, M.F. & Ling, L.M. (2012). Learning study: helping teachers to use theory, develop professionally, and produce new knowledge to be shared. *Instructional Science*, 40: 589-606. <https://doi.org/10.1007/s11251-011-9191-4>

Nord, A., Hult, H., Kreitz-Sandberg, S., Herlitz, J., Svensson, L., & Nilsson, L. (2017.) Effect of two additional interventions, test and reflection, added to standard cardiopulmonary resuscitation training on seventh grade students' practical skills and willingness to act: a cluster randomised trial. *BMJ OPEN*, 7, e014230. <http://dx.doi.org/10.1136/bmjopen-2016-014230>

Week 17

Theme: Data collection as an intervention

Contact: Max Scheja.

Scheja, M. & Pettersson, K. (2010). Transformation and contextualisation. Conceptualising students' conceptual understandings of threshold concepts in calculus. *Higher Education*, 59, 221-241. doi: 10.1007/s10734-009-9244-7

Week 18

Theme: Action research, design-based research and formative interventions.

Contact: Marianne Teräs.

Barab, S. 2014. Design-based research: A methodological toolkit for engineering change. In K. Sawyer *The Cambridge handbook of the learning sciences* (s.

151-170). Second edition. Cambridge: Cambridge University Press.

Cohen, Manion, L., & Morrison, K. 2011. Research methods in education (7th ed). Chapter 18: Action research (s. 344-361)

Engeström, Y. (2011). From design experiments to formative interventions. *Theory & Psychology*, 21(5), 598-628. doi:10.1177/0959354311419252)

Week 19-20

Zoom seminar (1 hour) can be offered

Theme: Data analysis and discussion on literature based thus far

Contact: Susanne Kreitz-Sandberg

Kobayashi, S., Berge, M., Grout, B.W.W. et al. (2017). Experiencing variation: learning opportunities in doctoral supervision. *Instructional Science*, 45: 805-826.

<https://doi.org/10.1007/s11251-017-9422-4>

Week 22

Paper due on June 5th.

Examinors: Susanne Kreitz-Sandberg, Max Scheja & Marianne Teräs

Examination and assessment of learning outcomes

The course is assessed through an individual paper in which the doctoral student will be asked to reflect in writing on the various themes brought to the fore in the course. The paper should provide, on the one hand, an overview of the various themes brought to the fore during the course, and on the other hand, offering a critical reflection on these themes. The final paper should be submitted for grading on **5 June 2020** at the latest.

Upon completing the course, the doctoral student will be able to: Demonstrate an overall understanding of the main themes brought to the fore in the course, and critically and coherently reflect on relevant aspects of the theoretical and practical conditions for designing interventions and experiments in educational research. The grades used for assessment of these learning outcomes are G (pass) or U (fail). Students will be notified of their grade within 15 working days, via Athena. Possible re-examinations are submitted upon consultation with the course leaders. Possible re-examinations may only be submitted after consulting the examiners prof. Max Scheja and associate prof. Marianne Teräs or associate prof. Susanne Kreitz-Sandberg.

Plagiarism and self-plagiarism

Needless to say, one is allowed to cite other sources, but both direct and indirect quotes must always be referenced using correct and full references. Copying or extracting shorter or longer sections of text with the intention to present this text as one's own work is prohibited. Such copying without referencing is considered plagiarism. Also, doctoral students are not allowed to cut and paste from previously submitted and graded texts. Re-using identical passages of text cut from previous graded work amounts to self-plagiarism.

Plagiarism is regarded a violation of established ethical regulations. It also involves a moral breach of the general approach towards one's own and others' texts. Plagiarism equals cheating and may provide sufficient ground for suspension from an educational program. All course papers will be checked to ensure their originality.

Course literature

Bradley A. Ermeling & Genevieve Graff-Ermeling (2014) "Learning to learn from teaching: a first-hand account of lesson study in Japan", *International Journal for Lesson and Learning Studies*, Vol. 3 Issue: 2, pp.170-191, <https://doi.org/10.1108/IJLLS-07-2013-0041>

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Engeström, Y. (2011). From design experiments to formative interventions. *Theory & Psychology*, 21(5), 598-628. (30 pages) doi:10.1177/0959354311419252

Kobayashi, S., Berge, M., Grout, B.W.W. et al. (2017). Experiencing variation: learning opportunities in doctoral supervision. *Instructional Science*, 45: 805-826. <https://doi.org/10.1007/s11251-017-9422-4>

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Pang, M.F. & Ling, L.M. (2012). Learning study: helping teachers to use theory, develop professionally, and produce new knowledge to be shared. *Instructional Science*, 40: 589-606. <https://doi.org/10.1007/s11251-011-9191-4>

Scheja, M. & Pettersson, K. (2010). Transformation and contextualisation. Conceptualising students' conceptual understandings of threshold concepts in calculus. *Higher Education*, 59, 221-241. doi: 10.1007/s10734-009-9244-7

Further readings

Engeström, Y. (2007). Putting Vygotsky to work: The change laboratory as an application of double stimulation. In H. Daniels, M. Cole & J. V. Wertsch (Eds.), *The Cambridge companion to Vygotsky* (pp. 363-382). Cambridge: Cambridge University Press. (19 pages) doi: <http://dx.doi.org/10.1017/CCOL0521831040.015>

Thorsten, A. (2015). How teachers' practice knowledge is used and challenged in a Learning Study using Variation Theory as a tool. *International Journal for Lesson and Learning Studies*, Vol. 4 Issue: 3, pp.274-287, <https://doi.org/10.1108/IJLLS-08-2014-0030>

Virkkunen, J. & Newnham D.S. (2013). *The change laboratory. A tool for collaborative development work and education*. Rotterdam: Sense. Chapters 1-3. (approx. 65 pages)