

Hypothesis, Action and Design – Intervention Studies in Education Research, 7,5 ECTS

Hypotes, handling och design – Interventionsstudier i pedagogisk forskning, 7,5 hp

Spring 2024

Information about the [course](#)

Course overview and literature

Course Leaders

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

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

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

Course administrator

Erika Södersten, 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 in the form of six two-hour seminars (13.00-15.00), each seminar offering the opportunity to engage in a focused seminar discussion of the central course themes. In preparation for each seminar session, the doctoral students are expected to have read particular texts of relevance to the thematic strand addressed in this seminar. Such preparation is essential to be able to engage in and benefit from the seminar discussions. The seminars will be organized around the reading material.

The maximum number of course participants is limited to 20. Please find below an overview of the different seminar sessions.

An overview of the different seminar sessions can also be found on Athena.

The course schedule can be found on TimeEdit:

<https://cloud.timeedit.net/su/web/stud1/riq6YQ01088Z68Qy7Q79Z1Q666Z450225Y68Y0gQ50og763XZ7Q5qo.html>

The Department of Education, Stockholm University is located at Frescativägen 54, behind the Swedish National Museum of Natural History (for more information on how to find us, please see: <https://www.su.se/department-of-education/about-the-department/find-us>).

Time and place Themes

Tuesday 9th of April, 13-15, Dept of Education, room 1708

Teachers: *Susanne Kreitz-Sandberg, Marianne Teräs & Max Scheja.*

Week 15

Introduction and overview of course- Intervention studies anchored in qualitative and quantitative research paradigms

Theme: Formulating research aims, research questions and hypotheses, ethical considerations in intervention studies

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, http://dx.doi.org/10.1207/s15327809jls0202_2

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>

Tuesday 16th of April, 13-15, Dept of Education, room 2527

Teacher: Susanne Kreitz-Sandberg.

Week 16

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

In preparation for the seminar session, please read:

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*, 3(2), 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>

Tuesday 23rd of April, 13-15, Dept of Education, room 2527

Teacher: Marianne Teräs.

Week 17

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

In preparation for the seminar session, please read:

Cohen, L., Manion, L., & Morrison, K. (2017). *Research methods in education* (8th ed). Chapter 22: Action research (440-456).

Barab, S. (2014). Design-based research: A methodological toolkit for engineering change. In K. Sawyer *The Cambridge handbook of the learning sciences* (151-170). Second edition. Cambridge: Cambridge University Press.

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

<https://doi.org/10.1177/0959354311419252>

Tuesday 2nd of May, 13-15, Dept of Education, room 2503

Teacher: Max Scheja

Week 18

Theme: Data collection as an intervention

In preparation for the seminar session, please read:

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

Week 19-20

Theme: Work with course paper and discussion in peer groups on 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>

Contact: *Susanne Kreitz-Sandberg*

Tuesday 21st of May, 13-15, Dept of Education, room 2411

Teachers: *Susanne Kreitz-Sandberg, Max Scheja & Marianne Teräs*

Week 21

Theme: Opposition (discussion and feedback) of preliminary papers. Please exchange your texts about 1 week in advance according to agreement on Athena.

Course paper deadline: 5th of June, 2024

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 foregrounded in the course, and on the other hand, offering a critical reflection on these themes. The course assignment should be 2500–5000 words (max) including the list of references. The final paper should be submitted for assessment on **5th of June 2024** 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.

Paper criteria

In their assessment report, the doctoral students will show in the text that they achieved the expected learning outcomes for respective courses. Generally, for all examinations at the doctoral level the doctoral student can

- report, comparatively analyse and critically meta-reflect on the course's main themes and literature in a coherent way,

- argue nuanced and linguistically correctly in line with the requirements and contingency of the academic genre and
- manage accuracy and referencing correctly according to APA or Harvard system.

The examination may vary among courses.

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, associate prof. Susanne Kreitz-Sandberg, prof. Max Scheja and associate prof. Marianne Teräs.

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. The use of text written by another persons or generated with help of artificial intelligence such as ChatGPT and make it appear that it is your own text is not allowed. 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>

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, http://doi:10.1207/s15327809jls0202_2

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, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed). Chapter 18: Action research (s. 344-361).

Engeström, Y. (2011). From design experiments to formative interventions. *Theory & Psychology*, 21(5), 598-628. (30 pages) <https://dx.doi.org/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>

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>

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. <https://dx.doi.org/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)

Some new literature may be recommended close to the course, see Athena.