

# Shaping education for sustainable development cooperatively

## Topic

Development & evaluation of a virtual cooperative university seminar on Education for Sustainable Development for student teachers.

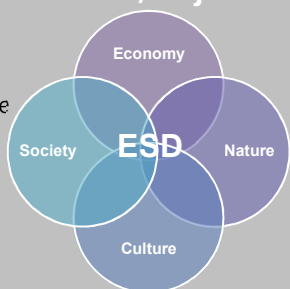
Investigation of the influence of the participant composition (disciplinary versus interdisciplinary) on the effectiveness of the seminar event.

## Initial situation, objectives & framework conditions

**Education for Sustainable Development (ESD)** describes an education, that enables people to think & act in the sense of sustainable development.

(Stoltenberg, 2017, S. 1.)

**ESD** is not a new subject, but should be treated as a **cross-cutting theme** from all subjects. (Schreiber/Siege 2017)



**ESD is an education policy programme of UN & UNESCO**

- UNESCO World Programme & Agenda 2030
- UN Sustainable Development Goals (SDGs)
- In Germany: National Action Plan on ESD

→ Goal: Structural anchoring of ESD at all levels of education.

(UNESCO 2014)

**Teachers** are seen as **multipliers for ESD**

→ Demand: Integration of ESD in teacher training & further education (UNESCO 2014)

## Theoretical background

The **integration of complex sustainability topics in the classroom**, such as climate change, consumer behaviour or energy supply, requires a multi-perspective & systemic view that looks beyond the subject itself.. (Haan, 2008)

**ESD competence models for teacher education** assign central importance to teacher cooperation in the implementation of complex sustainability topics in the classroom.

(Rauch et al. 2008; Stoltenberg et al., 2014)

**Arguments for collegial cooperation in ESD:**

- Complexity of ESD topics transcends subject boundaries
- Synergy effects & deeper subject understanding through multi-perspectivity
- Increased quality & reduced workload through bundling of competences

(Rieß 2013; Steiner 2011)

**Discrepancy:** Teachers support collegial cooperation in principle, but intensive cooperation hardly ever takes place in practice. (Richter/Pant 2016)

**Conditions for successful cooperation:**

- Common goals & tasks
- Autonomy
- Trust
- Communication
- Norm of reciprocity
- Space & Time (Ahlgren et al. 2012; Ahldorf 2015)

## Interest & research questions

**Descriptive level:** Comparison of the qualities of a disciplinary & an interdisciplinary cooperation of student teachers in a virtual university seminar to promote competences for the implementation of ESD in later subject teaching.

**RQ1: What acceptance do the students express with regard to...**

- ...the preparation of ESD in the seminar?
- ...the personal significance of ESD?
- ...the importance of ESD for the classroom?
- ...the importance of cooperative lesson planning in ESD?

RQ1 pursues a **scientific evaluation**.



**RQ2: What influence does the composition of the students' disciplinary (group A: physics students) & interdisciplinary (group B: student teachers of different subjects) subjects have on their assessment of whether a given lesson plan is suitable for implementing ESD?**

RQ2 pursues a research concern with the aim of **generating hypotheses** based on an example.

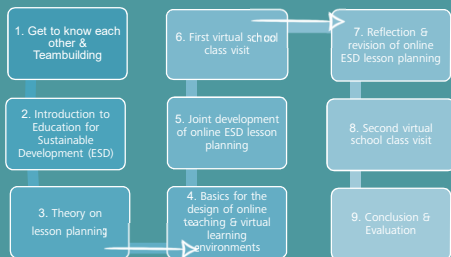
**Aim: To generate hypotheses for effective ESD seminar formats to integrate ESD in teacher education.**

## Study design

- **Qualitative comparison group design** with two levels: Measuring change at the individual level & finding differences at the group level.
- **Variation in the groups:** Group A: Physics students & Group B: Teacher trainees from different subjects.
- **Group size:** 5-10 students per group

- **Implementation:** 2020: Group A & 2021: Group B
- **Seminar content:** Cooperative planning, implementation & reflection of an online ESD lesson on the topic "Online shopping & its impact on climate change".

### Seminar schedule:



### Survey instruments :



- **Questionnaire before & after seminar** → Gathering information on experiences & attitudes towards ESD & cooperation
- **Evaluation of a given ESD lesson plan before & after seminar participation** → Capture students' existing cognitions about ESD lesson planning.
- **Qualitative guided interviews after seminar participation** → Capturing the acceptance of the seminar & the perception of the cooperation process & subjective theories on ESD & cooperation

### Type of data collected:

### Implementation of virtual cooperation:

- Course sessions via video conferencing (zoom)
- Lesson development with an online collaborative whiteboard (miro)

### Evaluation method:

- Qualitative content analysis (QI)
- Form of QI: Content-structuring & Category type: Thematic categories.
- Category Formation: A-priori categories, from the work assignment to evaluate the lesson planning & the interview guide; supplemented by category formation on the material.

(Kuckartz 2018)

**Literature:** Ahlgren, F./Krey, J. et al. Kooperation – was ist das? Implications of different understandings of the term. In: Huber, Ahlgren (eds.). Kooperation. Münster 2012, p. 17-30 // Aldorf, A.: Lehrkooperation und die Effektivität von Lehrerfortbildung. Freiburg 2015. // Haan, G./Bormann, I.: Kompetenzen der Bildung für nachhaltige Entwicklung. Operationalisation, Measurement, Frameworks, Findings. Wiesbaden 2008. // Kuckartz, U.: Qualitative Inhaltsanalyse. Methods, practice, computer support. Weinheim, Basel 2018. // Rauch et al.: Competencies for Education for Sustainable Development (KOM-BINE). Concepts and suggestions for practice. Vienna 2008 // Richter, D./Pant, H. A.: Lehrkooperation in Deutschland. A study on cooperative working relationships among teachers at lower secondary level. Vienna 2016. // Rieß, W.: Bildung für nachhaltige Entwicklung (BNE) und Förderung des systemischen Denkens. ConcernNature (35). 2013, p. 55-64 // Schreiber, J.: Orientierungsrahmen für den Lernbereich Globale Entwicklung. Abridged version. Bonn 2017. // Steiner, R.: Competence-oriented Teacher Education for Education for Sustainable Development. Competency model, case studies and recommendations. Münster 2011. // Stoltenberg, Ute et al.: Research on Teacher Education for Sustainable Development. A position paper on the design of research programmes in Germany, Austria and Switzerland. Hg. v. LeNa - Deutschsprachigen Netzwerk LeNa - LehrerInnenbildung für eine nachhaltige Entwicklung. Lüneburg 2014. // UNESCO: UNESCO Roadmap for the Implementation of the World Programme of Action "Education for Sustainable Development". Bonn: German Commission for UNESCO. Bonn 2014.

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