

## **Abstract**

The world today faces major environmental and social challenges that have an impact on society's future, locally and globally. Therefore it will be of great importance to educate students with necessary competences and a willingness to contribute to a sustainable future. The question is how we can achieve this appropriately through education.

There is a limited amount of empirical research on the interaction between education for sustainable development (ESD) and the use of outdoor learning and the local environment as a learning arena. The existing theory, however, points out that the potential in using authentic and concrete issues in the students' local environment can provide opportunities for meaningful learning in complex topics such as sustainable development.

Since the ESD implementation varies between countries and there are large differences in outdoor education practice, there is a need for research examining the educational practice in a Norwegian context.

The main aim of this thesis was to examine how use of the local environment as a learning arena can contribute to realize ESD. The thesis includes three articles that address specific parts of the ESD-issues, and a mantle, which describes the research field, explains methods, ethical considerations and provides a comprehensive discussion of findings from the articles.

The methodological approach was a triangulation of methods, which illuminate the theme from different perspectives. Two different data collections were conducted. First, interviews with eight teachers experienced in ESD, teaching 6th to 9th grade. Then a case study in a 5th grade where a local environmental challenge was the topic of the ESD project.

The first article is a study of methodology examining how a research approach can contribute to knowledge production based on practice within a new focus area in school. The article discusses an application of constructivist grounded theory on data from interviews with teachers experienced in ESD. A thorough description of the specific analysis and a discussion of dilemmas that arise is given.

The second article examines teachers' reflections from using the local environment as a learning arena in ESD (6th-9th grade). Results from analysis of the semi-structured interviews showed that the teachers experienced challenges with the complexity of sustainable development and vague requirements in the curriculum. In the results, there are

also many reflections and arguments concerning the use of the local environment as a learning arena in ESD, and these were mainly within four categories: 1) exemplification of various perspectives of sustainable development, 2) authentic and concrete learning, 3) opportunity for action, and 4) affective influences.

The third article describes and discusses how students in a specific educational project explored an environmental conflict in the local area and how the learning outcomes contributed to develop competences for sustainable development. The case study was conducted in collaboration with a primary school, where 5th grade explored an environmental conflict focusing on biodiversity, vulnerable species habitats, land use and climate change. The students had significantly more knowledge about ecology and current environmental challenges after having completed the project. However, the most striking outcome of the study was the involvement and engagement of the students. They used their contextual knowledge and emerging understanding of systems when exercising critical thinking based on conflicts of interest in the current environmental challenge.

This thesis provides new knowledge in the field of practicing and exploring ESD in Norwegian primary and lower secondary school. The main focus has been the context with the local environment as the learning arena for ESD. The thesis also provides a methodological contribution to evaluate practice-based research, and demonstrate the need of a closer contact between policy guidelines, theory and practice in ESD.

**Keywords:** education for sustainable development (ESD), outdoor learning, local environment, practice-based research, constructivist grounded theory, case study.