

The implementation of school-community-projects and the effects on students' sustainability consciousness

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1. Background of the study

In Europe, the development of science disengagement among students in secondary education is an often-seen phenomenon (Howard, 2017; Osborne & Dillon, 2008; Sjøberg & Schreiner, 2019). As many European countries already experience a shortage of specialists in scientific oriented disciplines, it is important to get people motivated to pursue a career in science to keep up with the rapid growth of the science sector (Archer et al., 2013; STEM Alliance, 2017). Furthermore, societies face complex science-related problems, such as global warming, floods, droughts, and water and air pollution. As these problems, also known as Socio-Scientific Issues (SSIs), are becoming more and more present in our society, it is important to give attention to these issues in the classroom. This enables students to develop their civic competences, such as science-informed decision making (Zeidler & Nichols, 2009) and therefore become better prepared to face these problems in their future (Ariza et al., 2021).

One of the initiatives that helps to bring real-life problems such as SSIs into the classroom are School-Community-Projects (SCPs). The goal of an SCP is to establish partnerships between schools and their community, whereby relevant SSIs for the community are the subject of the project. Students are asked to use project-based working methods to find a solution to a yet unresolved chosen SSI by working together with members of the community and other stakeholders to give students a better understanding of the application of science in society and motivate them to engage in science (ICSE, n.d.).

SCPs are also expected to change students' sustainability consciousness (SC). SC is an individual's awareness and understanding of the principles and practices associated with sustainable development, whereby environmental, societal, and economic dimensions are considered (Gericke et al., 2019). It is known that SC dips during adolescence (Olsson & Gericke, 2016), making it important to search for effective adaptations in sustainability education such as SCPs to meet the needs of students.

As implementing an SCP in a school structure asks for a change in the curriculum and requires effort from the people involved, it is valuable to identify supportive elements for the implementation of such a project for long term use.

For example, involving and maintaining contact with all (external) community members and stakeholders can be challenging for (internal) school members (such as teachers and school leaders) that are involved in the project (Mathie & Wals, 2022) and therefore asks for attention. Furthermore, the development of students' SC through SCP is not known yet and can therefore be investigated.

2. Relation to the conference theme and dimension

As School-Community-Projects are based on open schooling approaches and are built around environmental issues, this research is suitable to fit the overall theme of this conference. The findings on the research questions are helpful for teachers and other school members that want to implement and sustain open schooling approaches in their curriculum. In addition, similar projects arising and searching for a long-term impact will benefit from the outcomes of this specific research. Therefore, the findings are mostly related to dimension 3, the structural dimension. The topic is addressed from the perspective of the internal school members and external stakeholders involved.

3. Set up of the study

The research questions of this study were:

1. What factors are important for the school organization and the community when implementing a School-Community-Project about energy management in the long term?
2. How does a School-Community-Project about sustainability affect 15-to-17-year-old students' sustainability consciousness?

To conduct the study, an SCP for approximately twenty 15-to-17-year-old pre-university students was designed. Besides students, other participants of the project were external stakeholders from the neighbourhood (such as from businesses or governments), and internal school members (such as teachers, and school leaders). To define the support that was needed for the participants to join the project, questionnaires were designed and filled in by the participants after the project. To measure students' SC, a pre- and post-questionnaire was used and a semi-structured group interview was set up, in which four students participated.

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