OPEN SCIENCE SCHOOLING

Fostering re-engagement in science learning through open science schooling

Erasmus+ 2017-20 (30 months)

Coordinator: University of East Finland (UEF)

http://openscienceschooling.eu/

"Encourage "open schooling" where schools, in cooperation with other stakeholders, become an agent of community well-being; families are encouraged to become real partners in school life and activities; professionals from enterprise, civil and wider society are actively involved in bringing real-life projects into the classroom."

COMMISSION 2015, SCIENCE EDUCATION FOR RESPONSIBLE CITIZENSHIP

PROJECT SUMMARY

Students in secondary school develop resistance towards science learning and science careers. The Commission considers this one of the most important challenges to innovation and economic growth in EU.

State of the art research and key global stakeholders, such as the OECD and the EU Commission, jointly agree that the disengagement in science takes place in secondary school and typically when the students are from 12 to 15 years old, indicating that science resistance is strongly linked to the development of the students' identify and personality.

The Commission calls for the development of new science learning didactics, based on an Open Schooling approach, in which science learning processes are strongly linked to the students' participation in real-life science challenges in society and to participation in real research and innovation circles.

The project approach includes the following **INNOVATIONS** (basic Open Science Schooling didactics):

- → engages students in **REAL-LIFE** science challenges in the society
- → engages schools and students in practical science collaboration with resources in the **COMMUNITY**, including research, science, innovation and social resources and stakeholders
- → offers students direct participation in epic, immersive and exciting **MISSIONS**
- → invites **CROSS-SUBJECT** and cross-class approaches
- → offers students with different **LEARNING STYLES** a variety of practice oriented work forms very different from traditional theoretical and laboratory-based science teaching, also benefitting less academic learners
- → provides students with the opportunity and resources to develop a different **IMAGE** of what science is and what science could be for them, linking in much more narrative ways to the identity and personality of the young students

Open Science Schooling is almost exclusively a theory, a concept used in research and policy-making. This makes it very difficult for secondary schools and science teachers across EU to engage in practical experimentation.
EU needs to produce practical experience with Open Science Schooling and needs to offer secondary schools and science teachers across Europe PRACTICALLY USEFUL GUIDELINES on how to engage in Open Science Schooling.

The Open Science Schooling project is one of the first systematic contributions in Europe to the development of such resources. The mission of the project is to develop and produce Open Science Schooling guidelines through practical experimentation and through the co-creation of secondary school students.

The project will work closely with science teacher and student teams from the participating schools and the final results will be based on the authentic involvement of these players.

The project will do this through implementing the Open Science Schooling agenda, consisting in **5 didactic challenges**.

The project outcomes are precisely missioned to give useful answers to these questions:

1. UNDERSTANDING

What is Open Science Schooling?

2. INTEGRATION

How can Open Science Schooling be integrated in secondary schools?

3. PRACTICE

How can Open Science Schooling be practiced in real-life and in collaboration with the community?

4. EVALUATION

How can the students' engagement and achievements be evaluated and documented?

5. ECO-SYSTEMS

How can the students' Open Science Schooling engagement lead to the creation of local open science schooling eco-systems?

KEY OUTCOMES OF THE PROJECT

A GUIDE TO OPEN SCIENCE SCHOOLING IN SECONDARY SCHOOLS

Practically useful guidance taking schools and teachers through the different steps in OSS, offering practical examples and giving useful advice - presented attractively in open virtual formats and in a variety of media forms

OPEN SCIENCE SCHOOLING – THE MOVIE

The narrative and visual presentation of the student teams' 12 months real-life science engagement and how this experience affected them – co-created by the young teams

YOUNG CO-CREATORS

The young students' personal documentation of their involvement in the project, in the local open science schooling activities and in the co-creation of results

INTEGRATING OSS IN SECONDARY SCHOOLS – POLICY RECOMMENDATIONS

Recommendations for policy-makers on how to support the full integration of open science schooling, including recommendations for further research, experimentation and practical testing

PARTNERSHIP

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