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The Role of Open Schooling in Community Efforts to Influence Change in Water Consumption and Perception

Clean Water

PURPOSE

To increase, through an open schooling project, scientific understanding of water management and sustainable use and debunk common myths and fake news, encouraging good habits to protect water resources and safeguard the environment.

CLEAN WATER

Clean freshwater is essential to human health and well-being. Considering water drinking habits, many prefer bottled water to tap water, with a high environmental impact in terms of production of waste.
Italians are the largest consumers of bottled water in Europe, despite the fact that tap water is checked every day, is safe to drink and usually tastes good.

TEACHING & LEARNING SEQUENCE

Phase 1 - Identification and Exploration of Socioscientific Issue

Design of the teaching and learning activities in cooperation with relevant stakeholders: water industry experts, schools and other community actors.

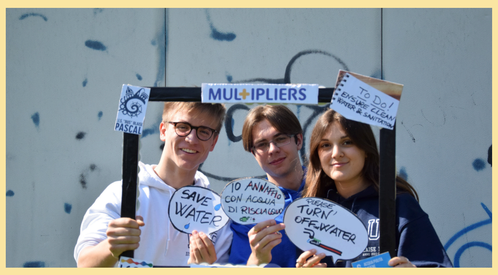
Phase 2 - Engagement in the Open School Science Learning Projects

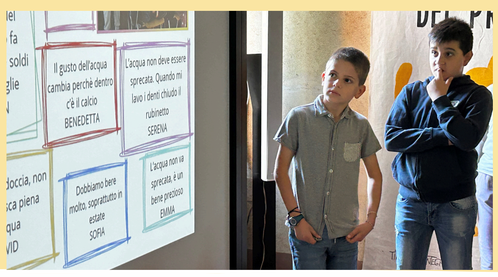
Presentation of local water management: processes and facilities, on-site visits, lab activities.
Debate “Tap Water vs Bottled Water”.
Authentic learning task “Your home vs school water”.
History research on local water systems and uses.

Phase 3: Knowledge Multipliers

Training activities managed by students and addressed to different age and target groups.
Dissemination activities and laboratories within school open days, science fairs and other events addressed to families and the general community.

OPEN SCHOOLING ACTIVITIES & EVENTS





FINDINGS

Students’ interest was fostered by lab experiments, offering alternative methods to the traditional approaches.
Meeting experts allowed insights into jobs for orientation and possible career paths.
The project was closely linked to everyday lives and had a positive impact on awareness and drinking habits.
The student-to-teacher role exchange for science students proved successful both for teachers and learners.
For experts, meeting students and being able to act as teachers had an important motivational function.

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This project has received funding from the European Union’s Horizon 2020 Research and Innovation Programme under Grant Agreement No. 101006255.

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The Role of Open Schooling in Communicating about Forests and their Ecosystem Services

Forest use vs. forest protection

PURPOSE

- To sensitise students to the multitude of forest ecosystem services important for society
- To understand the challenges of meeting the needs of a wide range of interest groups

OUTDOOR CLASSROOMS

Given guidance, pupils can experience forests first-hand and observe trees closely. They can gain an understanding of why and how some forests are managed, why biodiversity in forest ecosystems is important, and how to come to solutions that reconcile people's multiple demands on forests — such as providing raw material for wood products, serve as places for human recreation, and as a home for plants and animals.

TEACHING & LEARNING SEQUENCE

Phase 1 - Identification and Exploration of Socioscientific Issue

Through presentations and role-playing activities, students are introduced to forest ecosystems and their services. They are familiarized with the work of forest and conservation managers and with forest owners, as often a considerable share of forested lands belongs to private individuals.

Phase 2 - Engagement in Open School Science Learning Projects

Students visit an outdoor learning site or "marteloscope", which is a delineated forest area where data has been recorded for all standing trees. The data is made available to students via an innovative, easy-to-use, educational programme running on mobile devices, the I+ software. Given a task or role (e.g. forest owner, nature conservation manager), students will make virtual management decisions as a way to hone their digital and problem-solving skills. Students then communicate their results, discuss and explain them to one another.

Phase 3: Knowledge Multipliers

In a further visit to the marteloscope, students act as multipliers by communicating their gained knowledge to their families, friends or other people.

OPEN SCHOOLING ACTIVITIES AND EVENTS

FINDINGS

Open Schooling in outdoor forest settings can:

- Sensitize students to the role of forests and their importance to us as individuals and to society
- Help students to better understand and experience complex decision-making processes when it comes to forests
- Make students eager to observe, learn and share the knowledge they gained with others around them, fostering collaboration, civic responsibility, and critical thinking

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This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 101006255.

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The Role of Open Schooling in Community Efforts to Promote Consensus on Questions About Forest Use

Forest use vs. forest protection

PURPOSE

To facilitate meetings between students and stakeholders with an interest in questions about forest use as an important part of students' understanding of different perspectives to consider in consensus discussions about cases of forest exploitation.

FOREST USE VS. FOREST PROTECTION

Forest use and protection are relevant issues to many Swedes who use it for recreational activities and family forestry. This complex issue involves trade-offs between managing production forests and preserving ecosystem services and biodiversity. The debates are often polarized in media and by involving stakeholders from different perspectives, the students can develop an understanding useful for consensus discussions.

TEACHING & LEARNING SEQUENCE

Phase 1 - Identification and Exploration of Socioscientific Issue

Different stakeholders were invited to collaborate around the theme and create teaching and learning activities for use with students working on the theme.

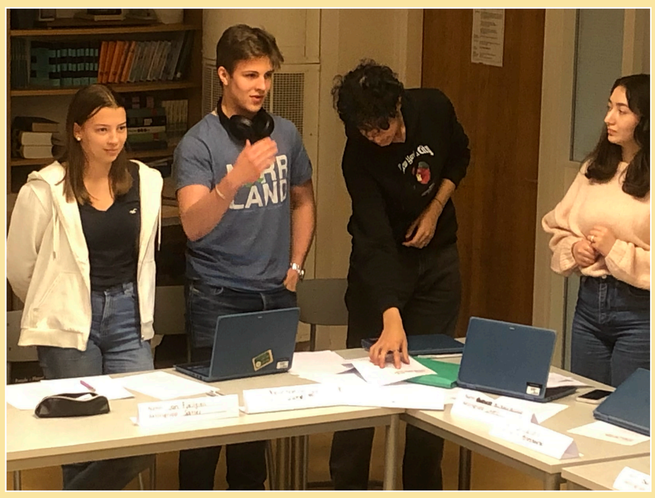
Phase 2 - Engagement in the Open School Science Learning Projects

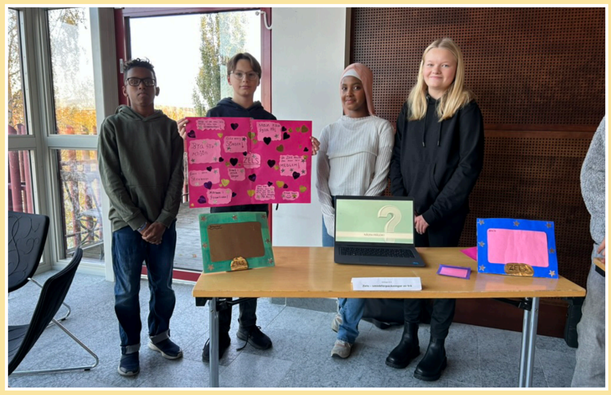
The theme was used in three rounds of open school learning projects in secondary school and upper primary school. The activities included meetings with experts, online learning materials, visits to forests, interviews with people from three generations, polling in the community, and debates/discussions.

Phase 3: Knowledge Multipliers

The students acted as knowledge multipliers through different communication efforts. While secondary school students discussed their new knowledge with families, the primary school students spread their knowledge in a fair as well as by presenting it to younger students at their school.

OPEN SCHOOLING ACTIVITIES AND EVENTS





FINDINGS

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This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 101006255.

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The Role of Open Schooling in Community Efforts to Promote Consensus on Questions About Forest Use

Vaccination

PURPOSE

To engage secondary school students in exploring the topic of vaccination in order to:

- increase their interest and engagement with this complex socio-scientific issue
- foster their argumentation and critical thinking skills

VACCINATION

Vaccination has been a remarkable public health achievement, preventing numerous life-threatening diseases and improving global health outcomes. However, the rapid development of vaccines (e.g. COVID-19) intensified public debate about vaccine efficacy, safety, and potential side effects. This controversy highlights the need for both: scientific education and addressing emotional concerns related to vaccination.

TEACHING & LEARNING SEQUENCE

Phase 1 - Identification and Exploration of Socioscientific Issue

This phase centered on teachers and students needs. Scientists from biology and medicine and ethics experts were also involved in the planning from the very begining.

Phase 2 - Engagement in the Open School Science Learning Projects

As part of a three-day program, the students met various scientific experts at different career stages. They conducted experiments in the laboratories of different research institutions and participated in discussions during a mock citizens' assembly on the introduction of a general COVID-19 vaccination mandate.

Phase 3: Knowledge Multipliers

ATo share their experiences and findings, one group of students created vaccination podcasts for their peers. Another group while developed a lesson plan and an explanatory video to teach younger students about vaccination.

OPEN SCHOOLING ACTIVITIES AND EVENTS

ACTIVE SCIENCE LEARNING

MEETING EXPERTS

ETHICAL DISCUSSIONS

EXPOSURE TO DIFFERENT WORKPLACES

STUDENTS ACTING AS MULTIPLIERS

FINDINGS

Four key success factors significantly contributed to developing student interest and engagement as well as their understanding in the topic of vaccination: Meeting Experts, Exposure to Different Workplaces, Active Science Learning, and the Inclusion of Ethical Aspects.

Collaborative planning emerged as success factor in the development of open-schooling activities and in fostering long-term cooperation among different experts.

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This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 101006255.

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