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MOST
Meaningful Open Schooling Connects Schools To Communities

Manual to plan and perform SCP

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Executive Summary

The Open Schooling approach leads to a sustainable networking system between schools and their communities. Open Schooling intends that private individuals, schools, companies, and associations work together on eye-height to find strategies to overcome current environmental and social problems. The collaborative work leads to a broader understanding of scientific processes and intends to promote the scientific knowledge and transversal skills of society in the long term.
This document aims at educators who are willing to carry out Opens Schooling projects with their students. The manual has been developed within the framework of the EU-funded project MOST (Meaningful Open Schooling Connects Schools to Communities) and has been tested by a number of international partners. One of the main attributes of Open Schooling projects is the collaboration between schools and communities; this is why the single projects are known as School-Community projects (SCP). The manual describes important steps that should be taken into account by SCP leaders when carrying out a school community project. It creates a framework for a school-community project and helps with the question of which teacher, which classes and students are possible participants in such a project, and how to come up with an appealing, socially relevant topic that affects the region itself. The manual relates to the 'Pedagogical guidelines and exemplary science materials' produced by the Norwegian partners in WP4 of the MOST project.

The objective of this document is to provide an insight into the overall structure of a school community project. The sequence of work steps to be followed are explained using the INCREASE-Trail Map (fig. 1) – a guide that provides assistance in implementing SCPs in a way, that has already proven to be successful in other Open Schooling projects. To illustrate single steps, the manual mentions best practice examples from a previous Open Schooling project, called Meaningful Open Schooling Connects Schools to Communities (MOST). In addition the manual provides a short version, which can be found on the next page.
The document works with concrete examples arised from the EU funded project "Meaningful Open Schooling Connects Schools to Communities" (MOST). The examples were collected via interviews with the consortium partners, held by the Austrian partner. In the following, they are marked with a *Example*-flag.

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Everything at a glance - A short guide for Open Schooling projects for teacher

School is often stressful; there is a lot to do, class preparation, corrections and more. To support you we have summarized the content of the manual "to plan and perform SCP" on two pages. Further explanation on the single steps as well as best practice examples can be found in the main part of this document (The INCREASE -Trail Map for School Community Projects).

Why Open Schooling?

Open Schooling (OS) is about “breaking down the barrier between the school and what takes place in the real world.” (SCP leader from Norway). The Open Schooling approach invites students to work on current environmental issues together with stakeholders coming from hands on experience. The core of OS is the collaboration between schools and communities; this is why the single projects are known as School-Community projects (SCP).

The frame of the project

Before the start of the actual project it is crucial to talk about the idea of carrying out an Open Schooling project with the headmaster and the involved students. Further, it is helpful to define an appropriate timeframe of the SCP. As it is a bottom up approach, projects are more creative, innovative and successful, if the students are free in their decision of the topic. There is also the possibility to connect the SCP with the curriculum. The INCREASE-Trail map provides further information to carry out SCPs successfully.

INCREASE -5-steps to success

The path to the results of an SCP is seldom a straight one; rather it meanders through the various phases of a project. In order to be able to follow the process successfully, we recommend orienting yourself to the 5 phases of a project.

(Fig. 1: INCREASE-Trail Map, own illustration)

INVITE

After the students decided on a rough topic or initial ideas for the SCP, the search for possible stakeholders begins. As a teacher, you can now support your students by providing contacts. Invite other community members or people relevant to your topic. To get in contact it is advisable to make phone calls to get in a conversation, where students can present their idea. Invite as much interested stakeholder as possible to bundle common interests. If the students need help in starting a conversation, it is recommendable to provide support.

CO-**CRE**ATE

Co-creation enables specialists and experts to **cooperate** with other groups with whom an exchange normally does not take place. Co-creation processes help to find a **topic**, and similar **interests** of the participants become visible, from which **project groups** can be derived. A selection of methodological approaches to facilitate the process can be found in the Co-creation Navigator (https://ccn.waag.org).

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ACT

This step marks the start of the visible part of a SCP and makes it clear to what extent the previous steps were successful. It is recommended to implement the following steps to reach the objectives of the project and generate success. Best practice examples from the MOST project can be found here.

Define the objectives:	**Responsibility:**	**Keep in touch:**	**Timeframe:**	**Risks and mitigation:**
What are you aiming for with the project?	Share responsibilities by assigning individual members of the project team a role that suits them	regular project meetings support the exchange	Set a timeline – a list of milestones helps the students to orientate themselves in the project	Talk about stumbling blocks and how to overcome these

SHARE

Since this is a school community project, whose results reach out into the neighborhood and can be interesting for a broad community, it is advisable to present the completed projects to the community. Therefor there are various options, starting with a science fair, organised by the students, presentations via poster, using internal communication channels in school, provide videos on social media platforms or working together with local newspaper/radio station.

EVALUATE

Since it should be part of every scientific process, it is recommended to evaluate the SCP. It is useful to see whether the project was successful or the approach needs some adjustments. Further it is helpful to receive feedback from the students learning process. A short evaluation is possible through a short feedback talk with the students. Questions should be formulated concretely and wide so that the pupils can talk openly about their experiences in the project.

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1. Introduction

Open Schooling (OS) provides the possibility to overcome barriers between schools and the "real world". It offers an opportunity to start activities, realising the opportunity to work on an equal footing with different stakeholders of the community in the field of socio-scientific issues. This manual aims to support head teachers, teachers, and other educators in carrying out innovative activities that bring schools and society closer together.

It will give an overview of the implementation of the Open Schooling approach suggesting necessary steps schools and SCP leaders will need to take into account while implementing school community projects (SCP) together with stakeholders in their area and to come up with regionally feasible solutions. SCP leader, advisor and teacher from the MOST project (2020-2023) were asked to answer the question: "What is Open Schooling for you?" Below, you can see the results:

What is a SCP?

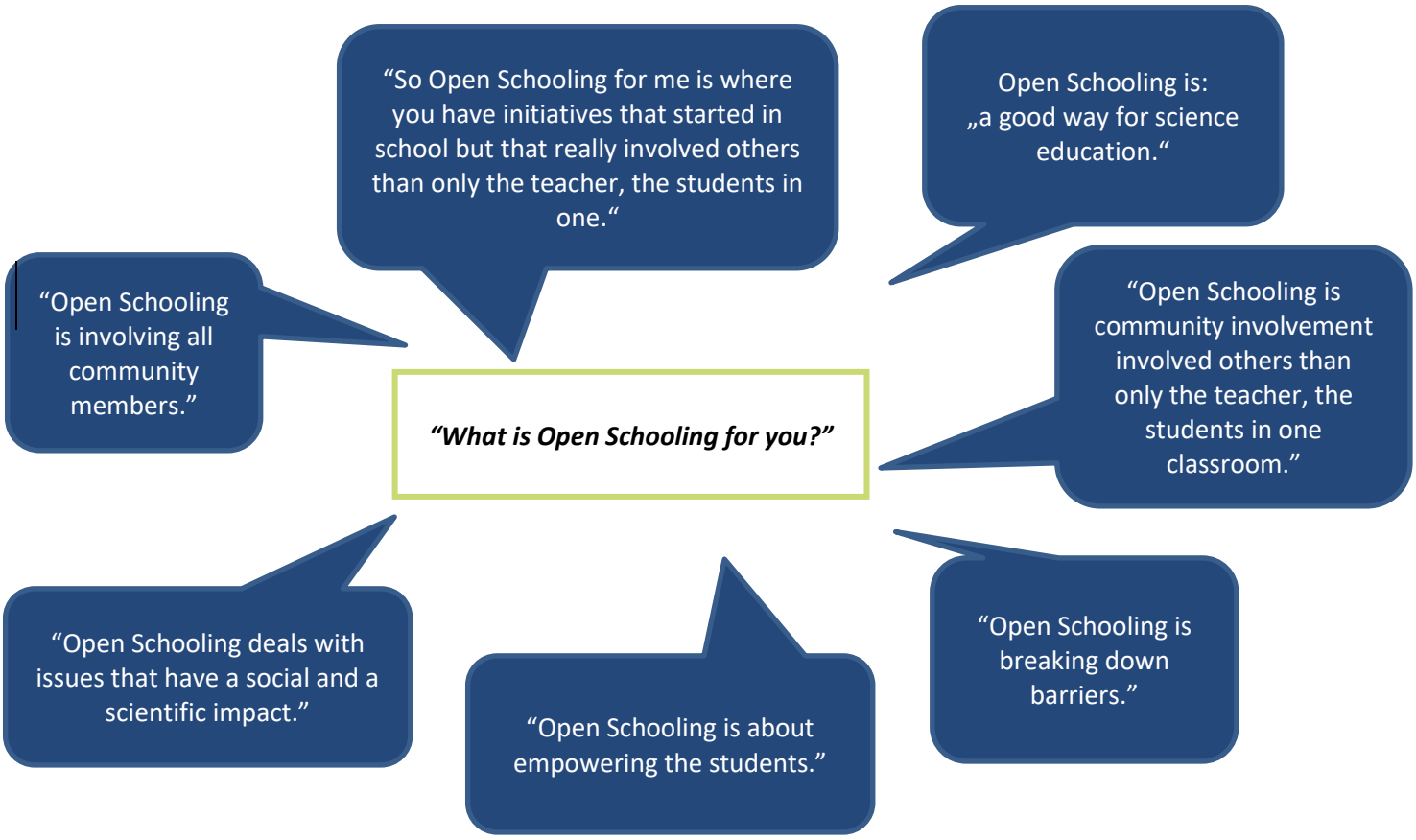

Fig.2: "What is Open Schooling for you?" A election of answers from the MOST Consortium

Working together based on a bottom-up solution and on eye-height leads to a sustainable networking of schools and communities. Innovative approaches suggest developing solution strategies for current socio-environmental problems together as a joint venture of private individuals, companies, and associations. The collaborative work is expected to lead to a broader understanding of scientific, social, and economic processes and is intended to promote the scientific knowledge and transversal skills of society in the long run. In this way, the EU aims to remain competitive worldwide in the competition for jobs in science and to face global challenges more successfully. Especially in areas that have an

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impact on the everyday life of society, a space in which exchange and inclusion takes place is extremely beneficial. One promising approach that brings scientific processes and procedures closer to society is Open Schooling:

> *"Open Science Schooling is finding real science in the community through students' involvement into local practical activities outside school and bringing the acquired knowledge back to school. Through this, students get a better understanding of how science is applied in real life."*
> (https://opensciencesschooling.eu/about/)

By opening up school education and involving society in scientific processes and innovations, a link is created that takes people's needs and ambitions into account.
In the long run, Open Schooling processes and school community projects should ensure that Europe remains competitive in technological competition. A large number of European countries already have a shortage of skilled workers. What is also striking is the proportion of female skilled workers, which is just 15%. This quota is to be increased significantly to profitably use the social and ecological opportunities that result from an equal distribution of the sexes.

As all participants contribute their knowledge and skills to the project, they don´t learn just from and about each other but also expand their (natural) scientific knowledge and transversal skills (teamwork, strategic and innovative thinking, time management, etc.). The aim is to arouse interest in the natural sciences and scientific work in all participants. In the long term, this will lead to more students in Europe embarking on a scientific career in the future - a goal that, given the advancing technical developments and global environmental challenges are of great concern to the EU.
(c.f. https://icse.ph-freiburg.de/freiburgprotectstheplanet/ueber-das-projekt-most/, 04.02.21)

The Open Schooling approach covers a 5-step process aiming to engage stakeholders in co-creation activities and to design and implement joint projects. Schools are expected to share their knowledge and experience and contribute to building a network of open schools in the region. Activities should be evaluated to improve knowledge and skills for future engagement.

2. The INCREASE -Trail Map for School Community Projects

2.1. Why do School Community Projects (SCP) increase the quality of teaching and learning?

In various debates on current topics, it is visible that science and society have drifted apart. There are several reasons for this; the most striking is a lack of understanding predicated on a lack of exchange among each other. The core of the problem is that people have difficulties relating the processes and innovations of scientists to their everyday lives.
Humanity is facing considerable global challenges that need to be tackled now. Current and future generations will need to propose innovative solutions for problems, which have been created in the past and are still created in the present. To address these challenges and to change traditional ways of thinking and acting, innovative and collaborative strategies are required. Individuals, single institutions, or single governments cannot address these challenges alone. They demand collaborative action amongst stakeholders and longterm transversal partnerships as well as interdisciplinary cooperation's between brave citizens who are willing to tackle the challenges of the 21st century. Open

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Schooling therefor provides the stage to learn on transversal and social competences, which are needed to overcome these challenges. The possibility to learn from and with each other can be seen as a possible key to social transformation. To realize this, schools need to be transformed to local hubs of learning, from which innovative and cooperative processes arise and which create learning environments that inspire young people to exploit their full potential.
Responsible research and innovation (RRI)[1] implies that societal actors (researchers, citizens, policymakers, business, third sector organizations, etc.) work together during the whole research and innovation process to better align both; the process and its outcomes with the values, needs, and, expectations of society. School Community projects integrate actions to foster the uptake of the RRI approach and provide a learning space for all stakeholders involved.
An intensive insight into research and science at school age is beneficial for all students, not only those interested in STEM subjects in general. School community projects starting by opening up the participating school to the community including researchers and scientists.
Open schools are places where people meet, where experts share their knowledge, where individuals act jointly and reach a shared goal. "*OS […] is where you have initiatives that started in school but that really involved others than only the teacher, the students in one classroom*." (MOST advisor from the Netherlands). Such a learning environment supports students as well as teachers to engage in real-life activities that are relevant for the local community, the city, or region. Students will experience that their work impacts societal development, teachers will become change agents, and schools will transform into platforms for inspiration and change.

In general, the school community project idea is predicated on four assumptions:

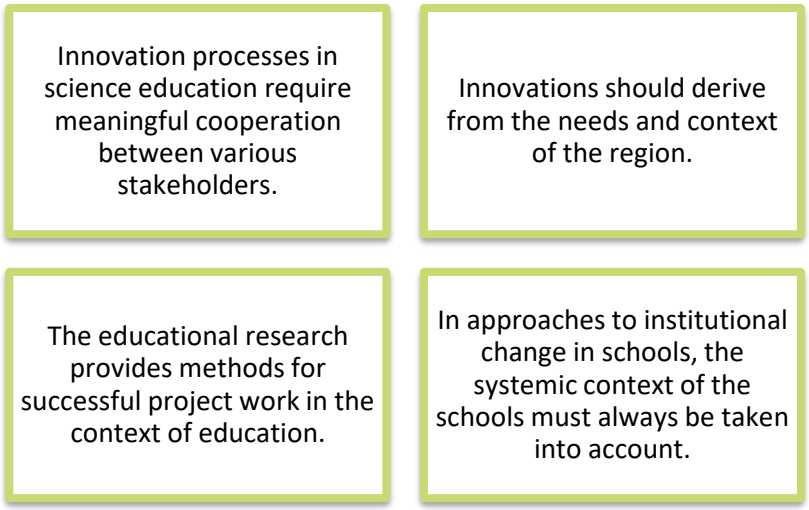

Fig.3: Four assumptions of the school community project- idea

2.2. INCREASE: 5-steps to success

The INCREASE-Trail Map for school community projects is a guide for school leaders, teachers and other educators that offers an overview, which stages a school community project should go through to become successful.

INCREASE stands for the five trail phases **IN**VITE, CO-**CRE**ATE, **A**CT, **S**HARE, and **E**VALUATE. The trail map metaphor was chosen to show that the path taken might not always be predictable. It takes

[1] https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation

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detours and loops. Inviting stakeholders to accompany a school project has a great potential to explore unexpected sights, set new goals, and finally arrive somewhere else. A school community project will always be rewarding for everyone participating.

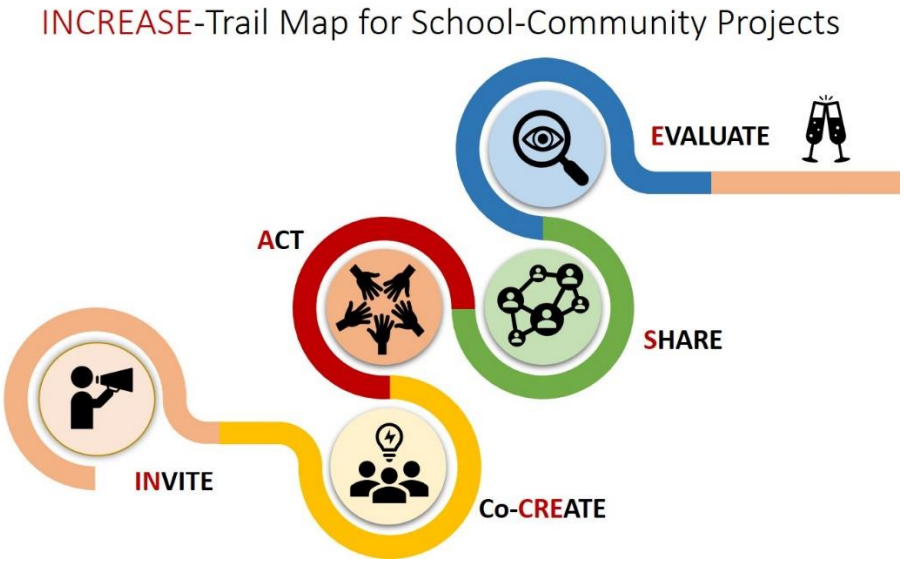

Fig.4. The INCREASE-Trail Map for School-Community Projects

The INCREASE-Trail Map is a systematic guide that intends to serve as an orientation for SCP leaders. With the help of this 5-step plan, every phase can be worked on one after the other. It explains each phase a school community project passes through, how it looks like and what needs to be accomplished to become successful. Schools have much to gain by fostering connections between formal and informal learning, NGOs, the local government, researchers, committed lay people, young people, and senior citizens.

The MOST project, which took place in 10 different countries all over Europe, laid the groundwork for the development of Open Schooling culture in their socio-cultural environment. The experiences made in two rounds of SCP during 2020 and 2023 leads to a broad pool of exemplary SCPs which makes it possible to add practical information to the explanation of the following steps by providing best practice examples from all over Europe. Participating schools focused on environmental school community projects addressing the subject areas of *waste management* and *energy*. Thus, trail sections use these fields of action as an example.

The INCREASE Trail Map should be used in parallel with the *MOST Pedagogical guidelines and exemplary science materials*, produced by the Norwegian team in WP4 of the MOST project. The guidelines provide information on pedagogical and scientific materials that can be used as educational basis to run School Community Projects. The guidelines describe the underlying theoretical approaches of the project, Project-Based Learning (PBL) and Inquiry-Based Learning (IBL), in the context of SCP. The pedagogical guidelines describe valued outcomes as well as features of SCP ways of working and features of SCP problems. In addition, it also follows the INCREASE trail map and provides steps that SCP leaders as pedagogical leaders need to take into account. Supplementary, the WP4 guidelines presents best practice exemplary science materials from the MOST consortium (WP4 Pedagogical guidelines).

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INVITE

Anyone who has a certain level of interest in Responsible Research and Innovation (RRI) and actively advocates sustainable development can participate in an SCP. As the SCP leader, you should make sure that you schedule the dates for any meetings so that as many people from the community as possible can participate (for example, pay attention to ordinary working hours). Further, it can be helpful to set up a rough timeline for the duration of the project, so that everyone who is involved can see if it is even possible to participate.

Fig. 5: Example from the Netherlands (left) and from Turkey (right) of an invitation to participate at the MOST project

Students and teachers

To a positive start, students should be interested in making a difference and giving something back to the community. The motivation of the students to participate is intrinsic as the students are willing to do research and follow their interests and give something to the community.

Since it is recommended that SCPs address socially relevant topics concerning i.e. waste/garbage or energy management to reach a broad community, a successful implementation can lead to an increase in life quality for everyone. It is suggested to hold a kick-off lesson on the subjects of waste management, energy consumption, and aspects of sustainability and environmental awareness in the classroom, carried out by the teachers or the SCP leaders. There is also the option of inviting experts to a workshop to increase the interest of the students.

In addition, the advantages of an Open Schooling approach should be presented to the participants.

Hint: We recommend to always invite another teacher who is willing to support the project idea! It is not required that he or she is a STEM teacher. Transdisciplinarity can be very fruitful in carrying out SCP

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It is also helpful if the participating teacher has a certain level of environmental awareness and interest in the topic and prefers student-centered teaching approaches and sees an advantage in being able to work with experts from different areas. The experience of two rounds of SCP during the MOST project showed, that it is advisable to extend this stage of the process. We suggest, to also invite interested teacher, the administration and the principal so the whole school is informed about the project idea. Experiences from two rounds of SCPs showed, that as more teacher from the school are involved into the project idea, the better the execution of the project. In addition, more teacher led to a transdisciplinary learning in school. It can be also very fruitful to extend the frame of the project by inviting additional teacher from different schools. Therefor you can use existing networks or social media channels, shows a example from the Czech Republic, where Facebook groups are used to create an Open Schooling network during the MOST project.

Stakeholders

At the beginning of a school community project, we recommend searching for possible partners from the local community. Experiences from different countries participating in the MOST project showed that it is very helpful to integrate local politicians or representatives from the region or city to the idea of the project. A success-story from Germany, Freiburg, proofs, how fruitful such a cooperation can be: In Freiburg, a network of schools had the possibility to work together with an ambassador of the city. In this way, they had a large network of possible stakeholders and companies who are interested in working on such projects, as well as contact to NGOs who were interested in the work with schools. An additional advantage was the amount of communication channels, the projects could address, which they also used for the dissemination of their results.

In general, when looking for stakeholders, it is advisable to formulate explicit invitations that contain specific information about the project. It may also be recommendable to contact possible participants by telephone for the first time, as there is the possibility of a conversation or use online conference tools to create an official frame where you and your project team can present the idea of the project. Different approaches can work for different regions so weigh which option could work for you:

- Search for similar projects in your region
- Use the notice board in your school
- Contact the church parish
- Talk to your personal contacts
- Integrate the family and friends of the students
- Contact (waste) companies who are interesting for the SCP
- Make use of social media channels
- Look up established associations
- Connect the project to national events (world earth day, national math competition, solar car race, clean up days …)

A well-thought-through search for associations and companies that like to carry out environmentally based projects influences the course of the project. At the beginning of the project, it is better to invite as many people as possible. Common interests can be bundled, which will primarily support the students at a later point in time.

The question of who will take part is revealed through an initial meeting with possible stakeholders. A so-called “Launch Workshop”. Consequently, from a certain point on, participation is regulated by the students' project ideas. In an exchange between the students and the stakeholders, it becomes clear

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which community members engage with the students in a particular project which leads to a kick-off meeting, which is described in the co-creation stage. Excerpts from a example from Lithuania should illustrate on how to go through a Launch Workshop:

Date of the Launch Workshop(s):	3rd February, 2023
Number of Participants:	24
Online or in person?	In person
Short description of the procedure:	The meeting was organized in person. The aim of the meeting was […] to encouraged teachers to participate in the future project. To ask them to continue to implement school community projects in context of ecology and saving energy. The discussion about possibilities what SCPs could be continued or implemented new in the future make place as well. The participants discussed in small groups and shared their ideas how to motivate teachers to participate, how attract community members, how to disseminate SCPs for larger number of citizens.
Whom did you invite?	Teachers, community members and RST members
How did you present the pedagogical/scientific guidelines (WP4) and the manual (WP3)?	Slides, translated documents and examples of SCPs. We made presentation of the international MOST results of the first round and the regional results of the second round.. The participant may discuss and suggest themes of the future SCPs and the possibilities of the implementation. They suggested, how their project can be expanded. The teachers were asked to vote for the best SCP of the second round.
How did you announced the Launch workshop? Have you announced any specific topics?	In the Vilnius municipality website, than personally by emails.
Learnings from the two rounds of Launch workshops and ideas for improvement.	1)The active teachers implemented constructive projects and invited more community members. 2) Teachers who were personally invited were much more active. Only a few teachers responded to the common invitations on website or social media. 3) The community members were active and wanted participated when they were asked. Changing teachers' attitudes that community members would not agree to participate was the strongest challenge

Fig. 6: Exemplary Lunch Workshop from Lithuania

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However, since the core topics of the projects coming out of the STEM sector on the one hand, and to foster the RRI approach, on the other hand, it must be ensured that the stakeholders invited are not only from science and research sector but include laypeople and representatives from NGOs as well. In addition, numerous companies and institutions are pursuing an educational mandate, which is covered by participating in the project. In this meeting, the teacher hast the task to explain the idea of Open Schooling approach to the attending community members.

EXAMPLE

A learning from the MOST project was, that such a Launch Workshop can easily be integrated in a teacher training to inform further teacher about the idea of Open Schooling and widen the Open Schooling network. As a initial meeting, also online meetings can work, as a example from Turkey: 13 participants from local and national education administration as well as education staff and teacher have been invited via posters on social media and via existing networks. In the frame of the meeting the pedagogical guidelines as well as the draft version of the manual was presented.

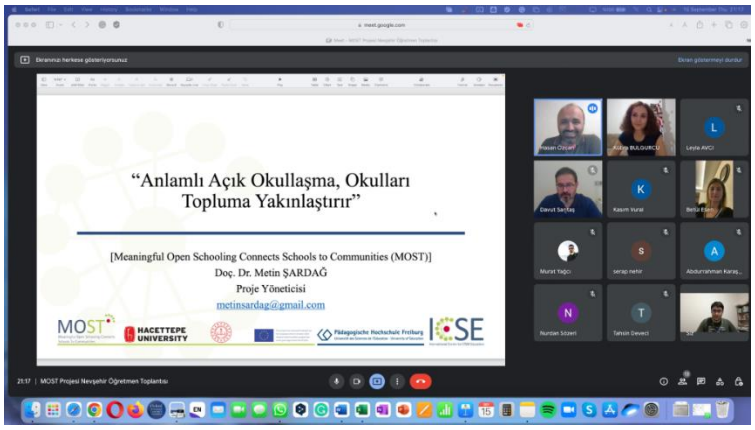

Fig. 7: Online Launch Workshop in Turkey

Furthermore, it must be ensured that the invited stakeholders and community members can adequately answer questions from the students. Community members can be experts in a specific field but also interested persons and neighbors, parents, family, and friends, business partners, or policymakers. It is important to ensure that the experts can talk about their area of expertise in a language that can be understood by laypeople and students. All people interested should be able to follow the explanations.

It is also helpful to invite local universities. Usually, the universities have a substantial network, which can be convenient for the upcoming tasks of the project. Additionally, universities often bundle their ongoing projects and initiatives in the context of sustainability in so-called green offices (example from Innsbruck, Austria: https://www.uibk.ac.at/de/projects/green-office/).

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Invitations can be made on three levels:

- *Principal:* The headmaster of a school can use his channels and network to woo participants and interested parties. The headmaster´s network is practical to find participants and interested parties in the first part of the application.
- *Class level and teacher:* At the class level, the students can share the project ideas with family and friends and other class associations. In addition, the teachers can use their networks to get other interested parties to the project idea.
- *Individuals:* Specific topics and thus specifically interested stakeholders can be acquired through individual students. The level of the individual also promotes cooperation, this way people can be won for the project who are specifically pursuing the same ideas.

Incentives to join

Formulate Invitations in a way that the main points are easy to understand. The invitation should also explain why participation in an Open Schooling project is beneficial and profitable for oneself and the community. Moreover, use the invitations to convince people to participate in an Open Schooling project. In addition, certain incentives can increase the motivation to participate. Strengthen the incitement by explaining explicitly that the emerging projects intend to address the needs and challenges of the region.

Hint: Use formulations like: "Use the rare opportunity to work on eye height with students and people from different parts of society", to reach for stakeholders.

Incentives can also be created by trying something new, for example, project work with an app (e.g. Litterati app; https://litterati.org/, Example from the Netherlands). In this way, the aspect of gamification comes to the fore, which can serve as an incentive as well. Gamification appeals to curiosity, engages students and stakeholders to participate, and has the ability to increase the digital competence, which can be seen as a key competence for lifelong learning.

Checklist for SCP leaders:

- Search for possible partners in the region
- Create incentives to participate
- Formulate an explicit invitation
- Make phone calls to get into a conversation
- Invite as many people as possible and bundle common interests
- Support conversations between students and stakeholders
- Make sure that you invite people from different areas

CO-CREATE

In the INVITE Phase, SCP community partners were selected and invited to join a Kick-off meeting and engage in a co-creation process. In an ideal SCP setting, co-creation starts from the scratch and the group designs a project jointly including the area of action.

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Co-creation is an innovative and participatory process that aims to bring together stakeholders from different parts of society. Co-creation enables specialists and experts to cooperate with other groups with whom an exchange normally does not take place. The positive consequence of the dialogue is learning from one another besides developing cooperation between different groups in a society. The appreciable output arises when people from unalike areas and with heterogeneous cultural and social backgrounds come together. Experiences from the MOST project showed, that it can be a successful way to hold co-creation workshops in regular intervals of a project. A SCP is then successful, when students have the possibility to take the action in the project. Don´t be afraid when the start of the co-creation process is a bit chaotic, this is part of the process and can be seen as a "productive chaos" (German MOST advisor). In addition, we saw success as soon as the Launch Workshop was connected to a rough topic which resulted in a couple of small projects in the end. In some cases it can be advisable for the teacher to support students to speak up as well as to remind stakeholder politely to stick to the idea of co-creation.

"To facilitate co-creation, you need to understand the process; you need to have a good sense of the steps to take to be co-creative in the entire undertaking. On top of it is useful to have plenty of tools and methods in your back pocket that can help you host that process" (WAAG Society).

Fig. 8: Launch Workshop with co-creation aspects "Community Garden"

When choosing a topic in a school community project, we recommend using a co-creation approach. For the successful completion of an SCP, it is most important that all partners fully support the project. Usually, this happens if individuals and organizational needs are covered, and each participant (including students) can recognize an advantage for themselves and the community. You can find a selection of methodological approaches to facilitate the process via the Co-creation Navigator (www.ccn.waag.org). As a tool, like shown in fig X above, the environment or surrounding can be used as well, as the following example shows. I this case the school garden environment of the Universität Innsbruck worked as a source for co-creation process and topic finding around the overarching theme of food waste reduction. A short list of projects that originate from this workshop:

- Food waste reduction
- Worms generating compost
- Community Garden

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- Meatless Menu – Funghi Garden
- Learning with funghi
- Transdisciplinary Work with raised beds

Co-creation leads to success as this Open Schooling project from Spain shows:

EXAMPLE

As a part of a big SCP the school organized a launch workshop, which led to a co-creation workshop as well. As a first activity, the participants met in front of the school and started collecting the rubbish in the schoolyard. In this way students and stakeholder from the community, started talking to each other and a first connection evolved. Working together led to various ideas on how the waste problem can be tackled. As a result, every class who participated approaching the waste problem from a different direction and carried out unique projects.

During every co-creation process, the role of the teacher is to encourage students and stakeholder to follow the idea of co-creation. A particular aspect of co-creation processes is working together on an equal footing. To realize this setting, consider the following aspects:

- Introduce everyone – not only the stakeholders (e.g. students, teachers, …)
- Name everyone the same, first name or last name
- Integrate an ice-breaker action (Here you can find a list of activities: https://blog.hubspot.com/marketing/ice-breaker-games)
- If it is possible, the whole class who is participating in the project should be involved
- The role of the facilitator is essential. It is his/her responsibility that everyone involved can state their opinion. The facilitator has to keep an eye on the time and cut off people that destroy the discussion by monologues. Possible phase to cut off people during a monologue: "Thank you very much. You have statute your opinion that you would like to have this and that. I would like to hear the opinion of… now."

On the search for a topic:

Hint: Ask your students to read the local newspaper or talk to community members to see what concern is up to date!

In principle, every topic with **social relevance** can be viewed as a good topic for a school community project. However, the topic should be based on everyday life in a diverse society.
Television, social media, or newspapers can always be recommended as a source of information on currently discussed topics. Controversial topics are always a sign of enthralling themes! (e.g. climate change, sustainability, energy, waste management, food waste, urban gardening, use of plastic, solar energy, electricity, reduce & reuse …).
Sometimes, teacher are limited through the curriculum, in this case the MOST project teached us, to embed the SCPs into the everyday school life and the curriculum. A teacher from Norway made this experience: "There are different possibilities to connect the topic of the SCPs with topics of the curriculum". The teacher participating in the project found ways to integrate it in the curriculum in connecting it to topics like energy and had practical units, which were part of the Open Schooling project.

If it is not possible, that all students take part in the co-creation process, we recommend inviting students' representatives to participate in co-creation sessions with community partners, to be able to take up any ideas and thoughts of the participants. In this wise, every suggestion flows into the topic finding process, project ideas that pursue similar topics can be bundled, and students and community members come together.

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Themes and Topics

The topics of the projects should have a benefit for the community and address the needs of the region. Because school community projects have the power to become transformative agents for society. Starting from the school level it is possible take action on social relevant problems like climate change. Besides, all members of the SCP should jointly decide on a topic of the SCP to create ownership. The topic should be socially relevant and require scientific or technological solutions. The decision on a socially significant headline concerning the region increases the interest and participation of the community members. A example which addresses the region interests is carried out in Malta, where the question arise: "*What to with all the olive? How can we use them in sustainable way?"*
Pursuing a common goal that serves community needs will develop not only shared ownership of possible solutions among project participants but also raises the acceptance of outcomes. Sometimes the best project results out of the easiest ideas. So go for the "low hanging fruits" and start with recycled toilet paper, soap bars, bags for bread (instead of paper bags)…

To get the students excited about the project, the SCP leader or the teacher should conduct a kick-off unit on the topic, as already mentioned above. In this way, you draw attention to observable problems within the region. At this point, the students can be included in the decision-making process. At the level of the headmaster, attention can already be drawn to the issues addressed, for example by initiating a project week or actions such as an energy week (e.g. the school as a whole unit tries to save energy) or a waste avoidance week.

ACT

After the SCP group decided on a topic, it is advisable to set up a project plan. Therefore, it can be helpful to hold a kick-off lesson. The lesson could discuss the frame of the project as well as objectives the class is willing to reach. Further the lesson can give an insight and basic knowledge in the overarching topic as well as basic knowledge about project management.

Hint: Remind them to the idea of the SCP and support your students with additional information they need (e.g. additional contacts)

Define the goals

The success of an SCP project, regardless of the context in which it takes place, is measured by achieving the goals set. However, objectives also provide a framework for orientation within the project.

Hint: Create a list of milestones to document the progress of the project!

It is indispensable that the objectives are defined within the school-community project team from the beginning. Goals can be achievable in the short term (e.g. reduce the weekly amount of waste) or feasible in the long run (e.g. people's shopping behavior is influenced over the long term). Objectives need to be measurable to recognize whether they have been achieved or not. On the way to the higher-level project goal, further steps can be interposed for control reasons. A list of **milestones** that build on one another is helpful here.
An exemplary goal can be to make the school´s power system more eco-friendly (project from Germany) or the use of given resources like in Malta:

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(Fig.9: Left picture: Students are working on the objective to make the school´s power system more eco-friendly, SCP from Germany. The picture on the right hand side shows students from Malta working on a sustainable solution for the olive trees close to the school)

Share responsibilities

Hint: In order to be able to look up what has been discussed, it makes sense to keep minutes from the talks of each meeting!

For the work that has to be done, roles must be assigned as early as possible. In this way, every team member has responsibility for the project and is motivated to drive the project forward successfully. Regular meetings, where the results of the single groups are presented can be helpful to achieve the overarching objectives. Regular exchange is necessary, as the tasks of the different roles are very closely linked to each other. To get an overview over the roles needed, one can orient on the stages of the INCREASE –Trail Map. The table X shows a possibility to define roles and their responsibility:

Exemplary SCP from Austria: Community Garden project		
Role	**Responsible for…**	**Garden Project**
Strategy Group	Work out a strategy for your project. Make sure you define goals and keep in touch with what is going on in the other groups. It is also part of the Strategy´s Group Job to set up a timetable in agreement with the teacher.	The Group talked to the principal, if the project is allowed, before they defined a timetable together with their teacher. They also discussed a rough topic and how it can be carried out
Akquisition Group	Go through the steps mentioned in the **IN**vite stage. Set up invitations for teachers & students, invite the principal of your school make phone calls. Make sure, the rest of the project team is informed about whom you invite for a first meeting.	Several strategies emerged from a first internal meeting. Invitations were printed and distributed in the neighborhood and the school. In addition, the group contacted local companies and the local University.
Co-Creation Group	As soon as you know who is going to participate in a first meeting, set up a plan for the co-creation process. Read the co-**CRE**ation part of this manual attentive – it supports you with rich information	With support of the University, the school set up a Launch workshop and a co-creation event. Everyone who was

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		interested was invited to the meeting.
ACT-Group (involve everyone)	**A**ct describes the main part of the project. Make sure that a topic and goals are set and think of how to achieve the objectives.	Goals were defined and the main work on the project can begin.
Dissemination and Media Group	Document the single steps. Make sure that the community is informed about what you have achieved in the SCP. **S**hare the results of your SCP via different channels.	The group used the school internal social media channel to document the single steps. In addition, a local newspaper reported about the SCP.
Evaluation Group	Make sure, the whole SCP is **E**valuated. This can inform you about the achievement of your subjects and provides positive and negative feedback, which leads to a learning for the next project.	Internal evaluation made clear that the project was successful but there are a few points which need to be worked on.

Fig. 10: Exemplary SCP from Universität Innsbruck, Austria

Talk to each other. As in many areas of society, while carrying out a project, regular consultations are helpful to clarify questions or unclear points and inform partners. To arrange a fruitful consolation setting amongst project group members, we suggest the following guide:

Guide to successful project management discussions	
Rule Number 1	Discussions should be carried out on eye height.
Theme	In the run-up to the conversation, try to find a topic that you want to talk about.
Agenda items	A guide or a list of the items on the agenda will help you to get a structural conversation. In addition, the dots will help you orientate yourself, in case you lose the thread.
Invitations	Invite all relevant persons. Anyone who participates in the project should be informed about the conversation.
Minutes	Recapitulate individual conversations afterward it´s helpful to appoint a person to take the minutes.
Conversation rules	Follow the rules of conversation: • Opinions and ideas can be freely expressed • Express your expectations and wishes • Let other members speak • Accept feedback and criticism
Distractions	Make sure that your project meeting is free from distractions; put everything that could distract you aside so that you can work purposefully.
Feedback	Mutual feedback promotes the culture of dialogue and active exchange processes among themselves.

Fig. 11: Guide for successful project management discussions

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If the duration of the project expands over a longer period, it is helpful to arrange regular project meetings. (Especially in times when you do not meet the project team regularly, it makes sense to arrange a "jour fix".) Regular meetings at weekly intervals help to create a productive working atmosphere and promote fruitful exchange.

Digression digital communication:
Through the Covid19 year, we have all become experts in digital communication; the list in the appendix (p.12) should be an aid to support your reciprocity within the project. The link list should also help in advance to query prior knowledge and interests to find project groups.

Set a timeline

The question depending the duration of an SCP is probably the one that has the most lasting effect on the framework of the project. Because with the time available, the scope of the project is determined. School community projects can run for several weeks or months but could end after one or two weeks, too. It is important, that the basic idea of learning together and from one another between students and community members (e.g. experts, researchers, practitioners, etc.) endure. In addition, keep in mind that a project not only the implementation takes time, also every single phase requires a few hours of work from the participants.
The duration also depends on whether the project can be embedded in the curriculum. SCPs do not have to run outside the curriculum if it is possible to embed it in everyday school life and the curriculum. Interdisciplinary treatment of the projects is also possible.

If projects already exist, they can also be pursued with an Open Schooling approach and receive support from the MOST project. It is also possible to roll up projects again. In this way, students can deal with a project topic on different levels in a sustainable and long-term manner. In this way, knowledge and insights can be sustainably secured. However, the project idea is also subject to a sustainable implementation because the projects have no expiry date and can therefore continue and represent a sustainable benefit for the local community. As already mentioned in Section '*share responsibilities*', a constant and regular exchange between the project partners is necessary to develop learning processes and to promote the scientific knowledge and transversal competencies of the participants.

The experience of the MOST project showed, that every SCP is different from another. It depends on the context, the age of the participating students, the time provided for the project and the topic. Therefore the following list provides information about the framework of SCP:

- Project on the topics of biodiversity and local history in Czech Republic: Because of the cooperation with a local NGO called SEVER, it was possible that the project lasts over 2 months. This was possible because of the strong network of the NGO.
- Some projects from Germany have been directly connected to the school year on elective subjects or working groups. These groups meet every week in the afternoon and more and more climate- and sustainable-oriented groups arise. That gives the students the possibility to work on the topics weekly.
- For some projects there was a need to prepare materials a few months before the actual start, especially when it is connected to national events. For example supporting students with research questions.
- From the Netherland there are also examples of successful SCPs which lasted only one day. You can find examples here: https://elbd.sites.uu.nl/2020/03/13/most/

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- In Norway teachers connected the project to the course because a team project is part of their exams. In this way they had the chance to work on the project for ten weeks. There are different possibilities to connect the topic of the SCPs with topics of the curriculum.
- Because of the pandemic it was also possible to carry out projects online or in a hybrid form.
- A successful story from Sweden is the strong connection to the local waste company which made SCPs successful
- Little assemblages and weekly meetings of the project team, in which especially families were integrated lead to success

Exemplary SCP:

As part of their math class, an 8th grade teamed up with a salesperson from the local organic shop, an employee of the regional waste management, an environmental consultant, and a freelance journalist. The topic is the question of how garbage from private households can be reduced in their city.

After a joint brainstorming session, small groups take on different tasks: One group, for example, analyzes the needs of residents and interviews passers-by about their shopping behavior. Others collect household rubbish over a while and compare it to the amount of rubbish created by more conscious shopping.

The seller gives valuable advice on this. The result is extrapolated to the garbage consumption of the entire city. Finally, the participants draw up a list of tips on how waste can be reduced in their city and what effects this has. The results are appropriately prepared for an exhibition in the school and the local shopping center, and the local press reports.

SHARE

Science Fair:

As soon as the SCPs have been completed, all projects can be presented at a **Science Fair,** e.g. at the end of the school year. As this is a project that has addressed issues and challenges that are relevant to the community, it is advisable to share the results of this project as well. A good possibility would be a Science fair, where the school invites the neighborhood and local companies to present and discuss their findings. The MOST advisor from Spain described the Science fair as a “keystone” of the project, because students and community members recognized, that they have done something, which really matters. The fair can therefore be seen as a starting point for synergy effects supporting the community. Here, the students and project partners get the opportunity to present their projects to a wider audience. All interested parties, as well as community members, should be invited to this celebration to reach a broad public.

Hint: We recommend to connect the Science fair to a special day like World earth day.

SCP presentation can be done via:

- poster
- video (https://icse.ph-freiburg.de/weprotecttheplanet/)
- slide presentation
- hands-on activities

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- theater play/role play
- young researchers conference
- etc.

The MOST Fair is intended to provide the framework for all those involved (students, teachers, community members, ...), to meet again to promote cooperation and networking at the regional level.

Presenting the results publicly is an exciting side effect for the students, as this offers them visibility and approval for their work. It generates motivation to become active yourself. In addition, social skills are strengthened through the exchange with other SCPs.
The MOST Fairs can also create synergies between the individual schools and various stakeholders and community members, which can be beneficial for future projects and work (e.g. exchange of experiences, work materials, etc.). MOST Fairs are organized and carried out by the regional MOST partners.

Public Relation Strategy

A well-planned and comprehensive public relations strategy should be part of the project design.
Public relations work should span different ranges:

- the local community in the SCP environment (e.g., municipalities also have “notice boards” or billboards)
- Stakeholders, the government, and the population in the region (e.g., via the school website, social media posts, local and regional newspapers, etc.)
- The national and international society (e.g., school website postings translated into English, the international MOST website, etc.)

To reach those goals, schools can use different channels to communicate their projects:

- MOST project website
- school website
- video formats (e.g., YouTube channel hosted by the city or community members)
- local newspaper
- social media channels (as long as the school runs some)
- podcast
- bulletin board of the school
- use the MOST fair
- local radio or television broadcasts

The more people and policymakers will learn about successful SCPs, the more will be inspired to become change agents themselves and to support the Open School movement.

Open Schooling project in TV and radio

Universities can be a useful supporter of your Open Schooling project as this example from Sweden shows. Universities are big institutions and often have their own communication office. The MOST advisor asked his media and communication office for writing a press invite and a few days later, TV and radio called for more information and created a report on this Open Schooling project.

Bike Fair in Austria

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Because of having several community garden projects, the organization team of the MOST fair in Innsbruck decided to carry out a so called "bike fair". Interested community members met at a starting point and cycled from garden to garden, where the SCP leader presented the beds and raised beds. The event ended in an opening ceremony for a city park, where the discussion and talks endured.

EVALUATE

It is advisable to evaluate your Open Schooling project for the class and the school itself to determine to what extent a school community project was successful. Each SCP should be evaluated as an individual to learn what should be done differently or improved in future projects with a similar approach. Further, evaluation needs to be seen as a part of any scientific process, so it should be included in the SCPs, to give students an understanding of how scientific processes work out. On the individual school level, the evaluation process relates to the project carried out by the school and serves as a source of information for the SCP leader and the school itself.
Various methods like a questionnaire, checklists, or internal feedback talks can be useful. For an evaluation within the school, we recommend a five consecutive step strategy to implement a successful evaluation:

1-Pre-evaluation:
What are the goals of our project and how can we observe the development towards our objectives to find out whether we have achieved them?

2- Develop an evaluation design:
- What do we want to learn from evaluation?
- Which questions shall we ask and when?
- Which methodology shall we choose?

3- Collect and analyze data
This phase is dedicated to collect and analyze data. It is important to plan when and in which context the data will be collected. A wide range of data collection tools are already available: e.g., for questionnaires: online survey platforms (LimeSurvey, SurveyMonkey, etc.), database systems or paper-pencil tests, audio/video graphs, photos, collections of artefacts produced during activities (e.g., students project ideas, participants expectations in the jointly produced poster during a meeting, etc.).

4- Reflect and review the lessons learned
Evaluation results should be discussed within the SCP team (students included) at the end of each SCP. This reflection process is needed to provide a space in which all members of the team can talk about their perception of the trail they have traveled together.

5- Improve and modify your SCP strategy
Experience gained while moving along the INCREASE trail and lessons learned from reflecting and reviewing evaluation findings will contribute to the improvement of the SCP strategy regardless of the context in which it will be applied. These lessons learned will inform future SCP activities, will improve the quality of science teaching and learning, and will contribute to the establishment of successful open school networks.

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This evaluation plan helps to create an "in-school lesson learned"- list, which helps to improve SCPs. Furthermore, stumbling blocks from school projects can be discussed on the international MOST website: https://www.teach4life.eu/international-discussion-board/open-schooling

3. Conclusions, Recommendation and lessons learned

This manual provides information and recommendations for the implementation of SCPs. The presented 5-phase model (INCREASE) describes the individual steps that an SCP leader should follow to be able to implement a project successfully. In addition to the description of the phases, there are recommendations for action for the actors involved, as well as implementation examples. The success of an SCP stands or falls with the interaction between everyone involved in the project, which is why we recommend regular and well-thought-out exchange and communication, which culminates in the jointly developed Science Fair.

The Open Schooling approach as quite a new approach of learning and combine schools and their neighborhoods seemed to be a challenge at first. However, after 3 years of Open Schooling projects, we are happy about every lesson we learned. The list shows a few challenges and lessons learned, we faced over the past 3 years and how we managed it to overcome any.

Challenge	Solution
Pandemic situation	Unfortunately, we faced the pandemic situation for more than a year, which made it even more difficult to work together in projects. But we managed to carry out a lot of Open Schooling projects, using digital tools for the different stages of the INCREASE trail map. We used a online Meeting tool to present the idea of Open Schooling, had a co-creation session using a digital whiteboard and the teacher managed to let the students work in small groups. The participating stakeholder where also informed in a digital way about the idea of the project an in this way several projects where carried out mostly outdoors and in small groups.
No participants found	Sometimes, schools had difficulties to find participants from the community. No one reacted on Mails sent to existing networks. With changing the strategy, for example using social media or participating in neighbourhood meetings, interested community members where found.
Communication with local authorities	As suggested in the Invite stage, schools tried to contact local politicians. In many cases they didn´t response to E-Mails. Therefor we decided to contact not direct the authorities themselves but the offices, which worked out in many cases. In other cases it was successful to let the students write a letter and ask for a meeting.
School internal conflicts	New approaches always finds opponents. And so it was also with Open Schooling in some schools.

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	The key to success was to integrate as many other teacher as possible and react with successful Open Schooling projects to the criticism in school.
Open Schooling approach	The Open Schooling approach is characterised by a bottom-up approach and the co-creation phase between students, educators and stakeholder. In some cases, stakeholder and even teacher left the path of working on eye height, started communicating with the students as kids, and tried to realise their ideas on their own. This challenge is a hard one to overcome because you as a teacher are in charge to set the rules of communication. If you recognise a breach of the rules, you need to talk to the stakeholder. In nearly every case a calm communication and a hint on the rules led to success.

Fig. 12: Lessons learned and solutions

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4. Appendix

Appendix 1: Links to CO-CREATION and EVALUATION tools

Here are some links to activities/digital tools, which might be useful in meetings, online teaching, co-creation and evaluation.

Open Schooling EU-Projects

Link	Description	Information
https://www.openschools.eu/	A recently finished European Project offers a wide range of ideas and theoretical background	Ideas for teachers, school leaders, parents, student's policymakers, businesses
Open Science Schooling – Open Science Schooling	EU project finished Feb 2020	Idea for School guide online
https://www.phereclos.eu/	Currently running EU Project -Higher Education Institution engage in open school hubs	Will establish Local Education Clusters
https://icse.eu/eosnet/	Inspire, Connect and find Support: This is the aim of the European Open Schooling Network (EOSnet), an association of participants or people interested in participating in Open Schooling projects.	The EOS net offers the opportunity to connect with like-minded and exchange about experiences in Open Schooling projects.
https://www.teach4life.eu/international-discussion-board/open-schooling	International Discussion board for teacher.	Informative questions raised by other SCP leaders and also best practice examples.

CO-CREATE and ACT

Link	Description	Information
https://ccn.waag.org/navigator/	The website offers various thoughts and inputs on co-creation workshops. Many of these can also be implemented digitally, although tools such as those listed below are sometimes required for this.	Free! Works as a navigator on Co-creation processes.
https://www.mural.co/	Mural is a whiteboard tool, whiteboards can be prepared	Various templates are already activated in the free

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	here before the meeting. Invitations are sent by email	version. Already offers templates for Icebreaker or collaborative methods.
https://miro.com/	Another Whiteboard tool	Free!
https://www.mentimeter.com/	Mentimeter loosens up longer meetings. Quizzes and opinion polls are possible. Participants can take part and vote via cell phone.	Free!
https://www.sli.do/	Any questions and answers that arise must be actively managed. Survey is possible in real-time.	Questions can be asked anonymously (via cell phone). A projector makes sense to make the question accessible to a wide audience.
https://www.mindmeister.com	Ideal for creating mind maps. The created mind maps can be designed intuitively, shared and edited together	Promotes co-creation and brainstorming processes - but subject to a charge as soon as more than 3 mind maps are designed.
https://www.wortwolken.com/	Can be used as a mood picture or opinion poll in meetings and conferences. Ideas are presented anonymously.	Limiting thought to 1-2 words. The project groups recognize possible similarities.
https://padlet.com/	Website that makes collaboration easier. Ability to create boards, documents and websites. Easy to use. Documents can also be stored on the platform.	Free!
https://answergarden.ch/	Tool to ask for opinions	Free!

Quiz, tests and online games for students

Link	Description	Information
https://kahoot.com/	Popular and well animated quiz duel. Answers can be saved in the form of an Excel file, so it makes sense to instruct students to use their correct name	Free! Good to check the students´ knowledge
https://www.socrative.com/	Socrative is more used to test knowledge; the playful character is	Free!

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	disappearing more and more compared to Kahoot. Results can be downloaded as PDF.	
https://de.actionbound.com/	Digital scavenger hunt. The action must be created via the browser, the app must be downloaded to play. The program allows audio, images, text, quizzes and more to be integrated.	Free! But the app must be downloaded. Takes time to prepare the game.
https://www.suchsel.net/	The site allows moderators or teachers to create puzzles.	Can be mastered as a joint task and thus promote a cooperative work process. Schoolchildren and workshop participants get into a conversation.
https://quizizz.com/join	Another tool to check the knowledge of the students	Free!
https://www.xwordsgenerator.de/de	Crossword puzzle generator	Free!

EVALUATE

Link	Description	Information
https://blog.hubspot.com/service/survey-software	The 18 Best Survey Software and Questionnaire Tools applied in marketing campaigns in 2020	A ranking is provided
http://www.communityschools.org/resources/community_schools_evaluation_toolkit.aspx	Community Schools Evaluation Toolkit	Free!
https://www.informalscience.org/evaluation/evaluation-tools-instruments	Self-Evaluation tools and instruments for informal science	Free!

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