



Meaningful Open Schooling Connects
Schools To Communities

Manual to plan and perform SCP

Authors: Suzanne Kapelari, Lucas Weinberg



Information about the milestone WP3

WP N° 3

Publication date: 28/01/2021

Report/WP title: Instructions for schools on how to organise SCP

Project Information

Agreement no. 871155

Project title: Meaningful Open Schooling Connects Schools To Communities

Project acronym: MOST

Start date of project: 01/09/2020

Duration: 36 months

Program: Horizon 2020 - SwafS means Science with and for Society

Contact Information

Coordinating Institution: University of Education Freiburg, International Centre for STEM Education (ICSE)

Coordinator: Prof. Dr. Katja Maaß

Project Manager: Sabine Mickler

Lead partner for this report/WP: Univ.-Prof. Mag. Dr. Suzanne Kapelari, MA; Leopold-Franzens-Universität Innsbruck

Website: <https://www.uibk.ac.at/dingim/index.html.de>

© MOST project (grant no. 871155) 2020-2023, lead contributions by Leopold-Franzens-Universität Innsbruck, Univ.-Prof. Mag. Dr. Suzanne Kapelari, MA, Area of Science, Geography, Computer Science and Mathematics Education (DiNGIM). CC-NC-SA 4.0 license granted.



This document is based on the work within the project Meaningful Open Schooling Connects Schools To Communities (MOST). Coordination: Prof. Dr. Katja Maaß, International Centre for STEM Education (ICSE) at the University of Education, Freiburg. Partners: ICSE at University of Education Freiburg, Stadt Freiburg, Walter Rathenau Gewerbeschule, Germany, Universität Innsbruck, Verein klasse!forschung, Energie Tirol, Austria, Univerzita Karlova / Charles University, Stredisko ekologicke vychovy SEVER Horni Marsov, o.p.s., Czech Republic, Universidad de Jaén, Agencia Estatal Consejo Superior De Investigaciones Cientificas, Spain, Vilnius Universitetas, Vilnius City Municipal Government, Lithuania, University of Malta, WasteServ Malta Ltd., Malta, Utrecht University, Stichting Naturalis Biodiversity Centre, Netherlands, Norwegian University of Science and Technology, Ducky AS, Birralee International School, Norway, Jönköping University, UppTech, Sweden, Hacettepe University, Ministry of National Education Turkey, Turkey.

Meaningful Open Schooling Connects Schools To Communities (MOST) has received co-funding by the Horizon 2020 programme of the European Union.

The creation of these resources has been co-funded by the Horizon 2020 program of the European Union under grant no. 871155. The European Union/European Commission is not responsible for the content or liable for any losses or damage resulting of the use of these resources.

Contents

Executive Summary	2
1. Introduction.....	3
2. Everything at a glance	4
3. The INCREASE -Trail Map for School Community Projects.....	6
3.1 Why do School Community Projects (SCP) increase the quality of teaching and learning?..	6
3.2 5-steps to success	6
4. Conclusions and Recommendation	17
4. Appendices	17
Appendix 1: Links to CO-CREATION and EVALUATION tools.....	17
Appendix 2: Method sheets	20

Executive Summary

This document is an internal draft version of the ‘Manual to Plan and Perform School Community Projects’(MPP-SCP) in partner countries. The manual describes important steps that should be taken into account by SCP leaders when carrying out a school community project. The manual is aimed at teacher, headmaster and other possible SCP leaders in order to support them in carrying out School Community Projects. It 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, the region concerning topic as well as the framework within a school community project can be carried out at schools. The manual should be used in parallel with the ‘Pedagogical guidelines and exemplary science materials’ which will be produced in WP4.

The objective of this document is to provide an insight into the overall structure (content Table) of a school community project. In addition, preliminary ideas for the content will be given in the following chapters. The sequence of steps (INCREASE-Trail Map) which has already proven to be successful in other open schooling projects will be described to offer first aid support for MOST schools to implement SCPs in the first phase of the project:

INVITE: Invite Anybody, who has a certain level of interest.

CO-CREATE: Try to bring different stakeholder and community member together.

ACT: Decide for a topic, set a timeline and develop a strategy with milestones and objectives to reach

Share: Communicate your project, use all possible channels to disseminate your project

Evaluate: See if you reached your goals!



Fig.1. The INCREASE-Trail Map for School-Community Projects (S. Kapelari, 2021)

The open schooling approach leads to a sustainable networking system between schools and their communities. The aim of the MOST project is to work together with private individuals, companies and associations on strategies to overcome current environmental and social problems. The collaborative work leads to a broader understanding of scientific processes and is intended to promote the scientific knowledge and transversal skills of society in the long term.

1. Introduction

MOST - Meaningful Open Schooling Connects Schools to Communities, is a project, funded by the EU, which aims to implement school community projects based on the open schooling approach.

This draft manual wants to support head teachers, teachers and other project participants in carrying out innovative activities that bring schools and society closer together and run school community projects successfully.

It will give an overview of the implementation of an open schooling approach suggesting necessary steps schools and SCP leaders will need to take in order to implement SCP's together with stakeholders in their area.

The content of the projects is to scientifically work on questions which belong to the themes of waste or garbage (2021) or energy management (2022) and to develop regionally feasible solutions.

In this way, a sustainable networking of schools and community should be established. Innovative approaches suggest that solution strategies for current socio environmental problems should be developed 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 the 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 impact on the everyday life of society, a space in which exchange and inclusion takes place, is extremely beneficial. One approach that promises success and brings scientific processes and procedures closer to society is that of 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."

[\(https://openscienceschooling.eu/about/\)](https://openscienceschooling.eu/about/)

By opening up the school 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 in order to profitably use the social and ecological opportunities that result from an equal distribution of the sexes.

The MOST 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. The MOST science Fair will provide a platform for future joint activities. Activities will be evaluated to improve knowledge and skills for future engagement.

2. Everything at a glance

School is often stressful; there is a lot to do, class preparation, corrections and more. To support you we have summarized the most important contents of the manual "to plan and perform SCP" on two pages. Further thoughts on the individual points are given in the main part.

The frame of the project

- At the beginning it should be defined who the **SCP leader** is, who can be a teacher, the director or any other community member
- The SCP leader needs to take notes about the project, therefore the MOST team offers a template
- **Anyone** can participate, no matter how old or what profession, who is interested in the topic and needs of the community
- The **topics** should be in the area of sustainable development and specifically include the aspects of garbage and waste (2021) and energy management (2022)
- The **duration** of the project can be variable. SCPs can last for a few weeks or several months
- The **subject** of the project can be associated with or even embedded in the curriculum
- an **evaluation** in the beginning and at the end of the project would be desirable

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.

INVITE

The project team has already invited a large number of interested stakeholders. As a teacher, you can invite other community members or people relevant to your projects. At a later point in time, after a topic has emerged, your students can also look for other participants. Here are a few tips:

- Search for possible partners in the region
- Invitations should be explicit and short
- Make phone calls, to get into a conversation
- Invite as many people as possible and bundle common interests
- Support conversations between stakeholders and students
- Invite community members from different areas

CO-CREATE

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 (www.ccn.waag.org).

ACT

This step marks the start of the visible part of a project and makes it clear to what extent the previous steps were successful. The implementation of the project will promise success, provided the following tips are implemented.

- Define the goals – Which objects should be achieved with the implementation of the project?
- Share responsibilities by assigning individual members of the project team a role that suits them
- Keep in touch – regular project meetings support the exchange
- Set a timeline – a list of milestones helps the students to orientate themselves in the project
- hygiene and safety plan – due to the pandemic situation, talk about hygiene and protection in class.
- you can find examples on how to run a SCP in the description on p.13

SHARE

Since this is a school community project, it is advisable to present the completed projects to the community. Various channels can be used for this:

- presentation via poster in school
- presentation on congregation evenings
- use the billboard in the school and the community
- project website
- school website
- video formats (e.g. youtube channel hosted by the city or community members)
- local newspaper or radio station

EVALUATE

Since it should be part of every scientific process, this project is also subjected to an evaluation. At the beginning and at the end of the project, the SCP leader will distribute evaluation sheets to students and teachers (duration: approx. 10-15 minutes).

3. The INCREASE -Trail Map for School Community Projects

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

In various debates on current topics it can be seen that science and society have drifted apart. There are various reasons for this, the most striking is probably a lack of understanding, which is based on a lack of exchange among each other. The core of the problem is that people have difficulties in relating the processes and innovations of scientists to their everyday lives.

Humanity is facing major global challenges which need to be tackled now. Current and future generations will need to come up with 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. These challenges cannot be addressed by individuals, single institutions or single governments. They require collaborative action amongst all stakeholders and ask schools to create learning environments which inspire all young people to exploit their full potential.

‘Responsible research and innovation (RRI)¹ implies that societal actors (researchers, citizens, policy makers, business, third sector organisations, etc.) work together during the whole research and innovation process in order 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 also beneficial for all students, not only those who are interested in STEM subjects in general. School community projects start here 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. Such a learning environment supports not only students but teachers to engage in real life activities which are relevant for the local community, the city or region. Students will experience that their work has an impact on the 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 based on four assumptions:

- Innovation processes in science education require meaningful cooperation between various stakeholders
- Innovations should be based on the needs and context of the region
- The educational research provides methods for successful project work in the context of education
- In approaches to institutional change in schools, the systemic context of the schools must always be taken into account

3.2 5-steps to success

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

INCREASE stands for the five trail phases **INVITE**, **CO-CREATE**, **ACT**, **SHARE**, and **EVALUATE**. The trail map metaphor was chosen to show that the path taken might not always be predictable. It takes detours and loops. Inviting stakeholders to accompany a school project has a great potential to explore

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

unexpected sights, set new goals and finally arrive somewhere else. However, a school community project will always be rewarding not only for the teacher but for the students and the whole community.

INCREASE-Trail Map for School-Community Projects

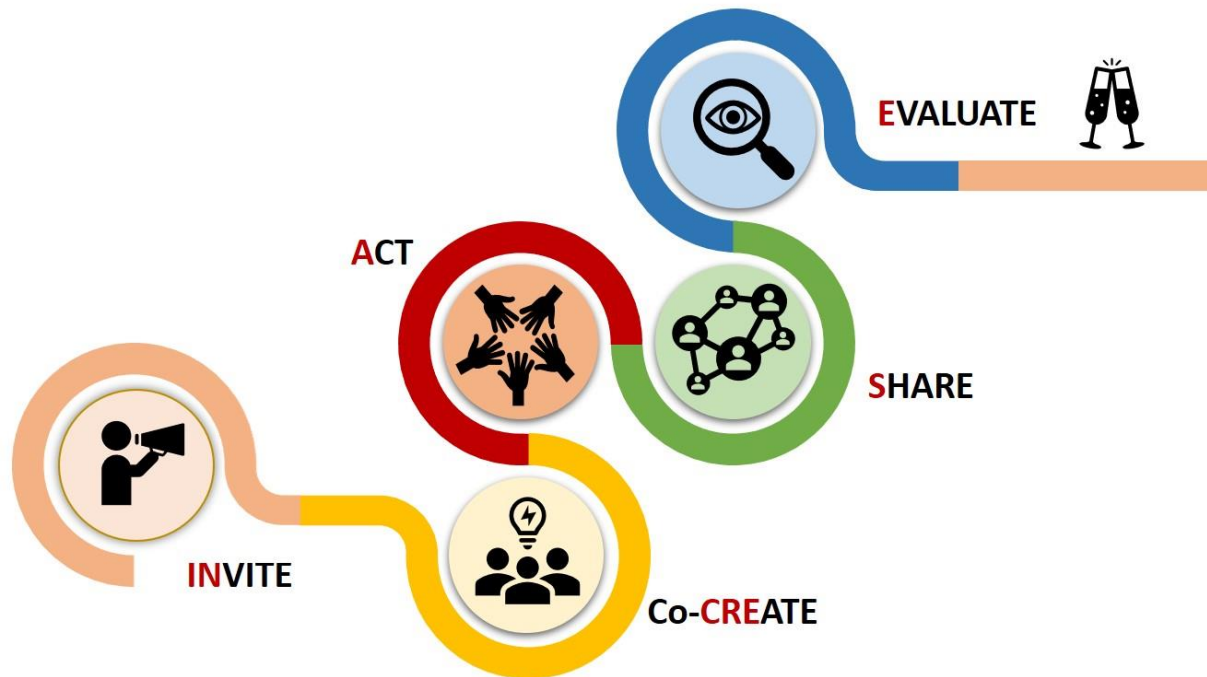


Fig.1. The INCREASE-Trail Map for School-Community Projects (S. Kapelari, 2021)

The INCREASE-Trail Map is a step-by-step guide that is intended to serve as an orientation for the SCP leaders. With the help of this 5-step plan, the phases 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 done to become successful. Schools have much to gain by fostering connections between formal and informal learning, NGOs, the local government, researchers, committed laypeople, young people and senior citizens.

In course of the MOST project these trail phases will be refined while MOST partner institutions gain experience and learn more how to facilitate and support each trail phase preferably. Project partners will study the specific context and the local environment and will learn how to establish an open schooling culture in their socio-cultural environment.

Schools participating in the MOST project focus 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” which will be produced in WP4.

- **INVITE**

Anyone who has a certain level of interest in RRI and actively advocate sustainable development can participate in a SCP.

Students and teachers

For a start students' should be interested to make a difference and to give 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 to give something to the community. Motivation for schools, on the other hand, can be based on a certification system. For this it is necessary to consult the responsible policy makers.

Since SCPs address socially relevant topics concerning waste or garbage (2021) or energy management (2022) 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 in order to increase the interest of the Students.

In addition, the advantages of an open schooling approach should be presented to the participants. It is also helpful if the teacher has a certain level of environmental awareness and interest in the topic and prefers student centered teaching approaches and see an advantage in being able to work with experts from different areas.

Stakeholders:

At the beginning of a school community project we recommend to search for possible partners from the local community. 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.

A well thought through search for associations and companies that like to carry out environmentally based projects has an impact on the positive 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. 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 which experts can support the students with their expertise in a particular project.

However, since the core topics of the MOST project are "waste management" and "energy", 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 but include laypeople and representatives from NGOs. In addition, numerous companies and institutions are pursuing an educational mandate that would be covered by participating in the project.

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

Invitations can be made on three levels:

- *Principal:* The headmaster of a school could use his channels on the basis of the topics of the MOST project to woo for participants and interested parties. The headmaster's network can be useful 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 friends and other class associations. In addition, the teachers can use their networks to get other interesting parties in the project idea. In this way, the MOST idea finds its way from the classroom to the staff room and from there to the community.
- *Individuals:* More specific topics and thus also specifically interested or trained stakeholders can be acquired through the ideas of individual students. The level of the individual also promotes cooperation, since this way people can be won for the project who are specifically pursuing the same ideas.

Checklist for SCP leaders:

- Search for possible partners in the region
- 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

[.. the finale version of this manual will present best practice examples for how to engage and invite community partner collected by MOST partners]

- **CO-CREATE**

Co-creation is an innovative and participatory process that aims to bring community members together with stakeholders from business and politics. 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 exchange is learning from one another and the formation of cooperation between different groups in a society. The greatest possible output arises when people from different areas and with heterogeneous cultural and social backgrounds come together.

When choosing a topic in a school community project, we recommend using a co-creation approach. For a successful completion of a SCP it is most important that all partners fully support the project. Usually this happens if individuals and organizational needs are covered and each and every participant (including students) can recognize an advantage for their self and the community. A selection of methodological approaches to facilitate the process can be found in the Co-creation Navigator (www.ccn.waag.org).

'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).

[.. the finale version of this manual will present best practice examples from MOST partners]

In the INVITE Phase SCP community partners were selected and invited to join a Kick off meeting and to 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. However, formal educational frameworks a school is restricted to and in our particular case the MOST topic areas are already set and partners invited to the co-creation process are already selected by their expertise and engagement in the given area of action.

Students and teachers

In a school context, social forms such as the world café or the fishbowl method are suitable for finding a topic together. Method sheets and tips for implementation can be found in the appendix (p.).

[.. the finale version of this manual will present best practice examples from MOST partners]

In principle, every topic that has **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 information on currently much discussed topics. An increased interest in themes can always be seen where controversial topics are dealt with.

The framework of the MOST project specifies to deal with the choice of topics in the areas of "waste management" and "energy". In order to offer students the basic knowledge informing the relevant topics, it is advisable to hold a "Kick-off lesson". This is where basic information and background information on a main topic should be developed. As a result, individual project teams based on their specific interests will come together using the method above and share ideas which content should be addressed and how.

It is recommended to invite students' representatives to participate in co-creation sessions with community partners, in order to be able to take up any ideas and thoughts of the participants. In this wise, every idea flows into the topic finding process and project ideas that pursue similar topics can be bundled and students and community members come together.

Further, the co-creation process defines shared goals, tasks are distributed, milestones are set, human and financial resources are estimated and timelines are planned.

Define the goals

The success of a SCP project, regardless of the context in which it takes place, is measured by the achievement of the goals set. However, goals also provide a framework for orientation within the project. It is important that the goals 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 term (e.g. people's shopping behavior is influenced over the long term). In order to recognize whether goals have been achieved, it is necessary that there is general measurability. On the way to the higher-

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

level project goal, further steps can be interposed for control reasons. A list of **milestones** that build on one another is helpful here.

[.. the finale version of this manual will present best practice examples for goals set by MOST partners]

Hint: In order to be able to look again afterwards what has been said on which topic, it makes sense to keep minutes!

Share responsibilities

Talk to each other. As in many areas of society, when carrying out a project it makes sense to have clarifying and informative consultations on a regular basis. To arrange fruitful consultation setting amongst project group members, we suggest the following guide:

Guide to successful project management discussions	
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 structure in your conversation. In addition, the dots will help you orientate yourself in case you lose the thread.
Invitations	Invite all relevant persons. Everyone, participating in the project, should be informed about the conversation.
Minutes	In order to recapitulate individual conversations afterwards, it is helpful to appoint a person taking the minutes.
Conversation rules	Follow the rules of conversation: <ul style="list-style-type: none"> • 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.

If the project is planned for a longer period of time, 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 productive 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 communication within the project. The link list should also help in advance to query prior knowledge and interests in order to find project groups.

[.. the finale version of this manual will present best practice examples for sharing responsibility by MOST partners]

- **ACT**

Set a time line

The question of the length of time that an SCP takes 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 also end after one or two weeks. 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.) endures. In addition, it should always be kept in mind that a project not only takes time to implement, but that the evaluation phase also 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, they can, if possible, be embedded in everyday school life and the curriculum. Interdisciplinary treatment of the projects is also possible.

If projects are already being planned, 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. But 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 in order to develop learning processes and to promote the scientific knowledge and transversal competencies of the participants.

[.. the finale version of this manual will present best practice examples for putting the SCP into practice by MOST partners]

Themes and Topics

The topics of the projects should be in the areas of waste (2021) and energy management (2022). In addition, the projects have a benefit for the community and address the needs of the region.

Besides, the students in the project groups should **jointly decide** on a topic that is **socially relevant** and **requires scientific or technological solutions**. The decision on a socially relevant headline concerning the region, increases the interest and participation of the community members

Pursuing a common goal that actually serves community needs will develop not only shared ownership of possible solutions among project participants but raises the acceptance of outcomes.

In order to get the students excited about the projects, it is advisable that the SCP leader or the teacher conduct a kick-off unit on the topic. Here attention can be drawn 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 (the school as a whole unit tries to save energy) or a waste avoidance week.

Develop a Hygiene and Safety Plan

Because we are currently in a pandemic, it is important to develop a Health and Safety strategic plan which will be applied in the context of all SCP activities. Current national codes of conduct and guidelines must be followed and appropriate precautions need to be taken.

In many cases, projects and project work are associated with regular face-to-face exchanges. In order to avoid infection with unwanted viruses, thorough hand washing is essential. In addition, the specified safety and precautionary measures should always be observed. Special situations require special actions to be taken. Contact with the project members involved should be avoided as far as possible during an ongoing pandemic, unless otherwise specified by the government. Teachers should be informed at all times about the progress and procedures of the project groups in order to provide any safety instructions (e.g. working with garden tools, hazardous substances).

Since this is a community project, it is important that permission from parents or the rectorate is obtained as soon as groups of students outside of the school and with people from the community work on their projects. In addition, the SCP leader should be informed about the individual steps taken by the students.

In the following you'll find two projects which work as an example for implementation of an SCP. The first shows a general example. In the second, a possible concrete action plan is shown exemplary.

It is necessary to mention, however, that the framework (time and themes) in which these SCPs take place is variable. Projects can last for an entire school year but can also be completed after a few weeks. But it is important, that at least 5 school community members participate in the project. To evaluate the project, it is necessary to fill out a questionnaire, before and after the project.

Example 1:

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 period of time 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 in the local shopping center, and the local press also reports.

As all participants contribute their knowledge and skills to the project, they not only learn 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, which in the long term will lead to more students in Europe embarking on a scientific career in the future - a goal that, in view of 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)

Example 2:

Date	Duration	Activities
04.02.21	2h	Fill out the questionnaire, Find a topic: Waste separation at our school
04.02.21	2h	Set up a project plan
11.02.21	2h	Lecture on the topic of waste separation by the local waste company
11.02.21	2h	Discussion on how and in what form rubbish should be separated at the school in the future - the procurement of rubbish bins is initiated
18.02.21	2h	What's the point in recycling rubbish? – Calculations in class
25.02.21	2h	Production of signs and stickers for garbage cans for waste separation
04.03.21	2h	Attach the information signs and stickers, take photos, design posters for the regional fair and shoot a video clip that shows on the homepage how the students should separate rubbish. In the end, fill out a questionnaire.

(c.f. <https://icse.ph-freiburg.de/freiburgprotectstheplanet/werde-aktiv/>, 03.02.21)

- **SHARE**

- *MOST Fair:*

The MOST Fair is held at the end of each school year, as soon as all SCPs have been completed. 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 in order to reach a broad public.

As one goal for the MOST project is to establish Open School Networks, the MOST Fairs will support the establishing process and will bring together schools who are already member of the school-community teams and representatives from potential partner schools will be invited to learn more about the Open School-RRI-Idea.

SCP presentation can be done via:

- poster
- video
- slide presentation
- hands on activities
- theater play/role play
- young researchers conference

- etc.

The MOST Fair is intended to provide the framework for all those involved to meet again to promote cooperation and networking at regional level.

Presenting of the results publicly is an important side effect for the students, as this offers them visibility and approval for their work. This 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 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 post, local and regional newspapers etc.)
- the national and international society (eg. 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 policy makers will learn about successful SCPs, the more will be inspired to become change agents themselves and to support the Open School movement.

e.g. particularly catchy activities can be used as figureheads to showcase project goals and actions.

[.. the finale version of this manual will present best practice examples for successful public relations strategies implemented by MOST partners]

- **EVALUATE**

In addition to the evaluation within the MOST project and its related research, it is advisable to carry out an evaluation for the class and the school itself to determine to what extend a school community project was successful. Each SCP should be evaluated as an individual in order 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 a understanding of how scientific processes work out.

Various methods like a questionnaire, checklists or internal feedback talks can be useful. For an evaluation within the school, we recommend a 5 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 ahead 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.), data base systems or paper-pencil tests, audio/video graphs, photos, collections of artefacts produced during activities (e.g. students project ideas, participants expectations in 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 are able to 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 to 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.

On the individual school level, the evaluation process relates to the project carried out by the school and therefore serves as a source of information for the SCP leader and the school itself. In compliance with the general rules of project management at least a short evaluation phase should be part of every project. In addition, a scientific evaluation of lessons learned out of all conducted SCPs will take place on a larger scale while using the evaluation report which results out of WP8. To ensure the quality of this overall evaluation results, it is necessary that all participants (students, teachers etc.) will fill out the evaluation forms presented in WP 8.

[.. the finale version of this manual will present best practice examples for evaluation questions and tools tested by MOST partners]

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

[.. the finale version of this manual will present lessons learned collected by MOST partners]

4. Conclusions and Recommendation

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 in order to be able to successfully implement a project. In addition to the description of the phases, there are recommendations for action for the actors involved, as well as examples for implementation. In order to achieve the best possible results, it is advisable to address the first phase "INvite" to a broad audience in order to reach as many people as possible from the most diverse directions and sectors of society. Another sticking point is the first meeting of the students with stakeholders, which should be well planned and thought out in order to guarantee the best possible cooperation over the duration of the project. 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 finale version of this manual will address final conclusion und recommendation]

4. Appendices

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 and evaluation.

Openschooling 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 policy makers, 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

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 here before the meeting. Invitations are sent by email	Various templates already activated in the free 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 disappearing more and more compared to kahoot. Results can be downloaded as PDF.	Free!
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!

Appendix 2: Method sheets