

Evaluation concept M 8.1









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Executive Summary

The main aim of the MOST evaluation concept was to provide a research design and a collection of evaluation instruments that fulfil the purpose of the project evaluation. The project evaluation had a twofold purpose: on one hand it intended to measure the project's short-term impact in terms of the promotion of science literacy, perceived relevance and positive attitudes towards science and scientific careers, as well as increased sustainability awareness and individual capacity to act on environmental issues. On the other hand, it should provide a collection of multiple case studies from ten European countries, illustrating how School Community Projects (SCP) may be articulated to adapt to different regional contexts, as well as barriers and supportive aspects for their successful and productive implementation.

As a consequence of the participatory development of the evaluation concept, a collection of research questions and evaluation instruments was provided. The collection of evaluation instruments included a template for reporting on case studies, questionnaires for the main participants (students and teachers) used either as pre/post instruments (student questionnaire) or just post instruments (teacher questionnaire), along with guidelines and basic questions for the semi-structured interviews of a wide range of stakeholders using focus group discussions (teachers, students, school leaders, MOST advisors, family members as well as representative from the scientific community, business or policy sectors).

Main Report

1. The MOST evaluation concept

The evaluation concept has been developed based on the description of work and the feedback received from the consortium as a whole, in the first project meeting, as well as from specific partners acting as expert reviewers (especially from WARA and SFR, but also experts from NTNU, UOM, CUNI and UU).

As a consequence of the participatory development of the evaluation concept, a collection of research questions and evaluation instruments has been provided.

Due to the scope and ambition of the evaluation concept, a mix methods approach is used combining quantitative and qualitative methods. Mix methods allow researchers to obtain a richer picture, combining the strengths of quantitative and qualitative approaches and overcoming their particular weaknesses (Creswell, Plano, & Clark, 2011; Yin, 2009).

We have developed specific questionnaires for the main target groups (students and teachers) and a template for regional case studies focusing on the key concept behind the MOST project: the development of School Community Projects (SCP) as means to connect school and communities and to provide more authentic, relevant and meaningful STEM education.

The collection of instruments used to evaluate the short-term impact of the MOS project and to provide a good understanding about how to conduct productive and successful SCP is:

- Student pre/post questionnaire.
- Teacher post-questionnaire.
- Forms to collect background information from the case study participants.









- Semi-structure group interview for students
- Semi-structure group interview for stakeholders
- Template for reporting on the MOST case studies.

According to the description of work, each partner is expected to run a minimum of 60 SCP (20 in the first run and 40 in the second round), involving at least 60 teachers and 600 students per country as a whole. SCP are expected to involve at least 5 school community members each, resulting in 300 community members per country as a whole at the end of the project.

The student questionnaires have been designed to evaluate the impact of the project on students' science literacy, perceived relevance and their attitudes towards science and scientific careers, as well as the impact of the project on participants' awareness with regards to environmental challenges and their role in finding solutions.

The teacher questionnaire includes dimensions related to context-dependency, self-efficacy and expectancy for success, perceived relevance, difficulty and costs as well as anxiety and enjoyment.

The MOST questionnaires for students and teachers have been developed on the basis of theoretical models from the specialised literature and previously validated instruments. The initial versions of the MOST questionnaires have been submitted to external validation by experts. This report includes the templates used to collect experts' feedback for validity. The internal consistency of the MOST questionnaires is to be measured using statistics methods after piloting.

The template for the case studies includes basic questions and guidelines to provide evidence that support regional case study reports, as well as protocols for the group interview of a wide range of stakeholders (teachers, school leaders, MOST advisor, community members...).

The final collection of case studies from the different participating countries (three case studies per country), would offer a comprehensive European picture illustrating how SCP may be conducted in a wide range of educational context. In addition, case studies would provide a better understanding of how to conduct productive and successful SCP for contributing to a more interested, sustainable and scientifically literate society and will allow us to develop recommendations for further School-Community-Projects.

In the following sections of the MOST evaluation concept, we include the research questions that guide the evaluation of the project, the collection of instruments and the templates for the expert validation of the student and teacher questionnaires.

2. Research questions

The following research questions frame the evaluation of the MOST project:

- 1. What are the characteristics of good SCPs and the main barriers for a successful implementation and networking?
- 2. How do participants perceive and experience SCP?
- 3. How do SCPs affect students' attitudes and beliefs about science, scientific careers and the relevance of science and science education for their lives? Are there gender differences?
- 4. How do SCPs affect science literacy and participants' awareness with regards to environmental challenges and their role in finding solutions? Are there gender differences?







3. Development of the MOST student questionnaire

The MOST student questionnaire is an evaluation instrument to be administrated before and after students' participation in the MOST project, that intends to measure the project impact on the participating students.

Items have been formulated based on previously existing and validated instruments in the specialized literature, and have been slightly adapted to better fit the project characteristics and purposes. In those cases, were no existing instruments were available, items have been developed based on theoretical models and experts' definition (this is the case for items in the science literacy dimension).

Items are grouped in different dimensions. The following dimensions have been considered:

- Perceived relevance
- Interest and enjoyment
- Self-efficacy
- Science literacy
- Intention to study a scientific career
- Sustainability knowledge
- Sustainability attitudes
- Sustainability behaviors

The MOST student evaluation questionnaire is available in annex I. It has been submitted to the evaluation of its content validity by experts according to the template available in annex II.

4. Development of the MOST teacher questionnaire

The MOST teacher questionnaire is an evaluation instrument to be administer after teachers' participation in the MOST project, that intends to evaluate how the participant teachers have perceived the experience in terms of its relevance for students' learning, difficulty for implementing SCP and cost in daily teaching. Furthermore, the questionnaire incorporates items that evaluate how teachers perceived themselves when implementing SCP in terms of self-efficacy and expectancies for success. In addition, some items have been introduced to measure teachers' enjoyment and anxiety along with questions that intends to collect information about how the teaching and learning context has influenced the teachers' attitude to implement innovation.

Items have been formulated based on previously existing and validated instruments in the specialized literature, and have been slightly adapted to better fit the project characteristics and purposes.

Items are grouped in different dimensions. The following dimensions have been considered:

- Perceived relevance
- Perceived difficulty and "cost"
- Enjoyment/Anxiety
- Self-efficacy
- Expectancy for success
- Context dependency









5. Participants in the MOST case studies

Any partner should provide 3 case studies illustrating how SCP have been conducted in their own national/regional context. To develop an in-depth view of how SCP have been perceived and experienced by different participants and the key aspects influencing the whole process and its outcomes, it is recommended to involve different stakeholders, including not only the main actors (students and teachers), but also any other people playing a key role in the development of the SCP (MOST advisors, school leaders, community members...).

Group interviews have been chosen as the best instruments to catch different perspectives while fostering discussion and exchange and optimising time and resources.

According to the arguments provided above, any case study should include at least **two group interviews**: a students' group interview and a stakeholders' group interview:

The **students' group interview** should involve 3-5 students. You should select students on the basis of their role in the SCP and capacity to represent different types of students, according to their level of interest and engagement.

The **stakeholders' group interview** should involve at least 1 teacher, 1 school leader, 1 MOST advisor and 2 community members (who can represent parents, professionals from different fields, policy makers, etc.).

Participants in case studies are chosen purposefully in order to support a better understanding of all the key issues related to the development of SCP. In this respect, it is important to explain how you have chosen the participants in your MOST case studies.

Description of participants in the case study

Describe their main characteristics and background. You can use your own knowledge about participants, their personal introduction before the group interview and the information collected through the initial form (see the form to collect participants' background information).

Participant nº	Underline the type of participant: Student, teacher, school leader, MOST advisor or community member.
Age	
Gender	
Pseudonym	
Why did you choose he/her	
Relevant background information	







Participant nº	Underline the type of participant: Student, teacher, school leader, MOST advisor or community member.
Age	
Gender	
Pseudonym	
Why did you choose he/her	
Relevant background information	

• • • •

Insert as many tables as participants you have in your case study.







6. General guidelines for conducting a semi-structured interview¹

These general guidelines are applicable to any of the group interviews conducted for the MOST case studies.

Initial recommendations

- Get familiar with the interview guidelines provided. If possible, practice the interview in advance.
- Translate the interview guidelines into your language, being careful about the wording of the questions.
- Think of possible phrases that support the transition between the different questions.

Preparing the interviews

- Choose a place for the group interview that is quiet and free from interruptions.
- Test the recording system.
- Record the interview and transcript it afterwards. Merely taking notes brings some risk of missing important information.
- Begin with an explanation of the purpose of the interview; intended uses of the information and assurance of confidentiality (see interview guideline).
 If appropriate, clarify that the interview has been approved by relevant officials.
- Ask only one question at once. Stay close to the wording you prepared in your interview guide.
- Enjoy the silence.
- Use probing techniques to get a deeper insight. (Would you give me an example?, Can you elaborate on that idea?, Would you explain that further?, I 'm not sure I understand what you' re saying., Is there anything else?)
- Maintain a neutral attitude. Interviewers should avoid giving the impression of having strong views on the subject under discussion.
- Do not put words into participants' mouths. Let them say things in their own words.

¹ These general guidelines are based on MaSDiV interview guide https://icse.eu/wp-content/uploads/2019/03/WP3 Experimentation-protocol D3.2 Data-collection-instruments-for-case-study.pdf







- Provide feedback and reinforcement during the interview (Your comments on weakness are really helpful. We are about halfway through. You have been telling me really important things. How is it going for you?)
- Maintain control by knowing what you want to find out, by having prepared the interview guide and by listening attentively.

As Patton stated (2002):

"If what people have to say about their world is generally boring to you, then you will never be a great interviewer. Unless you are fascinated by the rich variation in human experience, qualitative interviewing will become drudgery" (p. 341).

Introducing the interview to participants

Here you can find some ideas of how you may introduce yourself and start the conversation with the interviewees:

I want to thank you for allowing	us to have this discussion with you to	oday.
My name isappropriate, short introduction of	I am of the interviewer, position in the pro	<ij ject>.</ij

It is important to create a nice and relax atmosphere that favour a fluent communication. You might even talk a little about yourself (but remember time is limited). It is important to show interest in the person and to listen carefully.

After thanking them for their participation and introducing yourself, you should ask participants to filled in the form to collect their consent and the background information. After filling in in the initial form, you could invite them to briefly introduce themselves before starting the group interview.







7. Information letter for parents/guardians

Dear Parents/Guardians,

We are a group of researchers from the MOST project. It is a European project involving 23 institutions from 10 European countries, that intends to improve education across Europe through project-based learning. The main idea is to connect science and maths learning to what students need to understand and improve their surroundings. Through their participation in school-community-projects on waste management and energy consumption, students will have the opportunity to understand and apply mathematics and science to solve real world problems, developing interesting competences and getting better prepared for life, while developing a better understanding of current environmental issues and what they can do to improve them.

The MOST research team is responsible for evaluating the potential benefits of the project on the participating students. In order to make it possible, we will need your consent as parents for your son/daughter to take part in the MOST research. Your contribution in this respect, is essential to advance research on how to improve education.

Anonymisation and pseudonymisation processes will ensure that your son/daughter real name is not known outside the project or related to the research results and students are free not to participate and to withdraw at any point without justification.

The responses of the questionnaires will be analysed by an independent research team based at the University of Jaén, Spain. This national team will only be responsible for collecting data from questionnaires, students' work and recordings (audio or video).

We would appreciate having your consent by filling the form attached and sending it to school with your son/daughter.

In the case of any difficulty, do not hesitate to contact our national MOST advisor xxxx@xxxx or our Data Protection Officer xxxx@xxxx

Yours faithfully,

Name of the national partners

Contact details of national partners









8. Parents or Guardians' consent form

In order to give your consent, please, tick the appropriate boxes:	
I have read and understood the project information letter	
I allow my son/daughter to fill in anonymous short questionnaires about the project	
I give my consent for my son/daughter to participate in a group interview with audio recording	
I allow my son/daughter to be audio recorded for research purposes	
I allow my son/daughter to be video recorded in teaching and learning situations for research purposes	
I give my consent for the analysis of my son/daughter's work for research purposes	
I understand that my son/daughter participation is voluntary and I can withdraw my consent at any time without having to give any reason for why I no longer want to give my consent	
I understand that personal data will not be revealed to people outside the project	
I understand that my son/daughter's words maybe quoted in publications, reports, web pages and other research outputs, though never referring to his/her real name.	
I agree for the data collected to be archived at specific repositories for research purposes, knowing that data will only being publicly accessed after anonymization and pseudonymization processes.	
Name of parent Signature of parent/guardian	Date
Name of student	
Your consent is greatly appreciated. Thank you!	





9. Form to collect the background information from the students participating in the group interview ²

Dear student,

This interview is part of the evaluation of the MOST project in which you have participated. The main goal of the MOST project is to improve education by connect what is taught at school to what you need to understand the world around you and to improve your surroundings, in collaboration with different people from your community (families, businesses, public institutions, NGO, etc.). In this way, you will have the opportunity to understand and apply mathematics and science to solve real world problems and getting better prepare for life.

The main purpose of this interview is obtaining insight into how you, as participants, have experienced SCP. The interview will take about 55 min. I will be recording the session because I don't want to miss any of your comments.

All responses will be kept confidential. We ensure that any information provided does not identify you as the respondent.

Remember, you don't have to talk about anything you don't want to and you may end the interview at any time. Do you have any questions?

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AIC Y	you	willing	ιυ	pai titi	pate	111	UIIIS	IIIIC	VIC	/V :

I	am	willing	to	particip	ate in	the	interviev	N

☐ Yes	□ No
-------	------

² Distribute this form to any of the participants in the student group interview and give them 5-10 minutes to filled in







The information collected will be used only for research purposes to evaluate the project. We will identify the information provided by you using a personal code, so your personal name is not known.

Plea	ise c	hec	k yc	ur a	nsw	ers	like	this	:																
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	1.	Cł	neck	the	first	t let	ter d	or yo	our f	irst	nam	e.													
Α	В	С	D	Е	F	G	Н	1	J	K	L	M	N	0	Р	Q	R	S	Т	U	٧	W	X	Υ	Z
	2.	Cł	neck	the	first	t let	ter d	of yo	our r	noth	ner's	firs	t na	me.											
Α	В	С	D	Е	F	G	Н	1	J	K	L	M	N	0	Р	Q	R	S	Т	U	٧	W	X	Υ	Z
	3.	Cł	neck	the	sec	ond	lett	er o	f you	ur m	oth	er's	first	nan	ne.										
Α	В	С	D	Е	F	G	Н	I	J	K	L	М	Ν	0	Р	Q	R	S	Т	U	V	W	Χ	Υ	Z



Check the day of your birthday.





Please enter today's date			
What year were you born in? (e.	g. 2005)		
Are you female or male?	☐ female	□ male	

Initial questions for the participants in the student group interview:

You can provide them in advance to let participants enough time to respond to them in a written way, or just distribute them some minutes before starting the interview. You can even consider to discuss them orally if you have favourable conditions for that:

- 1. What is your favourite school subject?
- 2. Which subject do find the most difficult at school?
- 3. What subject do you like the least at school?
- 4. Do you consider yourself as a good, bad or medium student at school? Why?
- 5. What do you like to do in your free time?
- 6. Did you enjoy taking part in the SCP? Why?
- 7. What did you like most in the school community projects?
- 8. What did you like less in the school community projects?







10. Form to collect the background information from the teacher/s participating in the stakeholder group interview ³

Dear teacher,

This interview is part of the evaluation of the MOST project in which you have participated. As you know, the MOST project is an international initiative involving 23 institutions from 10 European countries that collaborate to improve STEM education through project-based learning. The main idea is to connect what is taught at school to what your students need to understand and improve their surroundings, in collaboration with different people from their community (families, businesses, public institutions, NGO, etc.). In this way, they will have the opportunity to understand and apply mathematics and science to solve real world problems, developing interesting competences and getting better prepare for life.

The aim of this interview is obtaining insight into how you, as participants, have experienced SCP. The interview will take about 55 min. I will be recording the session because I don't want to miss any of your comments.

All responses will be kept confidential. We ensure that any information provided does not identify you as the respondent.

Finally, we will transcribe the whole interview and send you the transcript to ask for approval.

After analysing the information, we will produce a national report. Finally, an international report to the European commission will be delivered at the end of the project including recommendations on how to conduct SCP to improve STEM education across Europe. I will be happy to send you both reports, if you are interested.

Remember, you don't have to talk about anything you don't want to and you may end the interview at any time. Do you have any questions?

Are you willing to participate in this interview?

I am willing to participate in the interview

Name	Signature	Date

³ Distribute this form to the teacher/s participating in the stakeholders' group interview and give them 5-10 minutes to filled in







Please enter today's date		
What year were you born in? (e	.g. 2005)	
Are you female or male?	☐ female	□ male

Initial questions

You can provide them in advance to let participants enough time to respond to them in a written way, or just distribute them some minutes before starting the interview. You can even consider to discuss them orally if you have favourable conditions for that:

- 1. Why did you decide to become a teacher?
- 2. What are your most important goals as a teacher?
- 3. For how many years have you been a teacher?
- 4. How long have you been teaching at this school?
- 5. How would you describe your school?
- 6. How many teachers and students are there?
- 7. What are the main challenges in you school?
- 8. How would you describe the diversity in your school?
- 9. How did you know about the project and SCP?
- 10. Why did you decide to participate?
- 11. How was the structure of the teamwork in the SCP?
- 12. Were the materials provided by the consortium useful?
- 13. Was there something you needed and you did not get?







11.Form to collect the background information from the school leader participating in the stakeholders' group interview ⁴

Dear participant,

This interview is part of the evaluation of the MOST project in which you have participated. As you know, the MOST project is an international initiative involving 23 institutions from 10 European countries that collaborate to improve STEM education through project-based learning. The main idea is to connect what is taught at school to what your students need to understand and improve their surroundings, in collaboration with different people from their community (families, businesses, public institutions, NGO, etc.). In this way, they will have the opportunity to understand and apply mathematics and science to solve real world problems, developing interesting competences and getting better prepare for life.

The aim of this interview is obtaining insight into how you, as participants, have experienced SCP. The interview will take about 55 min. I will be recording the session because I don't want to miss any of your comments.

All responses will be kept confidential. We ensure that any information provided does not identify you as the respondent.

Finally, we will transcribe the whole interview and send you the transcript to ask for approval.

After analysing the information, we will produce a national report. Finally, an international report to the European commission will be delivered at the end of the project including recommendations on how to conduct SCP to improve STEM education across Europe. I will be happy to send you both reports, if you are interested.

Remember, you don't have to talk about anything you don't want to and you may end the interview at any time. Do you have any questions?

Are you willing to participate in this interview?

I am willing to participate in the interview

Name	Signature	Date

⁴ Distribute this form to the teacher/s participating in the stakeholders' group interview and give them 5-10 minutes to filled in









Please enter today's date			
What year were you born in? (e	.g. 2005)		
Are you female or male?	☐ female	□ male	

Initial questions

You can provide them in advance to let participants enough time to respond to them in a written way, or just distribute them some minutes before starting the interview. You can even consider to discuss them orally if you have favourable conditions for that:

- 1. For how long have you taken this position?
- 2. What are your most important goals as a school leader?
- 3. What is your background?
- 4. How would you describe your school?
- 5. How many teachers and students are there?
- 6. What are the main challenges in you school?
- 7. How would you describe the diversity in your school?
- 8. How did you know about the project and SCP?
- 9. Why did you decide to participate?









12.Form to collect the background information from the MOST advisor participating in the stakeholder group interview ⁵

Dear participant,

This interview is part of the evaluation of the MOST project in which you have participated. As you know, the MOST project is an international initiative involving 23 institutions from 10 European countries that collaborate to improve STEM education through project-based learning. The main idea is to connect what is taught at school to what your students need to understand and improve their surroundings, in collaboration with different people from their community (families, businesses, public institutions, NGO, etc.). In this way, they will have the opportunity to understand and apply mathematics and science to solve real world problems, developing interesting competences and getting better prepare for life.

The aim of this interview is obtaining insight into how you, as participants, have experienced SCP. The interview will take about 55 min. I will be recording the session because I don't want to miss any of your comments.

All responses will be kept confidential. We ensure that any information provided does not identify you as the respondent.

Finally, we will transcribe the whole interview and send you the transcript to ask for approval.

After analysing the information, we will produce a national report. Finally, an international report to the European commission will be delivered at the end of the project including recommendations on how to conduct SCP to improve STEM education across Europe. I will be happy to send you both reports, if you are interested.

Remember, you don't have to talk about anything you don't want to and you may end the interview at any time. Do you have any questions?

Are you willing to participate in this interview?

I am willing to participate in the interview

		
Name	Signature	Date

⁵ Distribute this form to the teacher/s participating in the stakeholders' group interview and give them 5-10 minutes to filled in









Please enter today's date									
What year were you born in? (e.g. 2005)									
Are you female or male?	☐ female	□ male							

Initial questions

You can provide them in advance to let participants enough time to respond to them in a written way, or just distribute them some minutes before starting the interview. You can even consider to discuss them orally if you have favourable conditions for that:

- 1. What is your background?
- 2. How did you know about the project and SCP?
- 3. Why did you decide to participate?
- 4. How was the structure of the teamwork in the SCP?
- 5. Were the materials provided by the consortium useful?
- 6. Was there something you needed and you did not get?







13. Student group interview

Before the group interview

Read the general guidelines about how to prepare the group interview and how to create a good atmosphere for communication and exchange. Introduce the project and yourself, thank students for their participation and ask them to filled in the initial form to collect their consent and their background information. After filling in in the initial form, you could invite them to briefly introduce themselves before starting the group interview. After the introduction you should start posing the main questions for discussion:

Central questions for the student semi-structure group interview

- 9. How did your SCP start?
- 10. Who suggested the topic and the questions to be answered by your SCP?
- 11. Which was the main objective of your SCP?
- 12. Did you have the opportunity to participate in the organization of the SCP? Were your suggestions taken into account?
- 13. What kind of information did you need to collect or find out for your SCP? How did you get it? How did you plan and conduct your SCP?
- 14. How did the teacher support you when participating in the SCP?
- 15. Were science concepts and ideas important for your SCP? Why? Can you give an example to explain your response?
- 16. What did you do for your SCP?
- 17. What did you learn from SCP?
- 18. In which way the SCP has been important for you?
- 19. In which way the SCP has been important for your neighbourhood in particular or society in general?
- 20. In which way the SCP has been important for life in the planet?
- 21. How did you feel when working in your SCP?
- 22. What did you find more interesting in your SCP?
- 23. What did you find more challenging or difficult in your SCP?
- 24. What did you find more helpful for conducting your SCP?
- 25. Have your ideas about current environmental/sustainability problems changed after participating in SCP? In which way?
- 26. Did you miss anything? Is there anything you would have needed for your SCP and you did not get?
- 27. What would you have done in a different way in your SCP?
- 28. Would you like your teacher to propose a new SCP again?
- 29. Would you recommend a friend to participate in SCP?
- 30. Is there anything else you would like to add?









14. Stakeholders' group interview

Before the group interview

Read the general guidelines about how to prepare the group interview and how to create a good atmosphere for communication and exchange. Introduce the project and yourself, thank attendees for their participation and ask them to filled in the initial form to collect their consent and their background information. After filling in in the initial form, you could invite them to briefly introduce themselves before starting the group interview. After the introduction you should start posing the main questions for the group discussion:

Central questions for the stakeholders' group interview

- 1. How did you know about SCP? How did you get involved in SCP?
- 2. What was your role in the SCP? What were your contributions to SCP?
- 3. How did the school support SCP?
- 4. How did the school collaborate with the community in the development of the project?
- 5. What were the main difficulties and barriers encountered? How were they faced?
- 6. From your perspective, what has been the main impact of SCP on students' learning?
- 7. From your perspective, what has been the main impact of SCP on teachers' professional development and collaboration?
- 8. From your perspective, what has been the main impact of SCP on the relation between the school and the community?
- 9. Was there something you needed and you did not get?
- 10. Is there something you would do in a different way next time?
- 11. What are your needs for the future or suggestions for improvement?
- 12. Will you engage in a new SCP?
- 13. Would you recommend other colleagues to engage in SCP?
- 14. Is there anything else you would like to emphasize, comment or share?





15. Template for the report of the MOST case studies

Country:

Number of case study⁶:

Partners are encouraged to draw on evidence to support their reports on the selected case studies. Evidence may come from different sources:

- Observers' notes and reflections.
- Teachers accounts of their experience when implementing SCP.
- Participants questionnaires.
- Participants' group interviews, with responses illustrated by quotations:

Please, illustrate and support your SCP report with evidence that back-up the information provided. Specify the source of information used and provide illustrative quotations, when possible.

Guiding questions	Information	Source/evidence
Describe the characteristics and socio-economic context where the school was embedded.		
Describe the main SCP participants: groups of students, teacher background, out-school participants (community members).		

⁶ 1, 2 or 3 (any country is expected to report 3 case studies)









Guiding questions	Information	Source/evidence
What was the title of the SCP that contextualized the case study?		
How was the topic selected?		
Which questions drove the project and who formulated them?		
How many days/weeks/months took the project?		
How many students were involved? How many of them were girls? Describe them (age group, gender rate).		
How many teachers were involved? How many of them were women? (just in those cases where SCP were addressed on a school-based, i.e., the whole school was involved).		
How did teacher/s implemented and support the SCP?		
How did the school support SCP?		
What was the role of students in the development of the SCP?		
Who from outside school, participated in the school community project as a community member, that is, as a		







Guiding questions	Information	Source/evidence
family member or a representative from other sectors (business, policy). Describe them: gender, age, profession, role in the project		
How were the community members chosen and engaged?		
What solutions were proposed to tackled the main problem addressed by the SCP?		
Which were the main contributions of the SCP to the community?		
How was the SCP disseminated and shared?		
Did the SCP participate in the SCP fair?		
What are the characteristics of good SCPs and the main barriers for a successful implementation?		
How do participants perceive and experience SCP?		







16.Student pre-questionnaire

Dear student,

You are going to participate with your teacher and school mates in the European project called MOST: Meaningful Open Schooling Connects Schools To Communities. MOST intends to help you learning mathematics and science in a funny and useful way, while doing School Community Projects (SCP), where you will plan and do activities to solve environmental problems related to waste and energy, using what you learn to improve your community, with other community members.

To know whether the MOST project achieves its main goal, we need to ask you some questions before and after participating in MOST.

Your parents/guardians have already allowed you to participate in this. The information collected through this questionnaire will be shared and used only for research purposes, without putting your name on your responses. So instead of your name, we need a code that you will generate following the instructions provided in the next page.







To generate your personal code, write:

first sec	first letter of your first name: first letter of your mother's first name: second letter of your mother's first name: Day of your birthday:																								
-	Now, transfer your code here:																								
Ma	ark	(cro	ss) t	he f	irst	lette	er o	r yo	ur fi	rst r	nam	e.													
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Ma	ark	(cro	ss) t	he f	irst	lette	er of	f you	ur m	oth	er's	firs	t na	me.						,					
Α	В	С	D	Е	F	G	Н	I	J	K	L	М	N	О	Р	Q	R	S	Т	U	V	W	Х	Υ	Z
Mark (cross) the second letter of your mother's first name.																									
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W	hat	yea	r we	re y	ou l	orn	in?	(e.g	g. 20	05)															
Are	Are you female or male? ☐ female ☐ male																								
На	Have you ever made projects at school? ☐ YES ☐ NO																								





Please choose your answers like this: \square
Please correct, if needed, your answers like this \square

	To what extent do you agree?	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
1.	I am concerned about how much electric energy we consume at home					
2.	I can explain the importance of biodiversity using science ideas					
3.	My family buys second-hand goods.					
4.	I know how I can reduce the amount of plastics we use					
5.	I know how to make new items from waste					
6.	When solving a scientific problem, I compare and evaluate information to determine what is most relevant					
7.	I switch the computer/tablet off if I am not using it					
8.	I can explain the effects of the humans' activity on the planet using science ideas					
9.	I care about pollution					
10.	I will become a scientist in the future					
11.	I know how I can reuse or give a second use to my old things					







To what extent do you agree?	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
12. I care about how much waste we produce at home					
13. I know how to save electric energy					
14. My family chooses to cycle or walk when we are going somewhere, instead of travelling by motor vehicle.					
15. I would enjoy working in a science-related career					
16. I make actions to improve the environment					
17. I can explain climate change (why the Earth is raising its average temperature) using science ideas					
18. I am worried about too many people using polluting cars instead of bicycles or public transports					
19. What I learn in science is not useful for my daily life.					
20. What I learn in science can help me in making good decisions					
21. When I collect data or find information, I am able to find similarities and differences					
22. When solving a problem, I try to find relevant information from various resources.					
23. I will not pursue a science-related study in the future					







To what extent do you agree?	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
24. I will study science if I get into college					
25. I never waste water					
26. When solving a scientific problem, I try to find patterns in experimental data					
27. What I learn in science helps me protect the environment					
28. I can explain the importance of energy saving using science ideas					
29. I separate food waste before putting out the rubbish when I have the chance.					
30. I will continue studying science after I leave school					
31. I know how I can reduce pollution					
32. What I learn in science classes can help me understand important contemporary issues					

Thank you!









17. Student post-questionnaire

Dear student,

You have participated with your teacher and school mates in the European project called **MOST**: Meaningful Open Schooling Connects Schools To Communities. MOST intends to help you learning mathematics and science in a funny and useful way, while doing School Community Projects (SCP), where you have planned and done activities to solve environmental problems related to waste and energy, using what you learn to improve your community, with other community members.

To know whether the MOST experience was interesting and valuable for you, we need to ask you some questions after participating in MOST.

Your parents/guardians have already allowed you to participate in this. The information collected through this questionnaire will be shared and used only for research purposes, without putting your name on your responses. So instead of your name, we need a code that you will generate following the instructions provided in the next page.









To generate your personal code, write:

5. first letter of your first name: ___

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	7.							mot	her'	s fir	st n	ame	e:												
	8.	Da	у от	you	r bii	rtna	ay:					_													
No	low, transfer your code here:																								
	5. Mark (cross) the first letter or your first name.																								
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Α	В	С	D	Е	F	G	Н	I	J	K	L	М	N	0	Р	Q	R	S	Т	U	٧	W	X	Υ	Z
7. Mark (cross) the second letter of your mother's first name.																									
Α	В	С	D	Е	F	G	Н	ı	J	K	L	М	N	0	Р	Q	R	S	Т	U	٧	W	Χ	Υ	Z
8. Mark (cross) the day of your birthday.																									
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Please choose your answers like this: \square
Please correct, if needed, your answers like this \Box

To what extent do you agree?	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
1. I am concerned about how much electric energy we consume at home					
2. I can explain the importance of biodiversity using science ideas					
3. My family buys second-hand goods.					
4. I know how I can reduce the amount of plastics we use					
5. I know how to make new items from waste					
6. When solving a scientific problem, I compare and evaluate information to determine what is most relevant					
7. I switch the computer/tablet off if I am not using it					
8. I can explain the effects of the humans' activity on the planet using science ideas					
9. I care about pollution					
10. I will become a scientist in the future					







To what extent do you agree?	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
11. I know how I can reuse or give a second use to my old things					
12. I care about how much waste we produce at home					
13. I know how to save electric energy					
14. My family chooses to cycle or walk when we are going somewhere, instead of travelling by motor vehicle.					
15. I would enjoy working in a science-related career					
16. I make actions to improve the environment					
17. I can explain climate change (why the Earth is raising its average temperature) using science ideas					
18. I am worried about too many people using polluting cars instead of bicycles or public transports					
19. What I learn in science is not useful for my daily life.					
20. What I learn in science can help me in making good decisions					
21. When I collect data or find information, I am able to find similarities and differences					
22. When solving a problem, I try to find relevant information from various resources					







To what extent do you agree?	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
23. I will not pursue a science-related study in the future					
24. I will study science if I get into college					
25. I never waste water					
26. When solving a scientific problem, I try to find patterns in experimental data					
27. What I learn in science helps me protect the environment					
28. I can explain the importance of energy saving using science ideas					
29. I separate food waste before putting out the rubbish, when I have the chance					
30. I will continue studying science after I leave school					
31. I know how I can reduce pollution					
32. What I learn in science classes can help me understand important contemporary issues					
33. I find school projects interesting					
34. I am sure I can do well in school projects					
35. The activities conducted in school projects are easy for me					







To what extent do you agree?	1 Strongly disagree	2 Disagree	3 Neither agree nor disagree	4 Agree	5 Strongly agree
36. I cannot understand the school projects					
37. I do not like taking part in school projects					
38. I make good contributions to school projects					
39. I enjoy participating in school projects					

Thank you!







18. Teacher post-questionnaire

Dear teacher,

Within the frame of the MOST project, you have been engaged in School Community Projects (SCP). The aim of this survey is knowing how you perceived this experience. Your point of view and help is essential for us to improve future actions and to provide recommendations for the European Commission. The completion of the survey (35 items) will take about 10 minutes. The information collected through this questionnaire will be used and shared anonymously only for research purposes. Be assured that all your answers will be handled confidentially and processed anonymously. All your responses are voluntary.

1. General information

day month
Please write today's date
Write the first letter of your first name:
Write the month of your birthday (in number 1-12)
Write the year of your birth (e.g. 1975)
Are you female or male?
Write the country where you teach:
Years of teaching experience (e.g. 12)
Your initial training, background (e.g.: Chemistry, Biology, Sciences, Maths, General Education)
Subjects you involved during the SCP implementation (e.g. Science, Maths, Technology):
SCP ID: Write the title of the SCP you have conducted with your students









2. Your SCP experience

SCP stands for School Community Project and refers to the project you have implemented/worked with students.

Based on your experience after implementing this project, please respond to which extend $\underline{\text{you}}$ agree to the following statements.

	ase choose your answers like this: \Box ase correct, if needed, your answers like this \Box					
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1.	I am confident I did what was expected from me in this SCP.					
2.	I felt nervous while implementing SCP.					
3.	I got new input for my teaching.					
4.	I believe I was successful applying SCP.					
5.	I believe that SCP promote students' general development as a citizens.					
6.	I think that SCP are useful to make students involved with society's problems.					
7.	I think this SCP will encourage my students to choose science careers.					
8.	I think that most teachers might find interdisciplinary approaches difficult to be implemented at school.					
9.	I have enough pedagogical knowledge to manage SCP well at school.					
10.	For me, the support of my Principal is decisive for whether or not I will implement SCP					
11.	The SPC helped me enriching my teaching.					









		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
12.	I think that most teachers might find cooperation with community as part of SCP to be difficult to realized.					
13.	I felt tense while implementing SCP.					
14.	For me, the support of my colleagues is decisive for whether or not I will implement SCP.					
15.	I learned a lot of new things during the experience with SCP.					
16.	I am able to deal effectively with questions from students related to the work conducted for SCP.					
17.	This SCP experience will be useful for my future work.					
18.	For me, having sufficient knowledge of specific teaching methods (e.g. inquiry-based learning, problem-based learning, etc.) is decisive for whether or not I will implement SCP.					
19.	I was able to effectively put into practice the pedagogical principles of SCP.					
20.	I think that most teachers might find cooperation with colleagues in SCPs difficult to be realized at school.					
21.	I think that the SCP contributed to people's awareness of environmental issues (e.g. energy/waste).					
22.	I have enough content knowledge to teach through SCP					
23.	For me, the availability of supporting teaching materials is an essential prerequisite for being able to conduct SCP.					









		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
24.	The SCP has also promoted my personal learning.					
25.	The SCP gave me the opportunity to collaborate and exchange with other teachers.					
26.	I think that most teachers might find SCP to be difficult to implement.					
27.	Teaching through SCP made me anxious					
28.	I think that SCP must be included in early childhood education					
29.	I think I can succeed in helping students reach a solution during SCP.					
30.	I have a sufficient know-how of SCP to support students effectively in classroom					
31.	I enjoyed implementing SCP.					
32.	I think that the SCP helped us to tackle environmental issues in community.					
33.	I felt enthusiastic using SCP in my teaching practice.					
34.	From my point of view, having sufficient scientific knowledge is decisive for whether or not I will implement SCP.					
Fina	ally:					
	. How would you describe your Bad rerall experience with SCP	Poor	Acceptable	e Good	d Exc	cellent







Thanks for your collaboration!



