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Boosting European Citizens' Knowledge and Awareness
of Bio-Economy Research and Innovation

D 4.2

Teacher trainings organisational framework

Report on the framework for the teacher training.

Document Description

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Executive Summary

This document describes the guidelines for organising teacher trainings in the BLOOM project. The D4.2 deliverable will support the WP4 pilot teachers in the organisation, implementation and evaluation of the teacher trainings they will hold in their countries, by offering them a clear, straightforward, systematic guide. A the core of the teacher trainings discussed in this document lies the BLOOM School Box (Task 4.1) which is currently being developed by the pilot teachers and will be finalized by February 2019.

The document is structured in two main parts. The first part is a general introduction for someone who is not familiar with the BLOOM project and who would like to understand what trainings the teachers will offer. Section 2 contains the actual guidelines pilot teachers need to follow in order to organise a successful BLOOM teacher training. These guidelines discuss the target groups of the teacher trainings, the organisational measures pilot teachers must take, a sample agenda of the trainings, the evaluation approach, certification of participants, and finally, we summarise the reporting needed in order to conclude a successful teacher training.

Teacher trainings represent an important and strategic component for the dissemination and uptake of innovative STEM practices, and for the BLOOM project in particular, the uptake of bio economy by young citizens. Teachers are an indispensable medium for transmitting the applications of bio economy in education at local level. Through these trainings, the number of teachers who will use bio economy in their lessons will grow exponentially.

The BLOOM pilot teachers will receive continuous support from both European Schoolnet (EUN) and the project hubs and partners. Through this deliverable, EUN aims to offer the pilot teachers a first go-to manual to guide them in organizing, delivering and evaluating their training activities.

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General introduction to the BLOOM teacher trainings

In BLOOM, 20 pilot teachers from ten countries are taking part in project activities (ten teacher coordinators and ten support teachers). These pilot teachers will organize teacher trainings in their own countries, with the support from European Schoolnet (EUN), BLOOM Hubs (where applicable) and other project partners.

The trainings will aim to achieve a **minimum of ten** participants trained per country. Furthermore, after each training, **at least five of the trained participants** will implement one the BLOOM School Box lesson plans, with the support of the pilot teachers. In total, a minimum of ten BLOOM trainings are expected.

The aim of this document is to provide guidelines for the organisation of teacher trainings by the pilot teachers, in order to attract a core group of teachers, train them in the use of the BLOOM School box, and collect their feedback and reflections on the BLOOM School box and the project itself.

The purpose of the teacher trainings is twofold. Firstly, the trainings have the objective to raise awareness and enhance knowledge of bio economy among primary and secondary school STEM teachers. Secondly, the trainings aim to empower trained teachers to use the BLOOM School Box in order to introduce the concepts and the perspectives of bio economy in their classrooms as a trigger to raise interest in science subjects and innovative practices.

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Guidelines for teachers to organise BLOOM teacher trainings

1.1. Introduction

In this guide, we will explain all steps and areas that you, as the organisers and facilitators, need to have in mind in order to successfully organise BLOOM teacher trainings.

1.2. Target groups

The target group of these trainings are primary and secondary school Science, Technology, Engineering, and Mathematics (STEM) teachers from ten countries: Austria, Spain, Sweden, Poland, Italy, Belgium, Portugal, Israel, Croatia, and Greece. You can also consider opening the teacher trainings to other teachers who are not necessarily STEM teachers but can make use of the BLOOM School Box. The minimum qualification is that participants are active teachers who can implement the School Box with students.

1.3. Organization and logistics

As a first step, you will have to inform EUN once you decide a date and time for a training.

In each country, you can choose to do the training together with your colleague or separately. In any of the two situations, you must ensure that you have the necessary support in order to facilitate the training adequately.

You should hold the trainings face-to-face, in accessible places. The room must have adequate lighting and heating for participants to concentrate on the training. Additionally, the room must hold all necessary digital equipment (e.g. project or computers, if participants cannot bring their own) and should be able to accommodate small group discussions.

You can also consider holding the trainings in the framework of other events taking place in your country in STEM education like for example, during a national teacher conference where the agenda allows training or workshop sessions.

In order to achieve maximum visibility for your trainings, or for any other additional support, EUN will liaise with its network of Ministries in Education to inform them of the schedule of your teacher trainings. The teacher trainings also take place in full collaboration with the network of BLOOM hubs (WP3), who form local communities of practice, composed of project partners and other local bio economy stakeholders. We encourage you to liaise with your correspondent Spanish, Polish, Swedish, and Austrian hubs for a country-level collaboration, should you require it.

Furthermore, EUN will provide you with support documentation like a standard project presentations, a standard presentation of the BLOOM School Box, promotional materials

(printed or digital), feedback and ongoing support for general organizational matters, which you can adapt to your own needs and situation. If you will prepare any materials or presentations yourself, you must add the project logo (Figure 1) and disclaimer on all materials (Figure 2).

Figure 1 - BLOOM logo

The BLOOM - Boosting European Citizens' Knowledge and Awareness of Bio-Economy Research and Innovation project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 773983. Neither the European Commission, European Schoolnet nor any person acting on behalf of the Commission is responsible for how the following information is used. The views expressed in this publication are the sole responsibility of the authors and do not necessarily reflect the views of the European Commission or European Schoolnet.

Figure 2 - BLOOM disclaimer

A good practice in organising the trainings is to create and distribute a **registration form** for participants. We have created a template registration form[1] that each of you can adapt to his or her own needs and language. The registration form plays another important role because it asks for the participants' consent for their picture or their video to be taken during the training.

An important element of the organization is collecting a **signature list** for each training you organize. The template for the signature list is available in Annex 1.

The impact of the teacher trainings will also be evaluated in the context of WP5. You are responsible for collecting this evaluation data via the **training evaluation questionnaire** in one of two ways. The first option is that you will have to print the questionnaire, in your language, distribute it at the end of each training and collect the participants' responses. Once you have collected all questionnaires, you will need to input the translated responses of your participants into the digital, central English version of the evaluation questionnaire. The second option is that you share directly with your participants the digital version of the questionnaire should your participants feel comfortable to respond in English.

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[1] https://goo.gl/forms/sW9qngUTBZCPa02I2

The analysis of the data will be done centrally by Zentrum für Soziale Innovation (ZSI), project coordinator and responsible for the project evaluation, according to the procedures stated in deliverable D5.2. The evaluation questionnaire can be seen in Annex 2.

1.4. Training agenda

While we will encourage you to organise the workshops as you think fits best your different countries' cultures, there are some minimum requirements you need to follow.

The trainings should last a minimum of 90 minutes but you can choose to extend this time if your resources allow it. It is not advisable that the duration exceeds three hours as participants have limited energy and attention.

The trainings have four main learning objectives for the participants. By the end of the training, participants should be able to:

1. Understand what bio economy is, its importance for society and for students.
2. Know what the BLOOM project is and what professional development possibilities it offers teachers.
3. Know what the BLOOM School Box is and how they can use it in their teaching activity.
4. Understand how to use it in order to be ready to implement at least one of the five lesson plans of the BLOOM School Box in their classroom.

Therefore, the proposed agenda, for a 90-minute training, is:

1. **Introduction to bio economy**. The training should start with a presentation on what is bio economy, its science applications, and social and economic aspects. The connection with STEM education should be stressed (e.g. future careers, connection with various educational subjects, "real-life" applications). *Suggested duration: 10 to 15 minutes.*
2. **Introduction to the BLOOM project**. During this moment, you should present the BLOOM project, its activities and objectives, but also, the educational activities and resources available to teachers like the BLOOM School Box (to be detailed further), the BLOOM MOOC and school competition. *Suggested timing: 10 to 15 minutes.*
3. **Presentation of the BLOOM School Box**. This will entail an overview of each of the five School Box lesson plans developed by you in the BLOOM project. The overview should contain information on which STEM subjects and curriculum topics each lesson plan supports, the age of students, and overall objectives and activities. *Suggested timing: 10 to 15 minutes.*
4. **Hands-on activity**. At this point, participants should be encouraged to try out one of the five lesson plans. You can decide in what format or which sequence of the lesson plans participants will try out, but you should take into consideration the

characteristics of the participants (e.g. subject taught), ages of students, etc. *Suggested timing: minimum 45 minutes.*

5. **Wrap-up**. Finally, the training should close with an opportunity for participants to ask questions and share their views on the training via the feedback questionnaire. *Suggested timing: 15 to 30 minutes.*

1.5.   Evaluation

As mentioned in section 1.3, the evaluation of the teacher trainings consists of a quantitative questionnaire meant to evaluate the organization of the training, the effectiveness in reaching their objectives, and other post-training reflections of the participants. The questionnaire will be translated in your ten languages and you will have to administer the translated version to training participants in pen and paper form or, should participants feel comfortable, you can also provide them the digital, online English version of the questionnaire. If you opt for the pen and paper version, you will then input, in English, the participants' answers in the digital English version of the questionnaire.

The teacher-training questionnaire was part of deliverable D5.2 but is added in Annex 2 as well for completeness.

Additionally, by the end of June 2019, you will have to provide a **qualitative report** discussing the minimum five implementations performed by the participants you trained. The template can be seen in Annex 3.

1.6.   Reporting

At the end of each training, you will have to provide to EUN a report-package. The reporting will consist of:

1. a summary of the training, with your lessons learned or reflections,
2. the agenda of the training,
3. the signature list,
4. pictures (from participants that gave their consent), and where possible, testimonials from participants.
5. qualitative report (Annex 3) discussing the minimum five implementations performed by the participants you trained. You can send this separately, by June 2019.

Using information from this report, EUN will disseminate the results via social media in collaboration with WP6 to increase the project visibility and outreach. No private information about training participants will be shared without their given consent, in order to respect their data privacy.

1.7.   Timeline

The core component of the teacher trainings is the BLOOM School Box, which you, with support from EUN, will develop by February 2019. Therefore, the teacher trainings will take place starting from February 2019 until June 2019, when the school year finishes.

Furthermore, under this timeline, you also need to ensure that your participants have enough time after the training, and before June 2019, to implement one of the BLOOM School Box resources.

1.8.   Certification

The teachers who took part in one of your trainings and afterwards implemented one of the five lesson plans of the BLOOM School Box will receive certificates on behalf of the BLOOM project, by June 2019. In order to do this, you will need to provide EUN a list of all the participants you have trained and have implemented one of the School Box resources.

2.   List of Annexes

Annex 1. BLOOM Teacher Training - Signature list

PARTICIPANTS

	Last Name	First Name	Country	Signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Annex 2. Questionnaire for participants of the BLOOM teacher trainings

Dear colleague,

Thank you for participation in the **BLOOM teacher training** in [venue], [date].

We, the BLOOM team, would like to have your opinion on the event you attended. This will help us to better understand your needs and improve the delivery of our activities.

We, the BLOOM team, would like to reassure you that all responses are anonymized in any reading by the evaluation research team, so that you can respond honestly and openly.

Please note: STEM is the abbreviation for Science, Technology, Engineering and Math. This category includes general as well as any of the specialist subjects within these fields of knowledge (e.g. biology, astronomy, chemistry, health studies, ICT, informatics, algebra, etc.).

Evaluation of the organization of the event

1. In which country are you teaching?

   ☐ Austria   ☐ Israel

   ☐ Belgium   ☐ Poland

   ☐ Croatia   ☐ Portugal

   ☐ Greece   ☐ Spain

   ☐ Italy   ☐ Sweden

2. Which subject(s) are you teaching?

   ☐ Physics   ☐ Technology

   ☐ Chemistry   ☐ Engineering

   ☐ Biology   ☐ Other: ....

   ☐ Mathematics

3. Which school level are you teaching?

   ☐ Primary

   ☐ Secondary

Age of students you are teaching during the 2018-2019 school year. Select all the relevant ages

- ☐ < 8 years old
- ☐ 8-9 years old
- ☐ 9-10 years old
- ☐ 10-11 years old
- ☐ 11-12 years old
- ☐ 12-13 years old

- ☐ 13-14 years old
- ☐ 14-15 years old
- ☐ 15-16 years old
- ☐ 16-17 years old
- ☐ 17-18 years old
- ☐ 18+ years old

4. How many students do you teach, approximately, during the 2018-2019 school year: _____

5. Please rate how useful the materials are (select N/A for "not applicable")

School box materials	1/ not usefull	2/ hardly useful	3/ useful	4/ very useful
[School Box materials a) to be filled in]				
[School Box material b) to be filled in]				
[School Box material c) to be filled in]				

6. I feel confident to introduce bio economy to my students after this training

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Agree
- ☐ Fully Agree

7. I feel confident to use the bio economy materials in class after this training

- ☐ Strongly disagree
- ☐ Disagree
- ☐ Agree
- ☐ Fully Agree

8. Your views of the event. Please indicate the level of your agreement-disagreement with the following statements by ticking one box per each record.

	Strongly Disagree	Disagree	Agree	Strongly Agree
The event fully achieved its expected learning outcomes	☐	☐	☐	☐
I enjoyed the event	☐	☐	☐	☐
I learnt more on how to link STEM with bioeconomy	☐	☐	☐	☐
I learnt more on how to teach bioeconomy in the context of real life	☐	☐	☐	☐

Any other comments on your views of the event:

Add your comment here: …

9. Your actions after the event. Please indicate the level of your agreement-disagreement with the following statements by ticking one box per each record.

I will use the new knowledge, skills, or resources	very unlikely	unlikely	likely	very likely
to improve teaching in my school	☐	☐	☐	☐
to share with my colleagues in school	☐	☐	☐	☐
to help pupils' learning in STEM/other subjects	☐	☐	☐	☐
to improve pupils' interest in STEM/other subjects	☐	☐	☐	☐
to improve pupils knowledge and interest in STEM/other careers	☐	☐	☐	☐

10. What did you get out of the event? (e.g. share with us the ideas of projects or collaborations the event has inspired you to follow up)

11. Would you recommend this type of event to others?

☐ Yes

☐ No

Annex 3. BLOOM teacher training – Implementation reporting template

The template was elaborated in order for you to document the implementations of the teachers you have trained via the teacher trainings.

This template aims at reflecting your experiences using the BLOOM school materials in your classes. Moreover, the template will support the exchange of experience between the teachers and to learn from each other. It aims at helping to improve similar future processes. Please take care to document your activities in a concise and clear manner.

General information about the training

Item	Description
Date of the training(s) you are reporting for	
Time of the training(s) you are reporting for	
Venue/School of the training(s) you are reporting for	

Basic information on testing the BLOOM school materials

Item	Description
Which subject(s) did your training participants choose to implement the BLOOM School Box?	
Which lesson plans of the School Box did the participants choose? Please name all.	*The five implementations took place as follows:* *Lesson plan [title 1] – 2 implementations* *Lesson plan [title 2] – 2 implementations* *Lesson plan [title 3] – 1 implementation*
What is the age and number of students that took part in the implementation of your training participants?	*Example: Teacher 1, [insert nr] students, ages Y-Z* *Teacher 2, [insert nr] students, ages A-B* *…*

Overall, how much time did it take each participant to implement the respective lesson plans? Was it more or less than what each lesson plan estimated?	Example: Teacher 1 implemented Lesson Plan [insert title]. The implementation took approximately two more hours than what was estimated.

Participants' perception of the BLOOM School Box

How did the participants perceive applying the lesson plan of the School Box? **Reflect and discuss about:** 1. Was it easy to use? 2. Was the lesson plan understandable? 3. How confident did the participants feel applying the lesson plans of the school box? Why? 4. Is content missing from the implemented lesson plan? Why and which? 5. Is there content participants would take out of the implemented lesson plans? Why and which? 6. For which subjects do the implemented lesson plans fit best? Why? 7. For which ages are the implemented lesson plans most appropriate? Why?	