



## The Art of Science Learning

### Protocol

### EW4- Our priorities for the World: Relevant scientific topics related to current EU societal challenges

THE BIG VAN THEORY



European  
Commission

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## Protocol

**Faced Topic:** EU societal challenges

**Duration:** 55 min

**General Objective:**

1. Make the students think about what is a societal challenge.
2. To identify if young people perception about Societal Challenge coincides with the EU societal challenges.
3. To identify ways to talk about EU Societal Challenges with/to young people.

**Description of the EW:**

A terrible disease strikes at once EU politicians of all countries, who are unable to attend an important congress. In that congress, politicians have to decide in which societal challenges they are going to invest the EU resources during the next 4 years.

As politicians cannot attend the congress, students have to take the decisions.

In this fiction scenario, students are asked, as themselves, to decide in their stead on what are the big challenges that the world is facing and that we should focus our efforts on.

1. Presentation of the scenario - 10 min
2. Students are asked to reflect individually about what is the most important challenge to them and write it on a post-it note - 10 min
  - *Only one or two keyword for each student.*
3. *The facilitator writes on the blackboard the titles of the 8 EU Societal Challenges (up to now referred as EU TOPICS) in columns, and a 9th column called VARIOUS. Facilitator explains briefly each EU topic. - 5 min*
4. *Students stuck under the most appropriate column (according to their own perception) their post-its - 5 min*

5. Students are split by the facilitator in 4 groups of 4 (number of students in each group will depend on the final number of students attending the activity).
6. The facilitator gives 2 blank cards (one for each topic) to each group. Facilitator distributes the topics among the groups (two topics per group. "Various" topic is excluded) 5 min
7. For each EU topic, students have to distribute the challenges (written in the post-its) in order of relevance (according to their own perception). - 15 min
8. The facilitators draw a line on the blackboard. On the left extremity they write "LESS RELEVANT", on the right extremity they write "MOST RELEVANT". There are 8 marks on the line: from 0 (less relevant) to 8 (most relevant).
9. All the students stuck in the blackboard their cards. In a global discussion, the students have to discuss why they think each EU topic is important and have to find a consensus on the order of EU topics' importance. - 15 min

**Material Needed:**

- blank post-it notes,
- pencils,
- a board/empty wall,
- 8 A4 blanks cards.

\*Remember that current EU societal challenges are:

1. "Health, demographic change and wellbeing";
2. "Food security,
3. "Sustainable agriculture and the Bio economy";
4. "Secure, clean and efficient energy";
5. "Smart, green and integrated transport";
6. "Climate action and environment";
7. "Inclusive, innovative and reflective societies";
8. "Secure societies -freedom and security".

### Data collection protocol for EW4: see figure 1

Basic information about the group & workshop	
Workshop name	
Facilitator/s	
Date & time	
Teacher attending (if any)	
Number of participant students	Total:
	Boys:
	Girls:
Students' age	
Name of the school	
FG Name	

Activity	Students' responses	Facilitators' observations
<p><b>POINT 4</b></p> <p>Write the list of challenges, in the order chosen by students, for each EU topic</p>	<p>Take a picture of the blackboard with all the post-its. Make sure that post-its Number of post-its in column VARIOUS:</p> <p>List of the challenges written by the students that goes to column VARIOUS:</p> <p>EU Topic 1 Health, demographic change and wellbeing:</p> <p>EU Topic 2 Food security:</p> <p>EU Topic 3 Sustainable agriculture and the Bioeconomy:</p> <p>EU Topic 4 Secure, clean and efficient energy:</p> <p>EU Topic 5 Smart, green and integrated transport:</p> <p>EU Topic 6 Climate action, and</p> <p>EU Topic 7 Inclusive, innovative and</p> <p>EU Topic 8 Secure societies -freedom</p>	
<p><b>POINT 8</b></p> <p>Take notes about the reasons and the arguments that students use to distribute the EU topics by importance</p>	<p>Take a picture of the blackboard with</p> <p>EU Topic 1 Health, demographic change and wellbeing:</p> <p>EU Topic 2 Food security:</p> <p>EU Topic 3 Sustainable agriculture and</p> <p>EU Topic 4 Secure, clean and efficient</p> <p>EU Topic 5 Smart, green and integrated</p> <p>EU Topic 6 Climate action, and</p> <p>EU Topic 7 Inclusive, innovative and</p> <p>EU Topic 8 Secure societies -freedom</p>	

Figure 1: Data collection protocol for EW3.

## Guidelines emerged from EW4

After delivering EW3 in the PERFORM project, the following guidelines emerged. These can be followed to generate a performance play that deals with the European societal challenges

### Guidelines addressing Topic 3: EU SOCIETAL CHALLENGES

**To use the EU Societal Challenges that students have considered of interest as a hook. Take into account your local particularities, i.e. your results from the EWs. In the PERFORM project we obtained:**

- ✓ UK case study: Health, demographic change and wellbeing
- ✓ French case study: Secure societies, freedom and security
- ✓ Spanish case study: Climate action, environment, resource efficiency and raw materials

## How to apply EW4 guidelines

The EU societal challenges refer to worldwide problems but are very broad and general. To make students notice that with a STEM job is possible to face big challenges our advice is to show during PERSEIA specific and particular cases. This helps the audience to better understand the concepts. Some examples used by SMS about EU- Societal Challenge “Health, demographic change and wellbeing” are:

With a STEM job you can solve great challenges of humanity, such as curing incurable diseases like cancer or malaria.

We are currently researching on the possibility of using CRISPR as a tool to modify genes that, when mutated, produce diseases like muscular dystrophies, lung cancer ... even diabetes or colour blindness could be treated!

An example related to “Europe in a changing world - inclusive, innovative and reflective societies” used by TRACES is:

Science at the service of new technologies allows us to create a fully connected communication society. With social media we can know about Brad Pitt's latest diarrheal... even before it happens. But science and new technologies serve for much more. They make our society a more inclusive place, everyone has a voice. For example, do you know Molina de Aragón, province of Guadalajara? Of course not, because it's a shitty town, where nothing happens. But now it even has Facebook.

And a third example related to “Climate action, environment, resource efficiency and raw materials” used by TBVT:

Performer gets volunteer to push the plunger down on a large bore syringe containing some peat blocks and above the blocks some dirty water, audience notes how slowly the water drips out of the syringe as it is filtered by the peat.

Performer and volunteer now repeat the syringe demo, but with a syringe filled only with clean water. As the volunteer pushes down on the plunger, the busker so angles the syringe so that it sprays the water over the audience.

**Performer.-** See what happens when we don't have peat to slow our water down! It shoots into our drains and rivers so fast that we get lots more. We have to look after peat and similar environments so they can look after us! Any you know who gathers the evidence for this, to go to governments and help them put policies in place to help the environment, mostly its scientists, fighting to save our planet, like the organisation called “bioversity”.