Protocol

EW2- Stereo-science-types: Science-related stereotypes

THE BIG VAN THEORY

European Commission | Horizon 2020 European Union funding for Research & Innovation

This project has received funding from the European's Union H2020 research and innovation programme under grant agreement No. 665826

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Protocol

Faced Topic: Science related stereotypes
Duration: 50 minutes
General Objectives:
1. To understand which are the stereotypes that young people associate to scientists
Description of the FG:
Explain to the students the activity.
Organize students into groups of 4 or 5 people.
Write in a blackboard the 4 possible situations (look down)

1- A group of scientist are working in a laboratory. One of them suggests going for a bike ride (or something interesting/emotional/not common) at the weekend. What is the answer of the other scientists?
2- Choose a relevant scientist. Imagine and represent an everyday situation as a child. For example; "How Isaac Newton may relate with their schoolmates during playtime".
3- A scientist with her/his couple in an everyday situation. How they behave? Example: A couple in a restaurant/ a couple in the supermarket…
4- A young boy or girl wants to study a STEM career. Represent the moment when the young boy/girl says to his/her friends.
5- … *(you can add a situation if you consider appropriate)*

Assign to each group of students one situation. Different groups can choose the same topic.
Let the students work during 15 minutes to generate a short scene that they have to represent (1 or 2 minutes). Facilitators have to visits de different groups to ensure that they are working and to assist them (at minutes 5 and 10 approx.).
All the groups have to deliver, in front of all the class, their short representation.
After that, a short discussion (10 min. aprox.) about the stereotypes represented is done with all the class (assisted by facilitators).

Material Needed: Blackboard to write the situations.
Empty space to allow students perform.
Data collection protocol for EW2: 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
Possible situations chosen by studen	Group 1:	
	Group 2:	
	Group 3:	
	Group 4:	
	Group …	
Take notes about the stereotypes that you identify during short representations students delivery	Group 1:	Highlight in bold which are the most prevalent stereotypes that you have identified during the activity
	Group 2:	
	Group 3:	
	Group 4:	
	Group …	
Take notes about the stereotypes that STUDENTS identify during short discussion AFTER students delivery	Group 1:	Highlight in bold which are the most prevalent stereotypes that you have identified during the activity
	Group 2:	
	Group 3:	
	Group 4:	
	Group …	

Figure 1: Data collection protocol for EW2

Guidelines emerged from EW2

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

Guidelines addressing Topic 2: SCIENTIFIC STEREOTYPES
To highlight positive stereotypes of science and scientists: ✓ External recognition, knowledge motivation, long term goal. "Knowledge gives you power: the more you know, fewer lies you will believe" ✓ Imaginative, self-confident

To break negative stereotypes of scientists:

- ✓ Freaky, nerd, boring, bad couple or parent, social rejection, unable for social relations, always «ON» and in their own world

How to apply EW2 guidelines

A valid way to break stereotypes is to show real scientists (or performers acting as scientists) that contradict the classic science related stereotypes:

Scientific Stereotype	Performer
Senior man	Young man & young woman
Crazy and asocial	With communicative and humorous skills
With a discourse far from the interests of adolescents	Who knows their tastes and relates them to science
Poorly dressed	Dressed in a manner similar to adolescents

In SMS PERSEIA they found a funny way to do that. The performer came into the room, wearing a football shirt underneath a tabard, underneath a lab coat and goggles holding a boss stand and clamp (see figure 2).

Figure 2. SMS performer tackling scientific stereotypes.

Hi all my name is David and you have to try and guess my profession! Nice one, you got it right I am a scientist, but does that mean science is all I do?

Busker plays table tennis, and dances with the teacher present.

I have likes and dislikes outside of what I do just like anybody else! Some scientists do see a lab coat as some sort of uniform, but that's not to say they think this wholly defines them!

During the PERSEIA, once students seem to empathize with the image of the modern scientist, is the right time to introduce the concept that being studious and geek is not bad. In TBVT PERSEIA directly break negative stereotypes by relating the stereotypes identified during EWs and saying that are false:

> ... scientists have always associated us with many stereotypes and prejudices ... that if we are boring, that if we do not have social life because we are always working in our laboratories, we are always on and we talk weird ... Well, that is all false!

And also not only highlighting positive stereotypes but also converting negative stereotypes into positive ones:

> Well, not false at all. There is something that is true: we are geeks! I'm very geek, the rest of my mates who are going to leave here, you're going to freak out ... And I'm sure there are also geeks here ... and nerds ... well I was a nerd, and that's fine. Today we bring a message of positivism here: geeks and nerds of the room: We are with you!
>
> And now we will give a big applause to nerds and geeks!

> When you study, read and eventually become a scientist, you became creative. You can imagine how to solve problems by creating imaginative solutions; for instance, remember the scientists that created the lasers to detect gravitational waves or the engineers that made the banana-automatic-peeler. These kinds of things change the World.

To break negative stereotypes, TRACES used in their PERSEIA the traditional structure of “ready clown/ silly clown”. While the silly clown highlights the negative stereotypes of science, the ready clown is able to contradict all the arguments and emphasize the good things that science has:

> ***Silly Clown.-*** Scientist, why not pilot or architect. Scientists it is not a job, you will be badly dressed, badly dressed, you will have no friends, only colleagues. There will be no girls.

Ready Clown.- Ah, there are girls!

Silly Clown.- Ha! Women with beards, yes! You will speak an obscurantist language that no one will understand, except the five colleagues who will do the same research as you do. […]

Ready Clown.- Oh ... No, not at all ... Well, maybe later ...

I want to ... The ground. Plants, ants. The sky with -*Pif paf paf (stars that appear)*- stars. Messages between the tree and the stars. The mechanism of walking. The inside of the body, the digestion, what it does to you in the head, and what it does to the mom in the head. It's crawling! There's a world in there!! Where they are? The links between things.

I must know.