SECONDARY SCHOOL STUDENTS AS SCIENCE COMMUNICATORS

Perform: Scenic arts for humanising science

INTRODUCTION

Are you a secondary school teacher, or do you work in the communication department of a University/Science Research Centre, or are you professional from the science communication field eager to explore participatory activities for engaging secondary school students with scientific research? Then this toolkit is for you!

In the PERFORM project, we have designed a participatory educational process that promotes the active collaboration between secondary school students, teachers, researchers and science communicators, to assist students in the creation of their own performance-based activities linked with Science, Technology, Engineering and Maths (STEM).

By implementing this participatory process, you will contribute to generating a mutual learning scenario that will:

- Promote the direct interaction between scientific and educational communities
- Establish the human dimension of science and the values embedded in the Responsible Research and Innovation (RRI) approach
- Provide students with transferrable skills related to STEM careers
- Facilitate students in incorporating important individual and social skills, such as learning to learn, or using initiative, as well as drama-based competences, for instance, active listening and observation skills, or public speaking.
- Support students in the creation of their own performance-based activities.

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To implement this participatory educational process is easy:

- Watch the videos and read the documents included in this Toolkit
  - Create and coordinate a team composed of secondary school teachers, early career researchers, science communicators and, of course, the secondary school students that will design and implement the scientific performance-based activity.
  - Implement the activities described in this Toolkit. You have at least two options:
    - Follow one of our artistic methodologies (i.e. stand-up comedy, science busking or scientific clowning/improvisational theatre),
    - Or combine activities from our different artistic methodologies to generate your own participatory process, specifically adapted to your local context

Let's PERFORM!

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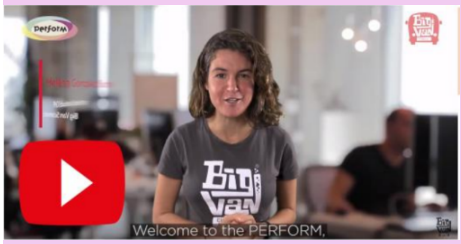
HOW TO USE THIS TOOLKIT

Through this innovative method, secondary school students and their teachers, together with researchers and science communicators, will get actively involved in the generation of a scientific performance-based activity.



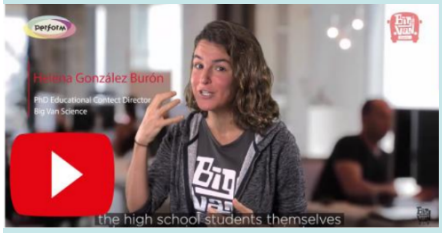
How and why we link Science with Arts

Promote transferrable skills through the use of our science and arts-based education approach

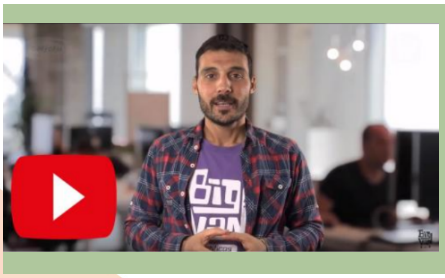
With this method you will address the human dimension of science and science-related values like gender perspective, ethical issues in scientific research or societal challenges faced by science.

A participatory project based on science related values and the humanisation of science

But what do "RRI values" and "humanising science" mean?



Using performing arts as a vehicle to approach science



Let's do it… how to generate a participatory process

*If you want to have a detailed description of the general guidelines needed to conduct the PERFORM participatory process, take a look at **this document**.*

To know more about the PERFORM project, the RRI approach, or how we have used drama activities to raise scientific aspirations in secondary school students, take a look at our previous **TOOLKIT.**

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MEET THE PARTICIPANTS… AND BE ONE OF THEM!

To implement this Toolkit you need to coordinate a multidisciplinary team and to invest some time and effort. But it's worth it. This method raises scientific aspirations among young people, while being fun and rewarding for the researchers and teachers. We are not exaggerating, as these participants in the process attest:

I am a secondary school student… and I have participated in the PERFORM project

We, secondary school students, have developed our own scientific performance-based activity, and it has been amazing.

I am a secondary school teacher… and I have participated in the PERFORM project

Find out about our motivation and personal experience as teachers involved in PERFORM.

I am an Early Career Researcher (ECR)… and I have participated in the PERFORM project

As Early Career Researchers, these are our reasons to have been involved in PERFORM

Performance-based activity is too general a term. In the PERFORM project we have tested three specific approaches: stand-up comedy, science busking, and clowning/improvisational theatre. Are you curious

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about how they can help secondary school students in the creation of their own scientific performance-based activities?

Stand-up comedy by **Big Van** (Spain)

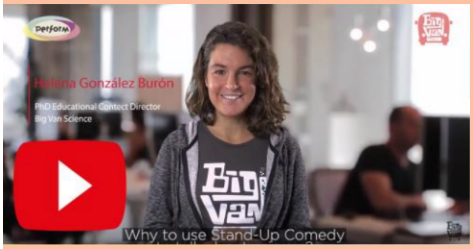
Science busking by **Science Made Simple** (UK)

Clown/Improv. by **TRACES** (France)

STAND-UP COMEDY BY BIG VAN (TBVT) IN SPAIN

Do you feel that science classes are boring to students? Would you like to engage them with science while having fun? Let's exchange roles! Encourage them to talk about science through a scientific monologue!

But wait! Still not clear what stand-up comedy is about? In the next video, Helena from **Big Van** tells you about her experience as a performer, giving you some key tips for generating scientific monologues:



▶ **What is stand-up comedy?**

Now it is time to get secondary school students to generate their own scientific monologues. To do this, we will humanise science and scientists, will foster STEM vocations in young students, will talk about values, such as ethics and gender, and will promote critical thinking. We have designed six workshops that address all these topics, and, at the same time, that will guide students in generating the scripts of their scientific monologues:

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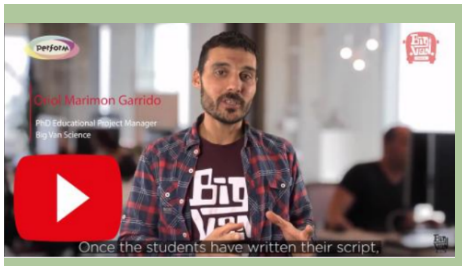
Humanising science through breaking stereotypes about science and scientists

If you want to have a detailed description of these specific activities, take a look at this document:

Finally, two of the most important steps in the process are rehearsals and the final performance of the monologues in front of an audience. Here we give you some tips to make the most of the students' talent!



LET'S PERFORM

Find all the details to produce a terrific performance in the following document:

Now you are ready to implement the participatory process of the PERFORM project based on stand-up comedy, and to convert secondary school students into real Science Communicators. Let's PERFORM!

SCIENCE BUSKING BY SCIENCE MADE SIMPLE IN THE UK

Do you want secondary school students to develop authentic science demonstrations, generate an engaging and funny story that explains the science behind the demonstration, while also performing in front of a live audience? Then, **Science Busking** is your artistic discipline. If it is the first time that you have heard about science busking, then take a look at the next video.

What is science busking?

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To know all the details about how to implement the PERFORM participatory process by using science busking, download the following document:

CLOWNING/IMPROVISATION BY TRACES IN FRANCE

In the process of science communication, the use of the clown character induces a new look at science, and, in particular, the demonstration experience. From this original association between art and science emerges a freer, simpler and more irreverent connection, which, through the clarification of their relation to the science, gives the audience new perspectives, from passive contemplation to the active search for understanding. By using the clown character and improvisational theatre (the spirit of clown is the art of improvisation), the audience, and the participants, can develop their creativity and imagination, in order to step into science in a different way than is usual in schools.

What is scientific clowning?

To know all the details about how to implement the PERFORM participatory process by using scientific clowning, download the following document:

NOW IT'S YOUR TURN!

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The Art of Science Learning

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