



ROBOTS VS ANIMALS



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CREATING CULTURES OF PUBLIC ENGAGEMENT



ENGINEERING ENGAGEMENT

'Robots vs. Animals' was a creative collaboration between engineers and zoologists, exploring the ingenuity of nature and humankind.

The project was designed to improve the capacity of engineers in the Bristol Robotics Laboratory to undertake public engagement. It aimed to improve engineers' communication skills while also supporting more women to be presenters and role models at events.

BIOMIMETIC ROBOTS

Five stories were developed to explain the design process taken by engineers to create biologically inspired robots. The robots were deliberately compared to animals to hook in a wider audience than those who would usually connect with engineering.

The robotic superpowers included active touch with whiskers, power generation from urine, and swarms working together in cooperative societies.



#11% IS NOT ENOUGH

Women are under-represented in engineering, with research indicating that the profession is perceived as a masculine career with a very male working environment.

Gender identity is formed in primary school. We aimed to change perceptions of engineering, and so we targeted family audiences at events, along with upper primary school and lower secondary school children.

EVENT EXPERIENCE

The project science communication coordinator organised collaborative events at partner institutions, including Bristol Zoo Gardens, We The Curious science centre, and festivals such as Bristol Festival of Nature.

Junior engineers were paired together for peer support. They also received mentor advice from senior engineers who were experienced at public engagement, aiming to develop a lasting culture.



STORYTELLING TRAINING

The science communication coordinator guided the junior engineers to present engineering as a culturally conscious, creative profession, aimed at solving societal problems.

Training was provided in storytelling techniques. Storytelling is an effective engagement practice as the skills can be used in person or online. Resources from our project are available on social media and on the website.

LESSON 1: ENGAGEMENT NEEDS TO BE SUPPORTED

SOCIAL COGNITIVE THEORY

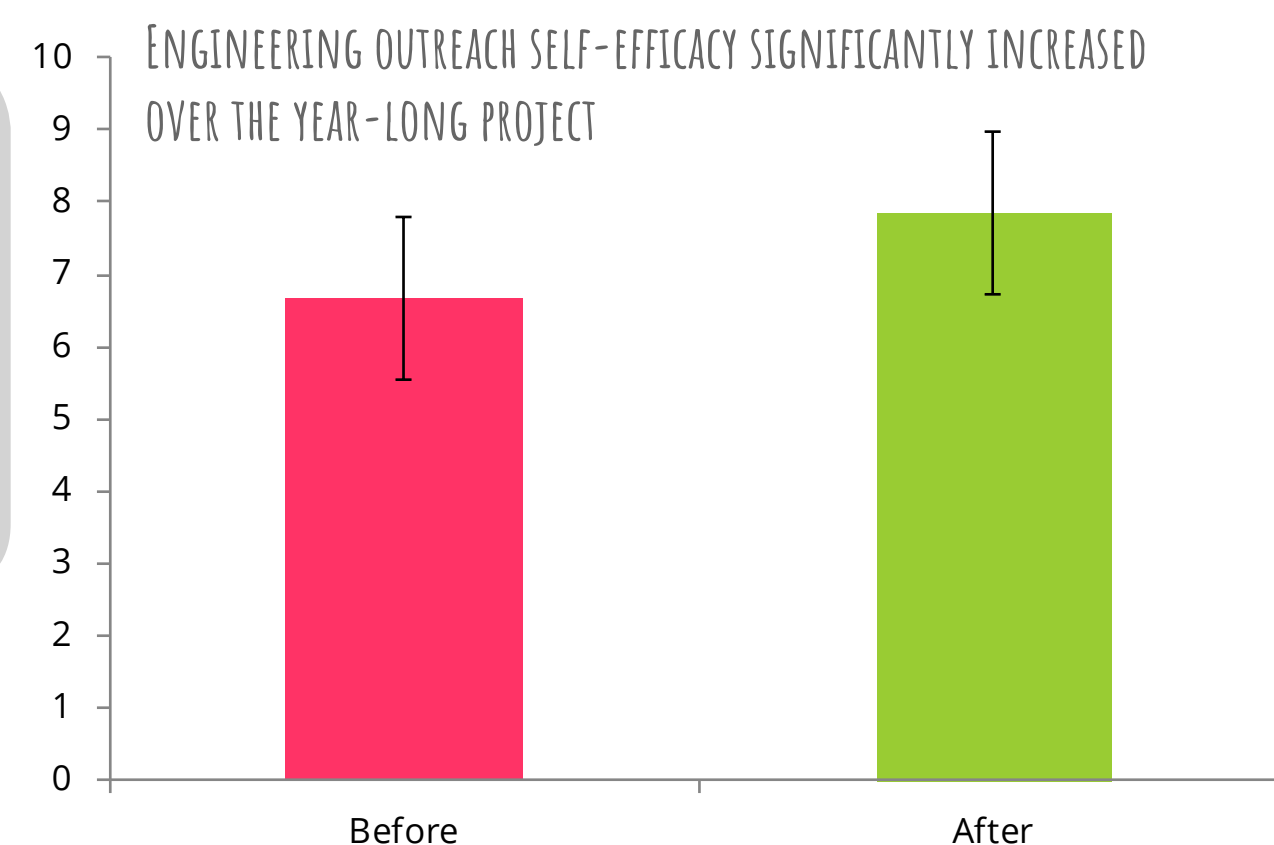
MASTERY

- Training in storytelling
- Supported experiences
- Lasting culture change

COORDINATOR
ROLE!

VICARIOUS EXPERIENCE

- Paired peer mentors
- Guidance from leadership
- Changing social norms



LESSON 2: WE NEED TO SEE 'PEOPLE LIKE ME'

POSITIVE SELECTION IS CONTROVERSIAL

"IT'S VERY IMPORTANT FOR PEOPLE TO HAVE ROLE MODELS THAT THEY CAN IDENTIFY WITH TO TRY AND DEAL WITH THE STEREOTYPES THAT ARE ENDEMIC IN ENGINEERING".

VS

"EMPLOYING WOMEN JUST FOR THE SAKE OF EMPLOYING WOMEN AND MAKING THEIR NUMBERS UP - I THINK IT ACTUALLY UNDERMINES AND DEVALUES THE PARTICIPATION OF WOMEN IN SUCH EVENTS".

BUT YOU CAN'T BE WHAT YOU CAN'T SEE!

- Choose a demographic mix when selecting event staff - the more diversity you put in the room impacts how many students are seeing 'their future selves'.
- Think about your case studies. Where can historical examples or real-life case studies include underrepresented groups?
- Describe stories in your research using a woman as the protagonist. Alternatively use both 'he' and 'she' pronouns when describing researchers.
- Don't simply say that 'women or people from BME backgrounds can do this too' - prove it!



FIND OUT MORE

- Download our event guide: <http://www1.uwe.ac.uk/research/sciencecommunicationunit/coursesandtraining/practitionerguides.aspx>
- Watch the YouTube Video: <https://www.youtube.com/watch?v=lv1U2WB4f8M>
- Read more in our research paper: Fogg Rogers, L., Sardo, M. and Boushel, C. (2017) Robots vs animals: Establishing a culture of public engagement and female role modelling in engineering higher education. Science Communication, 39 (2). pp. 195-220. ISSN 1075-5470 Available from: <http://eprints.uwe.ac.uk/30921>

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