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EDICa Innovative Approaches to EDI Research: Inclusive Science Communication

You Can't Be What you Can't See - A truly inclusive approach to creating the researchers of the future.

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she/her, white, cisgender, heterosexual, disabled, carer. Academic background: careers, especially women and minorities, social capital, network analysis.

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Overview of Presentation

- Inequities in STEM education and careers
- The need for role models in STEM
- The challenges for role models from minoritised backgrounds
- The use of video role models for schoolchildren
- The importance of reflexivity and coproduction
- Methodological details
- Production challenges and considerations
- Conclusions and recommendations
- Film: Dr Wassim Dbouk, Southampton Marine and Maritime Institute, University of Southampton
- Discussion & Feedback

Inequities in STEM education and careers

“.. inequality, and the lack of inclusion in decisions around energy systems, is now understood as a critical barrier to addressing climate change.”

Christina E. Hoicka. (2023)

The need for role models

“ ..individuals who can positively shape a student’s motivation by acting as a successful exemplar.” Jessica R Gladstone, et al. (2021)

- **Whole systems approach:** not an easy fix.
- **Awareness of barriers**: discrete, complex, historic and ingrained.
- **Breadth of role models:** urgent need to look beyond single axis of identity & broaden range.
- **Accessibility to relevant role models**: identities, characteristics, interests, roles, careers, stages, etc … across space / place / geographic locations.

The challenges for role models from minoritised backgrounds

" When all the pressure to be a role model is placed on women in STEM, diversification may come to be seen as a female issue rather than a societal issue". Benjamin Drury, et al. (2011)

"I am often used by the organisation to talk about diversity and inclusivity and requested to be involved in BAME activities at work - however this is in addition to workload - and feel that the organisation adds pressure on me and other BAME colleagues to improve diversity and inclusivity without undertaking work themselves - i.e., improvements won't take place unless BAME people do the work (sufficient resource is not provided to support EDI to instil improvement)." Institution of Environmental Sciences. (2021)

The use of video rather than in-person role models for schoolchildren

Video role models can increase:

- **Accessibility to role models**: greater geographic / spatial coverage, larger numbers of role models, revisiting role model films (vs one time exposure) etc
- **Flexibility, efficiency & support for teachers**: role models fitting into teaching contexts.
- **Effectiveness of the encounter**: remote role models can have greater impact eg Lawner. (2019), Gladstone. (2021)
- **Reduced time / resource commitment for role models**.

However:

- **Loss of interactivity**: mitigations required.
- **Digital and wider resource inequity**.

The importance of reflexivity and coproduction

Reflexivity

"Reflexivity can be defined as recognizing one's own position in the world both to better understand the limitations of one's own knowing and to better appreciate the social realities of others."

"A reflexive practitioner would challenge her epistemological assumptions (how we know what we know) and the social and discursive factors that influence conceptions of legitimate knowledge, social norms, and values."

Stella Ng, et al. 2019.

Coproduction

Numerous definitions: value-based ways of working underpinned by power sharing, mutuality and partnerships that drive (more inclusive, relevant, efficient, accessible, sustainable …) change.

Not possible without reflexivity.

Methodological details

- Invitations to participate.
- Collaborative editing
- Stock images
- Audience

Production challenges and considerations

- **School engagement**: time, resources, contacts, and relevance to curriculum.
- **Methodological adaptations**: building in responsiveness to research/projects.
- **Disclosing characteristics**: choice.

Conclusions & recommendations

- Whole systems approach
- Invite, value and support more science communicators from all backgrounds to be role models
- When designing interventions, commit to coproduction with diverse audiences and diverse role models. Work reflexively. Interrogate personal and institutional positionality.
- Make being a role model and accessing relevant role models easier and inclusive.
- Promote science as part of, and relevant to all groups in, society.
- Involve everyone: share learning and build communities of practice.

Examples of project dissemination

UNESCO

https://www.unesco.org/en/open-science/inclusive-science/idrics-video-showcase-women-role-models-stem?hub=178646

Royal Society

https://yourstemcareerpath.royalsociety.org/

In2Science and In2Careers

https://in2scienceuk.org/our-programmes/in2careers/

Inspiring Girls UK

https://inspiring-girls.com/

STEM Learning https://www.stem.org.uk/resources/community/collection/448547/videos-promote-careers-stem

In progress: Royal Geographic Society, Royal Academy of Engineering, Computer History Museum Cambridge

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