



Casting the net
wider, capturing a
greater diversity of
views

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Target audiences

- Sociological elements in marginalisation situated in an area with high levels of poverty, unemployment health and educational outcomes, crime and geographic access to services ([Scottish Index of Multiple Deprivation](#) 2020). Coastal poverty.
- Epistemic elements in marginalisation Learners with Additional Support Needs (ASN) being educated in an alternative setting with limited access to STEM education or STEM educators and care experienced young people.
- [Also, professional isolation of researchers wishing to extend their dissemination work.
- And access barriers to educational researchers seeking to gain a wider spread of views]



4/18/2024

Three co-creative projects

1. STEM Equals accessible summer schools run in 2021 and 2022 funded jointly by University of Strathclyde and EPSRC Impact Amplification Account money.

2. And two consultations:

- *Education for Environmental Sustainability* in 2021 funded by BERA
- *Dialogue on Climate Engineering with Youth (DICEY)* run in 2022, funded by RSA and UKRI



Why we need public dialogue on climate interventions

- Public understanding of science/social literacy for scientists and policy makers
- (Informed) democratisation of decision making
- Inclusion of a broader range of perspectives (and therefore better understanding of 'winners' and 'losers' from climate interventions)
- Shared understanding of possibilities, approaches, strengths and limitations
- Young people are under-represented in research on public responses to the prospect of climate interventions

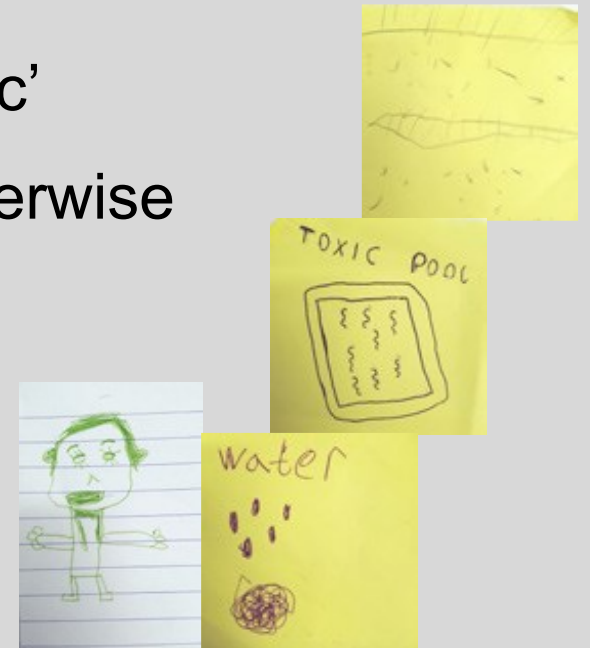
Data gathering techniques used

- Drawing/ writing a postcard
- Rock painting
- Choosing & justifying a recipient for an eco award
- Design the eco award
- Contributing to a group poem on sustainability
- Selecting items for a time capsule
- Asking questions, both open and closed
- Complementary analysis of mixed data was then carried out



Merits and limitations of data gathering techniques

- Rich data...but messy
- Captured authentic voices of a diverse population...but required a high level of inference
- Openness of techniques produced data that was 'off topic'
- Depended on linguistic skills and capacity to draw or otherwise represent ideas
- The risk of 'copy cat' contributions distorting the data



Findings on accessible environmental education

1. The young people's responses were hugely informed by their experiences of environment

- 'Californian water worm' (had been looked at in an experiment about water purity)
- A drawing of a water worm
- Seashells might be rare in 100 years' Drawing of a shell.
- 'We went to Dolphin House, had rocks and shells collected from the beach.'
- 'A shell' Drawing of two shells
- A plastic chocolate bar wrapper. When challenged about why that was being put in the time capsule, the young person said. *'I don't think in a hundred years' time that people will be allowed to use plastic to wrap food in and I think that they will be shocked that we ever were.'*
- A smooth pebble and two limpet shells which the young person had carried round all day. When asked whether they were sure that they wanted to donate these objects, which they seemed to like so much, they answered, *'Because they're beautiful and I think people may not have beautiful things then.'*

2. Responses demonstrated a large affective response

A head and shoulder portrait of a figure who is smiling.

'I heart life. I like food. I like pets.' Drawing of a plant and two rabbits.

'Life is good'

'Think with your hearts to look after every creature on the planet'.

'The beach is nice and relaxing and peaceful. You hear the sea and feel the wind.'

Painted stone with 'I heart life' written on

Findings on accessible environmental education

3. Responses demonstrated a growth in factual knowledge and understanding

- 'Hi, is cap still cool' with a drawing of blue crystals in a blue circle surrounded by two more concentric red circles. This was taken to be a reference to the disappearance of the polar ice caps.
- 'Fewer people'
- A duck and a cactus
- Painted stone with beach scene on one side and a *picture of pollution clouds and skeletons on the other.*



Findings on the possibilities of enhancing representation in education research

By adopting diverse approaches to understanding their views, marginalised young people can be given a meaningful voice in educational research.

See: [BERA Research Commission 2021/22 – A teacher and youth co-created manifesto for Education for Environmental Sustainability \(EfES\) from the four jurisdictions of the UK | BERA](https://www.bera.ac.uk/bera-research-commission-2021-22-a-teacher-and-youth-co-created-manifesto-for-education-for-environmental-sustainability-efes-from-the-four-jurisdictions-of-the-uk)

And the forthcoming DICEY dialogue: <https://www.publicengagement.ac.uk/whats-new/blog/dicey-dialogue-engaging-scientists-with-public-understanding>





CRITICAL QUESTIONS FOR WORKING WITH YOUNG PEOPLE WITH ADDITIONAL LEARNING NEEDS

Motivation

Why do you want to work with diverse respondents? Is it about achieving a representative sample, are you interested in specific perspectives...?

Thinking differently

How do you capture the heart of the experience and concepts under study without getting lost in detail? (being strategic, critical, incisive...)

Benefits

What are the benefits to participants? How are these communicated?
Think direct and indirect over short and long term (think democratic participation, inclusion).

Relationships

Have you considered how you are building a relationship with potential participants and what you are learning from this? How can you earn trust?

Listening

How will you ensure that the authentic voices of your target group will be heard and how will you check your understanding is accurate (assistive technology, mirroring back, use of higher inference data sources - pebbles and shells - and appropriate and meaningful questions.

Environment

What environment is needed to enable diverse participants feel comfortable to share their views and know they will be trusted?

Access

How can you make the subject or research questions meaningful to participants? (Think about remoteness in distance and time, degree of abstraction)

Response

How can you value creative responses not directly linked to your research question? (Bouncing back with abstraction e.g. so you think we should be trying things no-one has thought of)

Recognition

How do you value diverse participants' responses? How to recognise without incentivising? What is a suitable recognition, meaningful to participants, what can you share as a memory (certificate, video)?
Meaningful choices...

Partnership

Are you working with partners who know the context and the participants? Are you open to suggestions from the host? How are you responding to suggestions? How much are you willing to invest in obtaining authentic views beyond the majority population?

Implications for future practice

Devised by joint de-briefing and the combining insider and outsider researcher perspectives

References

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