Reimagining climate change education in primary schools in England[1]

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Abstract

This article reports on a project that engages primary-school children in climate change education through various activities rooted in the practice of listening differently to different types of voice. These engagements place children's experiences and embodiment at the heart of education research and practice. We reflect on the importance of moving beyond the 'learn-now-act-later' approach (Waldron, et al, 2019) to draw on the untapped capacity of children 'to collectively envision a better future' (Kagawa and Selby 2010, 5). We discuss the envisioning of the school- what it means and how it matters. The article sketches out a vision that entails opening up the curriculum as an expanding spiral beyond the classroom.

1. **The need for reimagining**

What have we got wrong with climate change education after decades of scientific warnings about climate change? Recent years have witnessed a renewed focus on sustainability and climate change in education (DfE, 2022). This is not surprising given that education contributes to world-making, with a powerful role in restoring and generating the world. Yet, the path is not straightforward as educators do, and will continue to, battle structural and pedagogical challenges.

Climate change education is still dominated by *scientific knowledge-based approaches* which are described by Rousell & Cutter-Mackenzie-Knowles (2020, 191) as 'ineffectual in affecting students' attitudes and behaviour'. While science lessons on global warming sensitise children to climate change, the exclusive focus on science overlooks socio-cultural complexities which require modes of engagements with individuals, cultures and knowledge systems (Kagawa and Selby 2010). This necessitates the need for reimagining in ways that are both participatory and expansive. The participatory vision we advocate for encourages us to 'think twice' (Dasgupta, 1997) through attending to a different type of voice: child-centric and rooted in everyday experiences and entanglements. On the other hand, our expansive vision problematises the separation between the romanticisation of nature as pure and curing (e.g. forest school approaches), the objectification of nature (e.g. science-based approaches), and the depiction of nature as messy and political (e.g. climate activism approaches). Through the re-imagining we present here, we attempt to address two educational challenges:

First, science-based climate change education does not attend to individuals' different understandings of nature and fails to explore human entanglement and liberal thought. Drawing on the complexity of the term 'nature', Mcphie and Clarke (2020: 1512) use it as a verb (*naturing*) and offer multiple versions of nature: scary nature, scenic nature, utopian nature, scarier nature, artificial nature, affective nature, conceptual nature and abstract nature. They argue that it is important to explore how individuals come to understand their relationship with nature. This is aligned with Ingold's vision for education as a 'practice of attention, not of transmission' (2018:2). We know very little about how

children perceive nature, and to explore this question we started with 'trees' (and *treeing*) as we demonstrate in the following sections.

Second, traditional ways of doing education have been too compartmentalised, separating science from humanities, and cognition from emotions, experiences, and embodiment. This Great Divide (Goldman and Schurman, 2000) is perpetuated under claims that climate change education must focus on scientific aspects. One might ask, should it be? If not, where is the space for climate education in a crowded curriculum? In response, we argue for the need for cross-/extra-curricular engagements. This article is not a recipe for reimagining, but a map that traces pockets for reimagining in ways that incorporate not only science, social sciences, language, and arts but also memories, dreams, fears, experiences, and embodiments. This approach responds to calls for exploring participatory ways of engaging children, giving them 'both a hand and a voice' (Rousell and Cutter-Mackenzie-Knowles, 2020: 203).

2. Storying the research project
This collaborative project was inspired by an educational wonderment. The first author conducted assembly-style consultations with the children to identify the improvements they wanted in their school, which is situated in a densely populated urban area in Manchester. Responses included: 'A nature garden', 'More trees', 'More green space'. These responses produced an educational wonderment: *what makes children connected to/interested in trees? And how can this be nurtured in climate change education?*

It is worth noting that the first author's school is recognised by UNICEF with Gold Rights Respecting Status, an esteemed acknowledgment of how the school nurtures a culture of rights whereby the children understand the power of their voice. Article 29 of the United Nations Convention on the Rights of the Child states that 'the education of the child shall be directed to… e) The development of respect for the natural environment' (United Nations, 1989). Being a familiar article to the children, the first author noted that rights-based practice nurtures ethics of care and responsibility, not only for other humans but also for non-human inhabitants. It was at that stage that the second author joined the first author as part of an inquiry-based research project called *Voices of the Future*[2].

Our working hypothesis is that, if we start with rights-based practice, we engender conditions for human and non-human bondage so that children do not see trees as something restricted to parks and woodlands or as a topic covered in science or geography. Rather, trees can be everywhere and can be brought to the children's tarmac-covered playground. The project utilised a range of whole-school engagement activities led by the first author, the school's headteacher. These included consulting children on redesigning and greening parts of the playground, choosing tree species, planting and watering. Other activities were led by the second author alongside the *Voices of the Future* team. These included attending to children's experiences of being with trees through interviews, drawings, modellings, observations, diary writing, and outdoor encounters of digging, planting, scanning, and tree-measuring.

3. Preliminary findings
Our different modes of engagement allowed us to tap into *treeing* i.e., understanding how trees mean different things to different children. They enabled us to explore what knowledge is there about trees,

and where it comes from. The following photos are samples from drawings by Year 3 and 4 children in response to the prompt: draw a tree.

Figure 1: Trees as habitat for birds, bees and insects

Figure 2: Trees as dangerous and not to touch

Figure 3: Trees as nexus of human activities

Figure 4: Trees as a source of happiness

What we learn from these photos is that children's conceptualisations of trees are varied, entangled with different, yet overlapping experiences, including:

1. What they remember from science lessons (Figures 1 & 3)
2. What they imagine trees to be (Figures 1, 2, 3 & 4)
3. What they previously experienced of/with/in trees in the company of friends and family (Figures 3 & 4)

Such an educational approach meets the children where they are and joins the dots between science, art, experience, memories, bodies, cognition, and imagination. They enable us to respond to the aforementioned challenges in creative, expansive and participatory ways. Most importantly, they give children a voice and a hand while positioning them as *knowing subjects* whose knowledge of the world connects the school with their networked life outside the school.

Other project activities included:

Figure 5: Designing a woodland for the future

Figure 6: Planting a woodland

Figure 7: Measuring trees

Figure 8: Modelling trees and root systems

In the following quotation, the first author reflects on planting daffodil bulbs in the school's playground with children from different year groups:

> It looks like an onion. Can I eat it? Which way does it go? These were some questions raised by the children when handed a daffodil bulb. They were fascinated to know that this flaky, brown lump grows a tall green stem topped with a yellow flower. Many of the children did not recognise daffodils when shown a picture…

My decision to plant hundreds of bulbs with hundreds of children seemed to be justified by just this. Almost 700 children attend my school and sadly their experience of the natural world is, in most cases, limited to street trees and grassy fields in local parks. Within our densely populated urban community the opportunity to connect with nature is sadly limited. Taking time to plant, grow, nurture and be nurtured by nature is vital for our children.

Perhaps of equal importance is the children's direct personal connection with the school grounds. They dug the holes, planted the bulbs, and will see them grow and flower year after year. Building a sense of connection with a place establishes care and belonging. The playground is theirs and this matters. I see this when the children curiously watch over the areas where the bulbs were planted. It is this relationship that I expect to have more impact on their climate education than any traditional lesson.

4. Spiralling forward

Our article demonstrates that climate change curriculum should not be a limiting framework but an *expanding spiral* that stretches beyond the classroom. It's an exercise in attention that nurtures human becoming (Ingold, 2018). In what follows we provide guiding principles and recommendations that assist with re-imagining:

Principle (1): Climate change education requires a major culture shift that *opens up the curriculum* so it is not just about skills and knowledge but is a vehicle through which values, rights, connections, and ethics are maintained (Bosevka and Krieswaldt, 2020).

Recommendations:

- Weave right-based practice into the curriculum rather than bolt it on. In English and in assemblies, choose books that focus on children's rights and care for the environment. Books engage and inspire children, and are a powerful vehicle for rights education.
- Take climate change action (e.g. recycling and energy efficiency) and teach about climate change with a foundation in rights. These actions matter but can matter more if connections are made, building a sense of belonging, care and responsibility.
- Listen to children's personal experiences of trees. Some children have transnational experiences. This listening helps children connect the local with the global, sparks memories and connections, creates new meanings, and challenges Euro-centric education.

Principle (2): A reimagined pedagogy for climate change education needs to move towards sensory, and emotive ways (MacDonald, et al. 2020: 171), producing a *living curriculum* with which children become environmentally literate through different modes of engagement.

Recommendations:

- Make explicit links to events and issues taking place in the world so the local becomes connected to the global and the planetary.
- Trial different modes of engagement anchored in creative arts, language, multilingualism, and multiculturalism, tapping into the culture and heritage reservoirs that children already have around the environment.
- Explore the sensory power of being outdoors and be curious as to how these encounters are perceived differently.

Acknowledgments

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