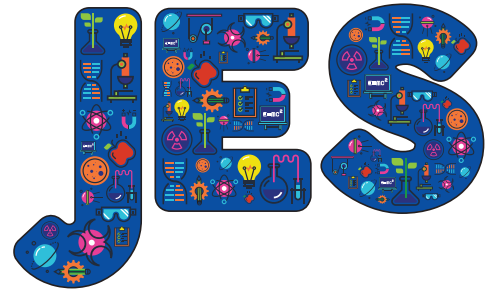


Working with external partners to support climate change education through a focus on design

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Abstract

In this paper we reflect on the opportunities and potential pitfalls encountered when schools work in partnership with external organisations. To illustrate wider issues, we examine the implementation of a pilot project aimed at introducing the role of design in the context of climate change in the primary setting. Our data comprise observational field notes of activities in situ, interviews with participating teachers, focus groups with children, and interviews with designers who led the activities across five different schools in England. In reviewing the data, we highlight the need for partners to build upon each other's skills, genuinely co-creating activities and co-leading lessons. Most importantly, we call for all climate change initiatives to be grounded in children's realities and provide ample opportunities for children to be agentic.

Keywords: Climate change education, professional design, school-based partnerships

Introduction

Requirements for the broad, multifaceted teaching and learning of environmental education – including climate change – in the primary curriculum in England are limited. For example, while the importance of children developing an understanding of climate change has been acknowledged (Department for Education (DfE), 2022), the science curriculum simply specifies that '*environments can change and this can sometimes pose dangers to living things*' (p.20). In the design and technology curriculum, meanwhile, it is suggested that teachers should draw on relevant contexts, including the local community and the wider environment, to

help children engage in design processes. However, no emphasis is placed on the interconnection between design ideas and pressing local or global environmental issues such as climate change. In short, there is currently no overarching priority, unlike the situation in previous curricula (see DfE, 2014), for making relevant connections relating to environmental and climate concerns across different disciplines.

Confounding the lack of policy relating to climate change education, we note that primary school teachers often lack the confidence and capacity to teach science and/or design topics, largely due to a paucity of specific professional development opportunities and limited curriculum time allocation in many schools (Bianchi, Whittaker & Poole, 2021). Given these pressures, schools often welcome the contribution of external partners. However, here it is important to note that establishing and sustaining these relationships takes time, consensus, resources and a shared rationale (for example, see Herne, Adams, Atkinson *et al*, 2013).

In this paper, we examine a pilot programme led by a small charity, Climate Change All Change (CCAC) (see <https://cc-ac.org/about>), in which designers from a variety of disciplines formed partnerships with primary schools to engage with content related to climate science, the impact of global climate change, and the nature of design (including professional design practice) in responding to climate change. The partnering designers from the fields of architecture, landscape design, urban design, permaculture and fashion worked with upper Key Stage 2 primary classes (Years 5/6, ages 9-11) over an extended period (c. 4-6 months), including four in-class sessions, on a design task that involved the children developing a response to a changed world of 2050. For example, children working with a couture fashion designer learned about bio-design and engaged in making sustainable textiles, with the ultimate aim of designing



a fashion outfit suitable for climates in 2050. Children working with landscape designers and architects, meanwhile, spent time mapping their local environments and learning about habitats, before seeking to design homes fit for the future.

Each co-design project ended with a presentation from the partner designers to reveal a professionally-produced design concept of the children's work. The results of the project – children's designs and designer-produced visualisations of such designs – were exhibited in school, and some were also displayed in local public institutions.

We, a team of researchers from King's College London, were invited to evaluate the pilot programme. In this paper, we reflect on the evaluation data and ask:

What factors are key to the success of this type of partnership relationship?

What can other prospective partnerships learn from this process?

In particular, we discuss the unique affordances of design-based projects when addressing environmental issues/climate change content, and consider how bringing expert designers into schools can shape the learning experiences of primary aged children.

Climate change education

Educators have long recognised the importance of teaching children about the nature and significance of climate change. Many pedagogical initiatives have been proposed and implemented, with varying foci and with varying outcomes (see, for example, Strachan & Davey, 2022; Dolan, 2022). In their review of literature regarding the provision of climate change education, Greer and Glackin (2021) identify key interrelated features that they suggest underpin an effective approach. They argue that the overarching quality required is a vision of (climate change) education that is open to alternative perspectives beyond sustainable development as part of perpetual economic growth, which promote an equitable coexistence of humans with all species across the planet (Sterling, 2017).

This alternative vision embraces the other important qualities: (1) accepting that climate change is a complex issue and that this complexity should be acknowledged (Stevenson, Nicolls & Whitehouse, 2017); (2) recognising that disciplinary knowledge is necessary but insufficient, as learners need to critique different sources and develop problem-solving skills (Kagawa & Selby, 2010); (3) acknowledging that local solutions can contribute to a global response, with a social justice-oriented perspective (Lotz-Sisitka, 2010); and (4) enabling young people to become participants in their communities' response to climate change, with a sense of agency for personal and collective action (Rousell & Cutter-Mackenzie-Knowles, 2020).

For primary school contexts, research findings suggest that programmes seeking to explore with children ideas related to climate change should help them to understand that there are no simple solutions to complex problems, and that we need many skills and many diverse ways of thinking to try to resolve parts of such problems. Initiatives should also give children opportunities for meaningful participation, acting as agents of change, rather than seeing themselves as merely inheritors of future climate change problems. Design ideas and processes can provide a valuable context for children to consider environmental issues and how they might be addressed.

Methods

To examine the impact of the CCAC pilot programme, we adopted an interpretivist approach, collecting qualitative data through lesson observations, interviews and focus groups. The programme was implemented from January to October 2022 in five state-funded schools from across England, representing urban and non-urban communities. For each school, observations were made during two

extended morning or afternoon sessions, with field notes supplemented by teaching and learning artefacts. Towards the end of the project, focus groups were conducted with pupils (n=37). The participating designers (n=6) and partnering class teachers (n=10) took part in one-to-one, semi-structured interviews. The data collected provided evidence for the project evaluation, and were then further analysed for this study.

Through an iterative review of the data between three researchers, we identified recurring themes relating to key success factors for the partnership relationship (Braun & Clarke, 2022). To consider what prospective partnerships might learn, we also drew on Greer and Glackin (2021) to frame our focus on climate change education.

Findings

First, we discuss the research question *'What factors are key to the success of this type of partnership relationship?'*

a. Partnership projects can benefit all parties and are to be welcomed.

The commitment and passion of incoming experts, together with their expertise in a topic, can clearly motivate students and teachers. Moreover, the specialist nature of a partnership encourages schools to carve out time to the project, creating space for children to engage. Many partnerships also provide schools with pre-prepared resources and equipment. As a result, gains in children's learning, and in their attitudes to a topic, are likely to increase. Several children within the CCAC pilot programme expressed views about how the project had given them a better understanding of climate change and a desire to make a difference:

'I didn't know anything about climate change until [the teacher] was explaining it and we were talking about it over and over with [the designer]'
(Student focus group, School D).

Notably, the programme was also perceived to be beneficial from the perspective of the teachers and the designers, as the following quotes demonstrate:

'I think I now feel more hopeful about the future. And I think that's what children need to be feeling, because otherwise they'll feel if it's going to be like this, we can't do anything. I think it gave them power. And I think that's what's really strong' (Teacher interview, School B).

'This feels like the most significant project of my year' (Designer interview, School E).

b. Input from 'professionals' in a primary context is a powerful way to showcase future careers.

Prior to CCAC, most children had not met 'a designer'. By the end of the project, the majority of children were able to recognise that designers work in a variety of roles and fields from fashion to architecture. Children clearly felt inspired when considering future careers in design and many commented that the career would offer a good salary and high status, whilst enabling them to work in a job directly related to sustainability as the following indicates:

'I enjoyed it as it's opening up new jobs. If I didn't know about sustainability or fashion designers, I wouldn't have liked to be one. If I hadn't known what it was, I wouldn't have known if I wanted to be it. It's opening up new jobs, and it's good because it shows children can do what they want, what they put their mind to'
(Student focus group, School A).

c. To support children's agency, climate change-focused educational activities should focus on the here and now.

When setting design tasks, it is important to make connections to children's own lived experiences and local contexts (Lotz-Sisitka, 2010). Further, whilst futuristic scenarios may promote imaginative

expression, it is essential to recognise that climate change is happening now: there is thus a moral need to support children to engage in processes that can address the current situation. Tasks should, therefore, be designed to give children autonomy and agency to make a difference.

An example of this would be a design task prompting children to respond to a tangible climate-related scenario happening currently in their own settings (localised flooding/drought; extremely hot summers) *and additionally* to develop a communication brief for a particular audience (local building developers, councillors, etc.). This would not only allow children to develop key design and communication skills, but also equip them with solutions that they could share in their communities, and key skills and insights to use in advocating for the planet. Further, as Rousell and Cutter-Mackenzie-Knowles (2020) have argued, it is important that any activity does not avoid or minimise reality. Indeed, there is a need to encourage children to think explicitly about the complex, wider impacts of climate change on other communities and more-than-human species around the world – key features of research-informed meaningful climate change education (Sterling, 2017; Stevenson, Nicolls & Whitehouse, 2017).

If activities are not grounded in reality, and if children are not supported to engage in finding solutions in the here and now, there is a danger that the idea of climate change becomes a hypothetical fantasy, as the following exchange between a researcher and a child illustrates:

Researcher: *Would you like to live here [in an environment that has been subject to extreme flooding]?*
Child: *Yes!!*
Researcher: *Even if all the land was flooded?*
Child: *Yes, it doesn't matter because I would just swim to my friend's house. And it's OK because I am a good swimmer. I hope it does flood.*

Further, in thinking concretely about steps that can be taken now – such as lobbying for environmentally-friendly measures in the local environment – young people can gain practical skills that can help to ameliorate, or at least give voice to, any forms of eco-anxiety (fear, despair, anger about the ecological crisis (see Pihkala, 2020)) that they might be experiencing.

We now turn to our second research question, *'What can other prospective partnerships learn from this process?'*

From our analyses, we would argue that there is one key lesson: **Partners need to recognise each other's strengths and play to them.**

For example, in our evaluation, we noted that the introduction of new approaches and unfamiliar presentation techniques can be both exciting and daunting. The children were unanimous in their appreciation of the activities: their excitement was as palpable as the energy and commitment displayed by the incoming designers. However, there were also moments of discomfort.

Specifically, projects with a design-based learning approach can disrupt standard patterns and require different ways of working, including group work. Such practices are arguably needed after the privations of the pandemic. However, providing more open tasks to children can present real challenges, particularly when coupled with introducing a new discipline of design and new concepts associated with climate change. The following quote illustrates the discomfort experienced by some children:

'[The designer] tells the children that they're going to start by drawing their school. They could draw a plan, or a section. Some of the children appear daunted and are struggling to work only from memory. Some ask for more details and are told they can draw in pencil or pen or however they want. They are told it doesn't have to be accurate and several look even more worried. Some children fish out rulers and rubbers but don't get much further. The back row of boys each draw a generic football pitch' (Field notes, School E).



Here it is worth noting that, in our experience, most teachers will seek to carefully manage tasks involving creative expression in the primary context, not least to enable activities to fit with children's expectations and abilities. Joint planning of activities between teacher and incoming partner is therefore essential to identify ways in which to structure tasks to best support learners, especially given inflexible timetabling slots and constraints with materials. Indeed, the central importance of joint-planning was subsequently acknowledged by all participating designers, as the following demonstrates:

'I think we were being too ambitious in places. We hadn't understood that some ideas – like scale – would take longer to explain and learn. Due to changes in the schedule, some parts got compressed and others were elongated, and it was very difficult to for us to change our ideas quickly enough' (Designer interview, School C).

In summary, to benefit fully from the complementary strengths of the incoming partners and the host primary school teachers, respective strengths should be identified and acknowledged upfront. Sessions should then be co-planned, incorporating the novel approaches and content specialisms of partners, but grounded in teachers' pedagogical expertise and deep understanding of the children in their class, drawing on the relevant expertise of both designers and teachers.

Conclusion

Working in partnership with specialist organisations and professionals, schools can be supported to deliver impactful climate change education. Incoming experts can provide schools with inspiring contemporary examples of how issues relating to climate change are currently being thought about and tackled. But, to do this most effectively, teachers and external partners must build upon each other's skills, genuinely co-creating activities and co-leading lessons. Furthermore, schools need to support incoming experts to learn and apply appropriate ways of working in the primary setting, whilst also being open to how best to benefit from the expertise, enthusiasm and skills of partners.

Finally, it is important to recognise that teachers are uniquely placed to have a deep understanding of children's cultural backgrounds, including parents'/carers' occupations, and local cultural and geographical places of interest. Such insights are invaluable in the development of activities that provide a greater sense of ownership and opportunities for children to be agentic. As one teacher from School C observed, a partnership project addressing design skills and climate change concepts prompts new learning, new skills, and a new readiness for responsibility:

'We have seen how mature and capable the children can be when they are inspired and encouraged' (Teacher interview, School C).

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