

# Implementing a sustainability and climate change strategy

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**Abstract** This article responds to the DfE sustainability and climate change education draft strategy that was introduced in November 2021 during COP26. It outlines the approach of one working group to considering what meaningful implementation of such a strategy means for teachers and learners in schools. The authors suggest a number of areas that should be considered when teaching these topics and discuss the importance of a shared language and vocabulary.

During COP26 in November 2021 the Department for Education (DfE) released their draft strategy on sustainability and climate change education (DfE, 2021), which on the surface is timely, overdue and welcomed in relation to nudging behaviours and empowering children and young people with a world-class climate change education. Exploring more deeply, we are aware that there are potentially many issues around the implementation of such a policy, however much it is needed. As Hargreaves and Fink (2006) emphasise, '*Change in education is easy to propose, hard to implement, and extraordinarily difficult to sustain*'.

The Teaching the Future survey (Teach the Future, 2021) investigated some of the challenges of implementation by carrying out a training and climate education poll on *Teacher Tapp* (a survey app), which elicited over 7500 teacher responses. Alongside this they also commissioned Opinium to conduct a climate change and education survey, in which 503 teachers answered a range of questions on climate change, their school and their teaching. The *Teacher Tapp* survey demonstrated that 70% of teachers felt they hadn't received any training on any aspects of teaching about climate change, while only 5% of all teachers who responded felt they had received adequate training. The Opinium survey reported that while 90% of teachers agree that climate education should be compulsory in schools, they felt overstretched with teaching compulsory elements of the current curriculum and lacked the expertise to teach children and young people about climate change effectively. This suggests that, however optimistic we as educators and as a society might feel about an increased focus on sustainability and climate change, there is a long way to go before teachers feel ready to teach it – and we are agreed that it must not just be taught, but taught well.

## Creating a shared language

As we know from much literature already in existence, there are concerns and needs associated with the specific

vocabulary in science. The need for learners to be able to articulate confidently the language of science is key in demonstrating depth of knowledge and understanding. There are many key words and phrases that need to be absolutely clarified, although we do not suggest doing this here, in order to ensure that the quality of sustainability and climate change education is maintained. We ask the following questions to prompt some thoughts:

- What is the purpose of climate and sustainability education?
- Is there a consensus around what it means to be sustainable?
- Are we talking about sustainability and climate change as part of environmental education?
- How carbon literate (Carbon Literacy Project, 2022) do children and young people (and teachers) need to be in order to drive pro-environmental decision-making and behaviours? Biesta (2020) would describe this as not the freedom to do as one wants but the freedom to act in a 'grown up' way.
- Where in the existing curriculum (of whichever nation) does this content most comfortably sit?

Climate change as a subject is complex, rapidly evolving and entangled with other environmental challenges. Do we have a good enough understanding of what a world-class curriculum looks like and how this should be sequenced from early years to secondary?

Carbon literacy is defined as: '*An awareness of the carbon dioxide costs and impacts of everyday activities, and the ability and motivation to reduce emissions, on an individual, community and organisational basis.*' (Carbon Literacy Project, 2022).

In order to take significant steps to ensuring the health of our planet is improved, there need to be actions that are seen through change in behaviours, and it is becoming increasingly clear that this is now no longer the problem of our children, as we are seeing decline within our lifetime. In order to enable future decisions to be

made, the basis for this must be equipping people with the knowledge to be able to do so. We do not want to debate the ‘knowledge rich’ curriculum position within this article, but we do suggest that at the heart of any addition to, or shift in, curricula content should be a secure knowledge-based understanding of the problem and also the potential solutions. As conservation biologist, author, teacher and global environmental activist Dr Robert Michael Pyle (2003) emphasises, ‘*At a time when the need for knowledge has never been greater, the tools for knowing are withering; and it has become a cliché that many species will become extinct without ever having been described.*’

## Context and content

One of the issues around teaching sustainability and climate change is the notion of ‘climate privilege’. A quick online search of this term yields numerous articles that explore the idea that ‘*to be climate privileged is to be untroubled by climate change, to have no personal experience of its negative effects*’ (Williams, 2020). In short, the effects are someone else’s problem. There are countries, such as the Solomon Islands, which are already suffering devastating effects of the climate crisis and yet we hear relatively little about this. Educators need to be able to shift their lens from the wider ‘generic issues’ to meaningful examples and then to the school’s own community (and back again) to exemplify that the impact of climate change is something we are living through globally but requiring local action. It is imperative, if behaviours are to be shifted, that the learners see this issue as impacting on them, and there is strength in the principles of the Science Capital Teaching Approach in relation to how this might be made to happen (the UCL website holds information on this pedagogical approach – see *Further reading*). Through ‘localising’ and ‘personalising’, as outlined in the Science Capital Teaching Approach handbook, content can be ‘*made personally relevant to the everyday lives of students*’. The approach goes beyond contextualising science – the key is to relate the content to examples and experiences from the students’ own lives (Godec, King and Archer, 2017:27). Again, this raises questions around the teachers teaching sustainability and climate change – do they have enough knowledge and expertise, are they able to contextualise the learning in a way that becomes meaningful for learners on a local level, and do they have the confidence to do so?

## The policy and strategy

Although the DfE’s strategy is in draft form at the time of writing this, the approach to implementation of any new content remains the same, irrespective of how

the content changes and is shaped in the forthcoming months. The draft policy is ambitious and states:

*Through education we have the privilege to be able to engage directly with young people who are passionate about the natural world, want to do their best to protect it and can influence their wider communities. Through their learned and lived experiences within education, we will provide opportunities to develop a broad understanding of the importance of sustainability and the causes and impact of climate change. (DfE, 2021:6)*

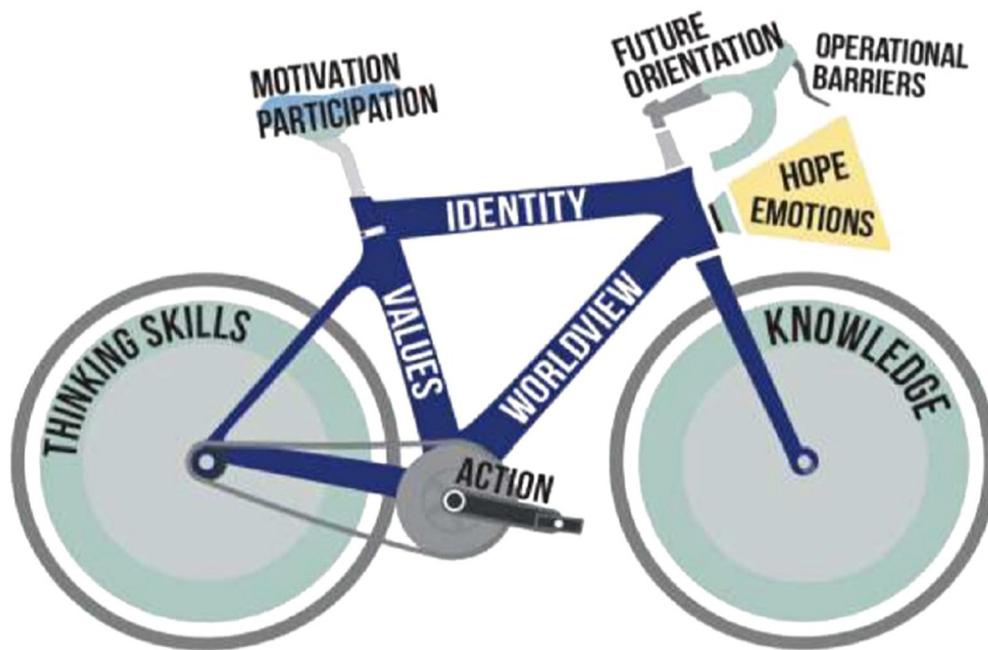
As we have mentioned, this is much welcomed but not without considerable challenge, especially when we consider the lack of clarity on implementation. We are clear that there are many different aspects to this content being taught, which must be taken into account for it to be done well and will go on to drive and inform the work of a Sustainability and Climate Change Education working group that draws upon the expertise of a range of practitioners and stakeholders (see *Acknowledgements* for further information). The collective input from this group has created a way forward that (they feel) best represents *meaningful* enactment of policy into practice and serves the teachers, learners and societal needs.

## Moving forward

In attempting to acknowledge the complexity of climate change education, Cantell *et al.* (2019) outline a model that resonated with the working group. It is based on a bicycle (see Figure 1), which represents that climate change education is ‘*one entity that requires all its parts to function together*’.

‘*Furthermore, a bike is not meant to stay still but rather needs a user to be in constant motion*’ (Cantell *et al.*, 2019:718). Sustainability, climate change, environmental education ... none of these are just one ‘thing’ and in order for them to be integrated well into a school they must be understood. This model has become a key element to support our thinking and future outcomes within the group and, although not perfect, it certainly offers a great deal of structure to creating meaningful learning.

In addition to what is taught, it is essential to consider *how* it is taught. There are two aspects to this. The first relates to resources that support teaching and the second to the pedagogical approaches. When considering resources, it is clear, again with a quick internet search, that there is a plethora of material out there already to support these areas of learning. It is more difficult to find resources that are quality assured and suitable for teachers who may not know any better; it is challenging to identify which are ‘the best’. Secondly, the way in which we teach these areas is also key. Thought needs to



**Figure 1** The bicycle model on climate change education; reproduced with permission from Cantell *et al.* (2019)

be given to the most appropriate pedagogical approaches at different ages within schooling to ensure that there are clear relationships formed between what the learners need to know and why they need to know it. To this end, progression forms a fundamental underpinning of our work, and we suggest that knowledge, resources, key values and attitudes to be explored, and approaches to teaching should be mapped to create a model that outlines a curriculum sequence that can make a real difference. It is essential to consider this sequence from pre-school through to secondary (and beyond) and, although challenging, with some aspects that will of course be subjective, it is worth doing.

## The role of science

According to the draft DfE strategy document, the natural place for this content to be homed is within science; and they state that by 2022 (yes, this year!) there should be:

*a Primary Science Model Curriculum, to include an emphasis on nature and the recognition of species – including species native to the United Kingdom – to ensure all children understand the world around them.* (DfE, 2021: 13)

We recognise that in some ways this does make perfect sense – much of the information shared around sustainability and climate change does have a scientific basis. There are some concerns, however, in relation to how this will turn out in reality. The science curriculum (and that of school in general) is already very full – which raises the question of what is to be removed

to house this additional content or where is it to be squeezed in? Subject knowledge, particularly for many primary teachers becomes a real concern. There have been studies over many years that consistently find that teachers do not have confidence with what is already in the science curriculum, even without adding more. There is also a concern around the focus on primary schools teaching this. We have alluded to the fact, through the inclusion of the bicycle model (Figure 1), that there is merit in considering sustainability and climate

change education more widely. Science supports much of the knowledge but, similarly to the introduction of the ‘British values’ (DfE, 2014), there needs to be wider consideration of the content. Secondary teachers may have more expertise in the content, such as increased carbon literacy and perhaps more knowledge of the interrelationships of living and non-living things, but it is potentially more challenging for secondary schools to consider the cross-disciplinary nature of this content compared with the way that primary schools can address ‘themes’ or ‘topics’. In short, implementation of any strategy will require thought and consideration and certainly should not be rushed.

The role of science, however, cannot be ignored. It pushes the need for scientific literacy further up the agenda, and we have seen the need for this with the COVID-19 pandemic and how society can be divided in terms of what they know, what sense they can make of science positioned for them, and how they subsequently act. The potential impact of not getting this right is that there will be no or too slow a shift in how people think and act to improve the health of our planet.

Science teachers, and the content they teach, have an integral role in developing a climate literate society – but it cannot be their sole responsibility.

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## Further reading

The Science Capital Teaching Approach – [www.ucl.ac.uk/ioe/departments-and-centres/departments/education-practice-and-society/stem-participation-social-justice-research/science-capital-teaching-approach](http://www.ucl.ac.uk/ioe/departments-and-centres/departments/education-practice-and-society/stem-participation-social-justice-research/science-capital-teaching-approach).

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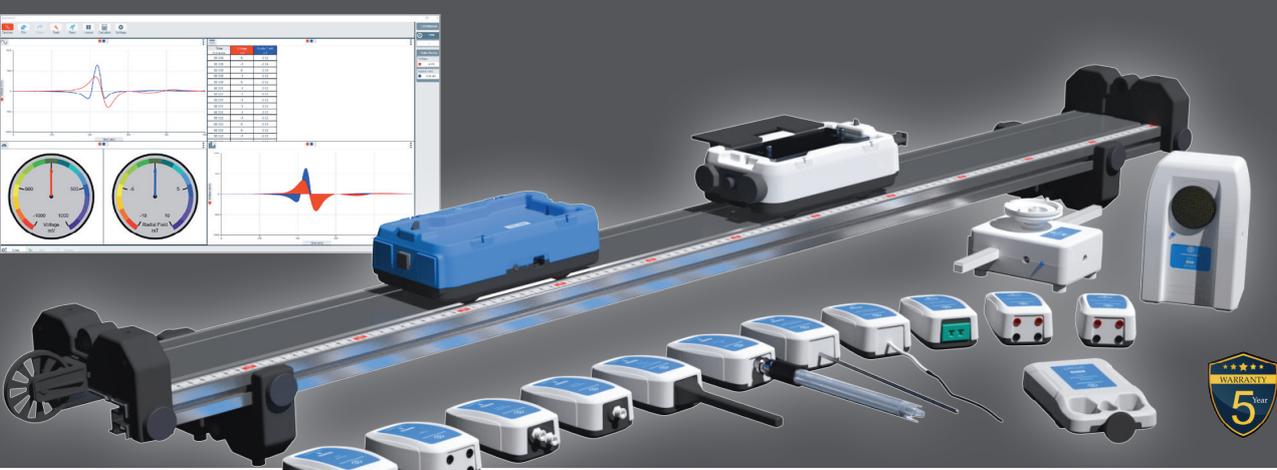
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