Introduction and background

The UN Agenda 2030 Sustainable Development Goal (SDG) 13, “Take urgent action to combat climate change and its impacts” includes a target to improve education. The place of climate change education (CCE) within the English curriculum is a hotly debated and pertinent topic, particularly in the run-up to the UK’s hosting of COP26 (1-12 November 2021) in Glasgow. This is a timely moment to take a fresh look at the current attitudes of educators in the UK. This recently published report by a team of researchers from the University of Bristol, the University of Exeter, and Oldfield School in Bath, does just that. The team surveyed the views of 626 primary and secondary teachers about their attitudes and beliefs regarding CCE. The average age of respondents was 40, and they had an average of 13 years teaching experience. The survey questions drew on an NPR/IPSOS survey of teachers in the US which was conducted in 2019. This enabled the research team to make useful comparisons.

Key findings

Overview of CCE

- In recent years educators have begun to explore types of CCE which have a wider scope than curricular knowledge, and which are more action-oriented. Action-oriented CCE embraces a range of activities, from communicating about climate change with friends and family, to collaborative projects in the community which may include those involving civil action.
- The close links between CCE and issues related to social justice issues have been increasingly recognised by both educators and researchers. For example, 85 educators surveyed in the UK by Howell and Allen (2019), rated social justice concerns as more motivating than biospheric concerns.
- In England, the first direct reference to climate change is found in the National Curriculum in Key Stage 3 within Science and Geography. Coverage of climate change is also compulsory at Key Stage 4 (ages 14–16 years) in Science, and students who opt to take Geography will encounter it again.
- Although academy schools in England do not have to follow the National Curriculum, they do have a duty to provide a ‘broad and balanced curriculum’ which most will understand as including CCE.
- However, the National Curriculum in England does not currently require children to understand the broader impacts of climate change on the environment, economy, and society, or to consider issues of social justice in relation to climate change. There is no mandatory requirement for any school students in England to understand or engage with the types of social action most likely to bring about societal change. This lack of emphasis on action is shared by other curricula around the world.
- The development of high quality CCE faces a range of challenges, not least ambivalent attitudes towards the anthropogenic causes of climate change and differing attitudes across nations. This disparity was highlighted in a YouGov poll in 2019 in which 69 per cent of Spanish respondents believed “the climate is changing, and human activity is mainly responsible”, compared with 38 per cent in the US.

Findings: The place of CCE in the curriculum

- Teachers were asked when they thought certain key elements of CCE should be introduced into the curriculum, i.e., understanding the science of climate change, understanding its root causes, understanding the impacts, and understanding issues of social justice.
- A majority of teachers felt that these elements should be introduced in Key Stage 2, although there was a fairly high degree of support for introducing them in early years or Key Stage 1. A majority of teachers supported teaching about the root causes of climate change at Key Stage 1.
- Further analysis of the data suggested that primary school teachers generally favoured earlier introduction of CCE into the curriculum, and that science and geography teachers generally favoured a later introduction of CCE.
- Teachers were asked about the introduction of elements of CCE related to mitigation and social action. There was a high level of support for the early introduction of conservation, mitigation actions such as tree planting, local campaigning, and advocacy. However, there was less support for teaching about civil disobedience. Although an overall majority felt that it should be introduced at some point, very few teachers felt that it should be taught before Key Stage 3, and around 35 per cent felt that it should never be taught.
- Teachers were asked about the curriculum areas in which they felt CCE should be included. The two most popular subjects for inclusion of CCE were Science and Geography, which are the two subjects in the National Curriculum where there is also already a direct reference to climate change.
• Over 50 per cent of teachers supported the inclusion of CCE in English (62.2%), citizenship (85%), Design and Technology (54.6%), and History (54.3%). The subjects with the lowest figures were music (21.1%) and physical education (18.9%).
• Based on a measure of “preference for cross-curricularity” obtained by calculating the number of subjects selected by each teacher, most teachers (51%) favoured a cross-curricular approach that involved 6 or more subjects delivering CCE.
• Question 3 of the survey asked teachers to rank a number of subjects, including CCE, in terms of their worthiness for additional funding.
• The highest priority reported was basic literacy, which was ranked as the highest priority by 42.2 per cent of teachers. CCE was in second place, with 19.3 per cent. In contrast, only 5 per cent of teachers in the above-mentioned US survey had ranked CCE as first priority, and the largest group (29%) had prioritised STEM (Science, Technology, Engineering and Maths).
• There were no significant differences between groups of teachers in the generally high priority they placed on CCE for funding.
• In England, a large number of teachers across all subjects teach, or talk to their students, about climate change. Overall, 73 per cent reported doing so. The figure was higher for slightly higher for primary teachers. This compares to 42 per cent in the recent US poll.
• Teachers were asked whether their pupils had brought up the issue of climate change in the classroom. The overall figure was 72 per cent, with a slightly higher percentage for primary. This compares to just 41 per cent in the US poll.

Teachers’ beliefs and attitudes about climate change and the delivery of CCE

• The overwhelming majority of the English teachers polled believe that the world’s climate is changing (98.7%), and that the change is being caused by humans (97.4%). Most also believe that we could act to lessen the effects of climate change (98.4%). The figures from the US poll were considerably lower; only 39 per cent of US teachers believed that climate change is caused ‘mostly or entirely by humans’.
• When English teachers were asked how well supported and resourced they felt about delivering CCE, the figures were lower. Forty per cent felt that they had the resources to answer pupils’ questions about climate change. Almost 60 per cent felt that their school encouraged them to discuss climate change in the classroom. Seventy-five per cent felt comfortable about answering pupils’ questions about climate change, and only 10 per cent felt that they would be uncomfortable teaching it. Unsurprisingly, teachers whose subject already included content on climate change felt more comfortable about teaching it.
• Whereas fewer teachers in the US poll felt that their school encouraged them to discuss climate change in the classroom (37%), a greater proportion of US teachers (51%) felt that they had the resources to teach climate change. A larger number (21%) of US teachers would feel uncomfortable about teaching climate change.
• Scatter plots suggested associations between feeling comfortable delivering CCE and climate change belief, encouragement from school and resource availability. Resources emerged as the factor most clearly linked to teachers feeling comfortable when engaging with students about climate change.

Discussion

• By supporting early introduction into the curriculum, teachers in England appear to afford climate change a level of precedence shared with literacy and numeracy, 2 other subjects of profound significance for economic and social well-being.
• In terms of pupils’ understanding, most UK respondents judged that the science, root causes, broader impacts, and the issues of social justice associated with climate change should be taught from primary school. However, this opinion contrasts with current mandatory provision in England which, like many other countries, does not refer directly to climate change at primary school.
• Even in countries where CCE is mandatory from an early age, teaching remains focused on the transmission of scientific knowledge.
• Most survey respondents appear to support the development of civic competency in relation to climate change and believe the fostering of such competency should begin at an early age. This finding is consistent with literature suggesting that primary school children are sufficiently developed for engaging in climate action.
• The support expressed in the survey for early introduction of CCE is in line with developmental evidence suggesting that effective CCE may benefit from a sound pre-school foundation. The very earliest educational experiences of children may be formative in their attitude to climate change, since culturally transmitted ways of looking at the world appear to develop early.
• Effective CCE can have an impact on parents and carers. Several US studies have shown that children’s school experiences can prompt intergenerational learning and overcome adult barriers to experiencing climate concern. Examples include children interviewing their parents about climate change and indirectly raising the level of parental concern about the issue, and 10–12-year-olds developing and implementing “family action plans” to mitigate climate change at the household level.
• The results of this survey indicate that teachers in England do not consider climate change projects aimed at social change to be too political for them to address. The data suggests a broad swathe of support amongst teachers in England for including participation in demonstrations as part of children’s learning, although most respondents considered this should occur no earlier than KS3 (ages 11–13).

The full document can be downloaded from: