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Science education in the context of the climate crisis

Lynda Dunlop and Elizabeth Rushton

At the conclusion of the Education and Environment ministers' summit at the UN Climate Change Conference in Glasgow (COP26), ministers recognised the role of education in responding to the climate crisis, and the urgency of embedding climate conversations into all levels of education. In England, the Secretary of State for Education, The Rt Hon. Nadhim Zahawi MP, revealed plans for a model science curriculum to '*deliver world-leading climate change education*' by 2023 (DfE, 2021: 22). In this special issue of *School Science Review* we examine some of the questions and challenges that must be addressed by science educators in the context of the climate crisis.

Recognising the need for collective action, we have welcomed contributions written with or by young people, often with larger-than-usual teams of authors, and which feature work that traverses traditional subject boundaries. Such multidisciplinary work draws attention to the ethical and political dimensions of science education and to the role of the arts – particularly storytelling and visualisation – in climate change education. Contributions from young people are included to create opportunities to listen to and learn from those we are working for. Collaborative and participatory work is a key feature of many of the contributions, for example in the use of simulations to investigate the effects of climate change and propose policies. A distinctive feature of this special issue is the inclusion of a response to articles from a youth panel, reflecting the importance of intergenerational conversations on the role of science education in responding to the climate crisis. We recognise that our emphasis on multidisciplinary, collaborative work that brings youth and teacher voice to the fore can at times stretch the boundaries of what is traditionally understood to be 'science education'. It is our hope that this continues the conversation about the science education we need in the context of the climate emergency.

We have included articles that reflect on the importance of science education in the context of the climate emergency in primary and secondary school settings. Several themes can be identified across these contributions. The first is that knowledge is not sufficient for science education in response to the climate crisis – it needs to be put to work. Authors describe ways in which

this could be, or should be, achieved. For example, King *et al.* share perspectives from educators about environmental education in secondary schools in England, Aston *et al.*, discuss how knowledge from a climate change model is used to direct their leadership actions, while Greer and Glackin argue that there is a need for more expansive and meaningful approaches to climate change education. A second strand relates to the centrality of ethics to education in the context of the climate crisis. Brock and Glackin prompt us to name the difficulties we might experience when responding to the climate emergency through education and consider what our duties are, and to whom, while Safaya *et al.* highlight the importance of developing pro-environmental values through experiential approaches to learning. Practical approaches are proposed by Hendry, who reports on the role of professional development to support teachers to have climate conversations, and Rudd argues that STEAM approaches to climate change education have value in engaging young people with climate science. Finally, we have reflections on the present (King *et al.*) and desired futures (Rushton and Dunlop) of environmental education in the UK. We conclude with reflections from a panel of young people aged 11–18. Young people will disproportionately be affected by climate change, and the panel discusses what the research means for teachers, school leaders and politicians.

Science education has the potential to play a powerful role in adapting and responding to the climate emergency. We hope that the questions and challenges presented in this issue of *School Science Review* spark discussion about how science interacts with people, politics and societies and the role of young people and teachers in placing climate change at the heart of education. We note that these articles emphasise perspectives from the Global North and we look forward to reading future contributions that respond to some of the provocations from authors in this issue.

Reference

Department for Education (2021) *Sustainability and Climate Change. A Draft Strategy for the Education & Children's Services Systems*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1031454/SCC_DRAFT_Strategy.pdf.

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