



Editorial

■ Ade Magaji



Discussing topical issues in science education

Welcome to issue 19 of ASE International. This issue highlights important topics in science education and how the various authors have addressed them in such a way that they contribute to teaching and learning. The topics are summarised below.

In the article, **Teaching children about climate change and sustainability**, Maria Rossini explains that schools have a vital role to play in helping young people understand and engage with the pressing issues of our time, such as climate change. She suggests that more effective and engaging climate education can help prepare them to play their part in combatting climate change. Practical science activities, such as those promoted in the

CREST Awards hydrology resources, can help young people relate to and contextualise the issues that will inevitably play a formative and significant role in their futures – inspiring, educating and preparing the new leaders, scientists and engineers of tomorrow.

The article by Jessie Mytum-Smithson and Mary Howell entitled **Links to everyday life: small tweaks to teaching science that can make a big difference**, discusses teachers' experiences of making simple changes to lessons to enhance students' abilities to make connections between their everyday knowledge and science, and enrich their perception of what counts as science, increasing their science capital. The classroom work followed findings by the SPIRES team at King's College London and later University College London, which found that, although young people from diverse backgrounds are interested in science, those with fewer chances to connect with science in their everyday lives are less likely to continue their interest or aspire to science jobs.

Gaynor Weavers' article on **Look, think, talk! Making thinking more 'visible' in the classroom**, explores how to make thinking more visible in the classroom through various thinking strategies. The article suggests that it is what is done with the outcomes of the strategies that make them effective for formative assessment of children's understanding. This involves helping children to review changes in their ideas and how the strategies have enhanced their learning.

The article **Practical steps to building science capital in the primary classroom** by Juliet Edmonds, Fay Lewis and Laura Fogg-Rogers explores how meeting with engineers and scientists and other initiatives can help to increase science capital. It highlights that differences in science capital can have a significant impact on children's aspirations as regards STEM careers, and doing science activities that focus on improving life appears to be a constructive strategy for raising children's interests and attitudes.

Michael Adjani's article **The implementation of metacognitive strategies in pedagogy: supporting anatomical plasticity in the developing human brain**, involves a systematic scoping of literature that draws upon various studies to include discussions on how current strategies in education support metacognition, the prevalence of neuroplasticity in education settings, and the relationship between metacognition and brain plasticity. It concludes that, to truly understand the implementation of metacognitive strategies in classroom pedagogy and link this with anatomical plasticity, researchers must be mindful of taking a multi-faceted approach that addresses all areas of study and builds upon current best practices. One of the questions that it raises states: *What do educators know about neuroplasticity, and do they consider this when teaching in classrooms?*

In the final article, **Science trainee teachers' experience of outdoor learning and its inclusion in the curriculum**, Adjani *et al* highlight the importance of outdoor learning and review its value within the teaching of science





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education. It includes trainee teachers (pre-service teachers) recounting their experience of an outdoor learning session attended during their Initial Teacher Training (ITT), and how they have collaboratively worked with their tutor to design an outdoor learning experience to develop relevant knowledge and skills that will allow them to implement such in their new roles as early career teachers.

Thank you for taking the time to read our articles. Please see below/the next page, which reports on important news regarding ASE's international developments.

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Important news from ASE regarding future international developments

Integrating global aspects of science education into our mainstream activities

Earlier this summer, the ASE Trustee Body and Education Group agreed that the International Group (IG) should be dissolved. The proposal was at the recommendation of the Group themselves, as members of the Group felt that the IG had achieved what it was established to achieve – namely to ensure that international links and global aspects of science education were mainstreamed within ASE activities. Our Annual Conference now features international sessions throughout the three days at Conference, we have excellent links with sister organisations in Europe, America and Asia, and we are proud to be working with schools and organisations in Thailand and China to support science educators in these countries too.

Whilst the International Group may no longer meet, we remain highly committed to the value of learning from global perspectives and fostering cross-cultural understanding. Access to and understanding of international science education research, practice and pedagogy can help our members both here in the UK and across the world to improve their teaching methods, pedagogical approach, engagement and interest. We will continue to grow our international community and work with global partners to share, learn and support excellence in international science education.

ASE membership is open to all, including educators working outside the UK, and we are keen to nurture and support this international community as well. We are currently looking at developing a dedicated online international event with international speakers and, if we can find willing volunteers, a series of podcasts featuring speakers from across the world.

Similarly, from January 2024, we will no longer publish *ASE International*. We are pleased to say that, from January 2024, international content will feature more widely in our core journal offer – *EIS*, *SSR* and *Primary Science* – helping to ensure that we are learning from and sharing global science education news and content with our mainstream audience.

This means that this issue 19 of *ASE International* is the final issue of the journal. We would like to thank our previous Editors, up until recently the Chairs of the ASE International Group, for their hard work in pulling the journal issues together, and also the Group themselves, who acted as an Editorial Board. Special thanks go to the current Editor, Ade Magaji, for his continuing efforts to not only co-ordinate the selection of suitable pre-published articles, but also in sourcing and collating a growing amount of original content.

