



Editorial

■ Ade Magaji



Addressing pedagogical challenges in science education from practitioners' perspectives

Welcome to issue 18 of the *ASE International* journal. This issue highlights pedagogical challenges in science education from practitioners' perspectives from different parts of the world. The topics are summarised below.

In the article, **Students love molecular models: Hypothesis-Experiment Classbook If You Could See an Atom**, Yokotani *et al* highlight the importance of promoting science education through the use of materials and methods to teach the most basic concepts or laws of science. At the heart of this process is experimentation and using ideas and guidance from the HEC book to guide teachers and students on relevant activities to promote fun and engaging lessons. The authors draw on a wealth of experience from teachers in Japanese schools using the HEC Classbook when teaching the concept of atomism. They conclude that the Classbook is used in Japan and other countries of the world to promote science learning.

The second article by Yokotani *et al* entitled **Students love applying molecular models: Hypothesis-Experiment Classbook The Three Phases of Matter** builds on the previous article utilising the HEC Classbook as an aid for teachers and students to promote teaching and learning. This article focuses on a Classbook entitled *The Three Phases of Matter* and explains in detail experimentation using molecular models followed by problem-solving tasks to allow students to apply the concepts learned. They conclude that the Classbook provides enjoyable learning and class experiences largely uninfluenced by student groups or the experience of the teacher.

Keith Ross's article on **Everyday Life, climate change and the Fuse Videos** discusses the relevance of teaching science in contexts that are real to students. This involves using everyday happenings and global issues, illustrated by a lesson, starting with burnt toast. This is followed by suggestions for lessons addressing the science behind climate change and sharing online resources that can help students both in the classroom and remotely. The variety of activities in this article would help promote teachers' pedagogy in creating lessons that link to real-life situations and promote a fun learning environment for inclusive learning.





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The article **Towards a comparative education: a wake-up call to developing quality STEM Education in Nigerian public schools** by Ade Magaji reflects on the current state of STEM education in Nigeria and what measures can be taken to improve it. It draws on evidence from interviews with stakeholders including teachers, principals, local education authorities and STEM experts, and employers. The outcome will pave the way for an extensive study of STEM in Sub-Saharan Africa.

Richard Dawson's article, **Biomimicry – science & design inspired by nature**, describes the act of learning from and emulating natural forms, processes and ecosystems to create more sustainable designs. It creates the awareness that schools will find a supportive step-by-step process to guide students through a biomimicry design journey, and an associated set of teacher resources and class activities for the indoor and outdoor exploration of biomimicry.

Thank you for taking the time to read our articles. Please contact the Executive Editor if you would like to write for this journal (details on page 2).

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