



Theme for this issue: Distance education and play for learning in the context of COVID-19 and lessons learned: innovation, impact and challenges.

Welcome to issue 15 of ASE International. This issue acts as a reflection of the online 2022 ASE Annual Conference, in particular the International Day. For those who attended the Conference, I hope that you enjoyed the event and the varied programme on offer. Thank you to the organisers who worked diligently behind the scenes, the presenters and all those who made the day a success. We look forward to the next ASE International Day in 2023.

The keynote by Professor Marilyn Fleer was thought-provoking, as it engaged the participants in exploring ways to promote play in science learning, and how children's scientific learning in the classroom can be enhanced through imaginary play. This concluded with rounds of questions from the participants on linking theory to practice. The discussion was sustained in the all-panel session on 'Play in Science Education', where the panellists brought to light their experience in this regard and how play can promote teaching and learning.

This issue focuses on *Distance education and play* for learning in the context of COVID-19 and lessons learned: innovation, impact and challenges. There is no doubt that the pandemic presents varying challenges and opportunities concerning students' learning. Many schools have had to adapt their teaching to meet the needs of students by using various online means. The benefits often cited include instant access to lessons, more content coverage, engaging with technology, and saving time and money. On the other hand, the disadvantages may include emotional, physical and cognitive issues, poor assessments, and students from low socio-economic backgrounds missing out on their education.

In the article *Exciting remote practical science*, Sarah Sisson explores how practical work can be done remotely and what has been learned through the COVID-19 pandemic. The article advises teachers to trial remote practicals several times to get them right, by ensuring that equipment shown to the class is easily accessible and investigating the clearest way to demonstrate practical work. Sarah asserts that remote workshops have provided enrichment without COVID-19 risks. However, she encourages schools to follow CLEAPSS guidance on managing risks during practical work.

The article by Lewis Morgan and Ian Turner, *Can playing table-top role-play games help children learn?* is an example of how play for learning can



promote children's investigative skills using a game such as Dungeons and Dragons. The game involves people playing various characters in a collaborative story-telling context, which has been shown to inspire creativity, social connectivity, critical thinking and many other personal skills. The authors link how science objectives in the National Curriculum can be achieved through suggested classroom activities with ideas to meet the children's learning needs.

The article by Kim Chwee Daniel Tan et al on **Using** web-based diagnostic assessment describes a web-based, three-tier multiple-choice test for the formative assessment of students' understanding of chemical bonding. The diagnostic questions are created using Google forms and they allow teachers to identify whether students have alternative conceptions based on their responses to the questions. The results obtained can lead to follow-up discussions with students if they have difficulties with the concepts involved.

The article by Professor Marilyn Fleer, *Promoting science learning through imaginary play, or developing children's play through science learning,* brings to light ways of teaching science in the early years by bridging the gap between learning science through play and in the classroom. It explores the notion of promoting science learning using imaginary play and engaging with science concepts. This involves selecting a dramatic story, designing an imaginary play space, planning the conceptual play world, identifying a problem that needs a science concept and outlining the role of the teacher.

In this issue, we have included two articles that are not aligned with the theme, but are valuable to share with our members. *Other countries' science curricula – and what you learn when you look around!* by David Shakespeare discusses the expectations of a well-written science curriculum

across various countries. The article suggests that any national curriculum should simultaneously delimit the science knowledge expected for each age group, present ideas about progression and empower teachers to make good decisions.

An original article, *Evolution and religion: the conflict in teaching Darwinian theory,* by Heslley Machado Silva, highlights pedagogical strategies in teaching the concept of evolution and how various views on the topic could create challenges. It suggests that science and biology teachers must not refrain from facing the challenges of teaching biological evolution, despite groups of people who deny its veracity and importance for science.

Finally, we ensure that there is a connection between the international conference themes and journal themes each year and would encourage more people to publish in the journal. Our publishing criteria are on page 36 and the theme for the next issue, due out in August/September 2022, is **SEND**, inclusion and mental health. Please have a look at the publishing guidelines, and consider sending in your work for publication.

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