

# The Journal of Emergent Science

Issue 16 Winter 2019



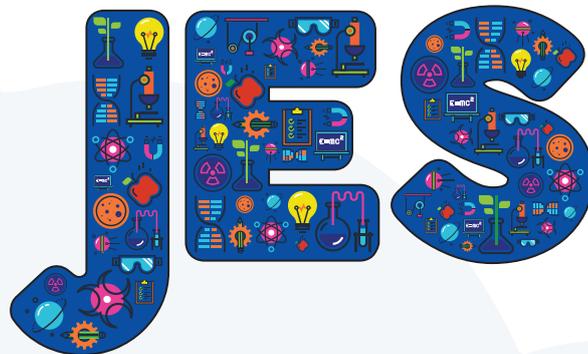
The **Association**  
for **Science Education**

*Promoting Excellence in Science Teaching and Learning*



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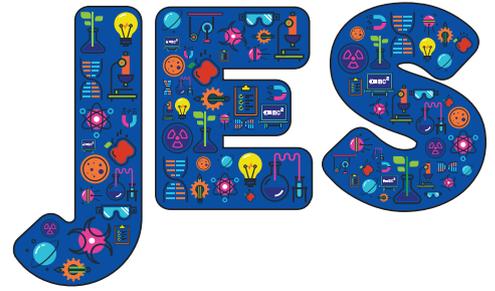
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# Editorial

● Amanda McCrory ● Suzanne Gatt



## Welcome to issue 16 of *JES*.

This issue presents the second part of the paper series from the 2017 ESERA Conference (first part published in *JES* 15), as well as a number of papers contributed by the Primary Science Teaching Trust (PSTT).

The ESERA Special Interest Group on Early Years promotes collaboration among researchers interested in early years science. We are happy to continue to support researchers by disseminating their work in early years science education. *JES* can thus act as a channel between research results and early years practitioners. It is essential for teachers and other practitioners to keep abreast of the latest advancements in education and learning.

To emphasise the link between practitioners and research, the contributions from PSTT provide a more practical aspect of science education, which can act as an inspiration to promote more science teaching among early years and primary teachers. The growing interest in early years science has led to increased knowledge and understanding about young children engaging with the world and in science as they investigate scientific phenomena, making it essential to bring together research and practice if we want children to engage in authentic and effective science experiences from a young age.

There are two central themes in this issue – the use of technology in science teaching, as well as a discussion regarding quality early years education in giving children authentic learning opportunities both in and out of the classroom. The use of technology in early years and primary classrooms in the UK has become a focus since computing became a core subject in the National Curriculum and it is gratifying to see that this is also a focus elsewhere across Europe. As the world continues to

make technological advances, children will hopefully continue to benefit, as it is well documented that children are already interested and engaged in using technology in their own lives. Furthermore, we know that the use of technology in the classroom can impact positively on children by improving knowledge retention and encouraging individual learning and collaboration, whilst promoting life skills. There are also benefits for teachers: technology and virtual learning environments can enhance traditional approaches to teaching and provide resources, lesson plans, subject knowledge support and a platform for shared ideas. Providing authentic learning opportunities for children in the science classroom is a key focus of science education and something upon which we have focused in previous issues of *JES*. The importance of providing this both in and outside the classroom cannot be underestimated, as we know that the significance of eliciting and promoting curiosity and scientific thinking in children is paramount if we wish to foster a life-long love of science.

In this issue, there are four contributions from the 2017 ESERA Conference. **Thorshag** examines the use of technology in construction play and interestingly uses variation theory to analyse data. Outcomes emphasise the important role that conceptual understanding of science concepts play in enabling children to explore scientifically and subsequently develop their understanding further via inquiry. The paper by **Kalogiannakis and Papadakis** examines and discusses the use of *ScratchJr* (software designed to be used as a tool for computational thinking) on pre-service teachers' teaching of science and computational thinking and the very positive impact this has on teachers' self-efficacy.

**Kallery** focuses on quality and describes a small study in Greece where early years teachers reflect

on those factors that influence quality early years education provision in science. The paper provides insights into the balance between personal knowledge and competences, and external school factors on educational experiences created.

**Cantó et al** tackle pedagogical practices in and out of classrooms, and discuss the perceptions of Spanish teachers during their initial teacher training. Outcomes highlight pedagogical approaches to teaching science in the early years as traditional, with less hands-on, active exploration and inquiry as expected. The results of this paper are important not only for teachers of science in Spain, but also for teacher training educators, especially if scientific inquiry and authentic learning opportunities are to be provided for in the Spanish education system. This is exactly what **Ritchie et al** discuss in their interesting paper examining the oral capabilities of Year 2 (6-7 years) and Year 6 pupils (10-11 years) when exploring simple machines and their applications: outcomes highlight the importance of resources, language and questioning when providing children with authentic scientific learning experiences.

In addition to this, **Grimshaw et al** examine in particular the impact of outdoor learning on children whose first language is not English, as well as providing sensory learning opportunities for all children. Finally, **Wajrak et al** describe the experience of implementing PSTT teacher professional development programmes in Australia and their impact on primary teachers.

This issue brings an array of contributions that touch on various aspects, all of which are salient to early years science education. We hope you enjoy the articles in this issue and that they inspire your practice!

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