

# Play-based pedagogy in science: realising ambitions from a Scottish perspective

**Kirsty Aitchison and Robert Collins** from the University of Strathclyde discuss play-based pedagogy in Scottish early years



Developing meaningful contexts for learning: promoting confidence, creativity and curiosity through a Forest School approach

It is difficult to believe that the 'new' Curriculum for Excellence (CfE) for schools in Scotland is nearing its 20<sup>th</sup> birthday in terms of operation. Since its inception all those years ago, it has been steadfast in its support of active learning in the classroom for learners aged 3–18 years. In this time, several pedagogical support documents have been published to put flesh on the bones of the CfE vision, through from *Building the Curriculum* (2006) to the more recent support for early-years pedagogy and practice, *Realising the Ambition* (RtA), in 2020.

This latter document is now ubiquitous in Scottish early-years establishments and constitutes the most up-to-date national practice guidance. As such, it underlines the importance of play in the learning experiences of younger children. Although CfE had long promoted a playful approach to teaching science through exploration, investigation and collaboration, RtA advice specifically places enhanced focus on harnessing aspects of children's

confidence, creativity and curiosity. It is envisaged that this should shape a lifelong love of learning as children begin to discover and understand the world around them. Chief among these aspects is creativity, as this focuses on the child's ability to wonder, to see and use things differently, all in the realm of exploratory and investigative play. This play is deemed as vital for all learning, to help children deal with the pace of change in the modern world around them and build competencies and transferable skills for the future. Although more traditionally utilised to support language and literacy development, the same approach should also be viewed as fundamental to building attainment and engagement in STEM in the early years.

## Child-centred approach

Fundamental to success in all of these endeavours is a commitment to developing a child-centred approach to pedagogy and practice. Importantly, the play-based





**Embedding STEM across the environment: encouraging children to see themselves as scientists, inventors, creators and innovators at the mud kitchen**

learning of RtA places value not only on children leading their own learning, but on a holistic and asset-based approach. This means that learning is founded on children's own interests and motivations – a controversial idea for some – and certainly relies on their teachers developing sophistication in terms of responsiveness and flexibility in their teaching. Success relies heavily on commitment to noting children's choices and providing time and space to develop their interests and adapt learning experiences as these interests grow and develop. In short, in focusing on children's voice and recognising that authentic learning must – and should only – start with the child.

In concert with these are also the dispositions of inclusion to support social wellbeing, opportunities for collaboration and conversation and celebration of children's achievements. These require teaching that recognises the interconnectedness of the adult, child and environment, co-constructing meaning with them, tapping into the rich experiences of knowledge in family and community, and a willingness to try new ideas. In terms of science teaching, such an approach will resonate well with those teachers well versed in constructivist or social constructivist approaches, with focus on the 'lone scientist' and vicarious learning through collaborative dialogue. In short, RtA's approach would seem to be ideally suited to the teaching of STEM to young learners.



**A provocation to play and learn: building on children's interests to develop a meaningful context for learning**

### The role of the 'playful adult'

As with all things, ambiguity in this field is the proverbial 'fly in the ointment' of successful operation. Many similar-sounding terms abound, playful pedagogy, play pedagogy, play-based learning, or just plain 'play', all appearing in the writing about the subject. Each of course has its own take and definition of play and how this translates into practice, which can be exceptionally confusing, especially when trying to establish the grounding for a new pedagogical approach. What is distinctive about RtA's interpretation, however, is its focus on the attributes of the teacher. As with constructivism and social constructivism, the boundaries of authority are blurred; RtA's interpretation goes one step further – it asks teachers to consider the role of the 'playful adult' in supporting early learning and engagement.

Key here is knowledge of early learning and development, curriculum and pedagogy. It relies on teachers developing skilful interactions and conversations to help scaffold children's thinking. It needs a frame of mind that allows for the construction of open-ended experiences to encourage exploration, investigation, provocation and stimulation. It requires space in teaching to embrace opportunities across the learning environment and beyond into family and community. It also requires faith in the iterative process; this is a skillset that can only be mastered through practice. In essence, it requires a good





**Nurturing children's identities as learners: providing opportunities for collaboration, conversation and problem-solving through exploratory water play**

deal of commitment and the courage to be authentically socio-scientific in learning and teaching.

### Implications for practice

All of this sounds fine, but a tad theoretical. However, as many early-years establishments in Scotland have proved, it is entirely possible in practice. As with many new ideas, establishing the fundamentals is key; these are identified in Box 1 in a broad sense for anyone brave enough to respond to RtA's call.

### Conclusion

When done well, commitment to these simple steps generates huge amounts of learning in science and, importantly, genuine engagement in children. This approach can be used across a whole range of concepts and lends itself well to the responsiveness needed to meet

### Box 1 Establishing the fundamentals

- Develop meaningful contexts for learning to support and challenge children's thinking, embedding STEM across the environment through authentic learning experiences.
- Arrange informal professional collaboration events to build practitioners' confidence in promoting play-based approaches and building motivation in STEM. Share good practice and establish a local network to support professional learning and practice.
- Actively nurture children's identities as learners and creators in STEM – look for opportunities for collaboration, problem-solving and investigative exploratory play.
- Regularly encourage children to see themselves as scientists, inventors, creators and innovators through open-ended resources and provocations.
- Build connections with families and communities and tap into local expertise to support pedagogy and practice.

the idiosyncratic needs of young learners of science. The pictures in this article evidence this really well. We can fully recommend giving this type of science learning a go with your early-years class!

Photos courtesy of Michaela McCune, Early Stages Teacher, West Dunbartonshire Council.

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