ONLINE EDUCATION: TEACHING IN A TIME OF CHANGE

• Paper / Proposal Title:
Place Based Learning in STEAM and Science Teacher Education: 3 Responses and student perspectives to online learning due to COVID-19

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• Abstract (255 words):
The development of science teachers requires lab-based and place-based learning in universities and schools. This is inherent to understanding the nature of learning science and associated pedagogy. Place based learning requires the development of teaching skills through working in a community of practice (Wenger, 2004).

In March 2019, with the outbreak of Covid-19 and lockdown, teacher education programmes had to adapt to a blended learning approach. This project explores that journey across three teacher development programmes within one HEI. The programmes to be discussed are SKE (Subject Knowledge Enhancement), STEM and PGCE Secondary Science. It unpicks how the participants responded to that provision and how the TEL (technology enhanced learning) pedagogy evolved.

This paper discusses the approaches taken in overcoming the challenges in doing that to deliver place-based learning online, whilst maintaining the essence of social learning and collaborative learning (Launilllard, 2011). It draws on Salmon’s (2003) five stage
model of e-learning to describe the process and presents insights from a student perspective, drawn from feedback and focus groups.

The HEI TEL strategy was to make use of MS Teams and Blackboard. Laboratory work and school experiences made use of a combination of Videos, Home Labs and Group Meetings and taught sessions, which will be discussed.

The unique contribution of this research is that it is a collaborative project that can allow comparisons to be drawn whilst offer lessons to be learnt in improving online provision and TEL pedagogy moving forward. The research questions focus on the participants perceptions of learning and reflections on learning.

• Author(s) Biography (200 words each):

Jo Anna Reed Johnson is a Lecturer in Science Education at the Institute of Education, University of Reading in the UK. Her current responsibility is Programme Director for the Subject Knowledge Enhancement Programme. This is a pre-training programme for the Post Graduate Certificate in Education, that ensures training Teachers are able to meet the requirements of the Teachers’ Standards in the area of their subject specialism (science) by the end of their one year PGCE Programme. She is responsible for the pedagogy for a blended learning approach. Her PhD at Manchester Metropolitan University was in the area of Education for Sustainable Development and explored Whole School Approaches in the UK and South Africa.

Gaynor Bradley is a Lecturer in Science Education at the Institute of Education, University of Reading in the UK. She joined the university after 25 years teaching physics, chemistry, and mathematics in two local secondary schools. She also spent many years as Head of Science, Director of STEM and Senior Teacher. Before joining the university, Gaynor mentored several Reading University trainee teachers. She now works on the Secondary Science PGCE Programme and the Subject Knowledge Enhancement Programme as lecturer and Academic Tutor.

Andrew Happle is a Lecturer in Science Education, at the Institute of Education, University of Reading in the UK. He joined the University having taught in Schools for a number of years. He is Programme Director for the PGCE Secondary Science and a member of the Warden’s Community of Practice. He has research interests in climate change education, blended learning, enquiry focused approaches to science education and leadership in science.

Caroline Foulkes is a Lecturer in STEM Education, at the Institute of Education, University of Reading in the UK. She is Programme Director for STEM Education.