

Pre-Service Science Teachers' Modelling Practices in STEM Activities

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Models and modelling play a critical role in science education and, more recently, science, technology, engineering and mathematics (STEM) education. Although recognised as important by many researchers, few attempts have been made to develop models and modelling in STEM teacher education programmes. In my presentation, I will discuss the roles of models and modelling in STEM education and introduce Model-based Integrated Inquiry in Science, Technology, Engineering and Mathematics (MIISTEM), which has been developed by my Global Challenges Research Fund (GCRF) research team. I will also share the results of pre-service teachers' understanding and practices in models and modelling during a STEM methods course. I will discuss pre-service teachers' modelling practices in terms of the meanings of a model, the purposes of modelling, the multiplicity of models and changes in models. The implications of my presentation will contribute to models and modelling in STEM teacher education programmes.