



SMTE 2017 Pre-conference Workshop 1
7 November 2017 (0900-1200)

Using a Makerspace approach to develop integrated STEM education

Rachel Sheffield, Rekha Koul and Susan Blackley

School of Education, Faculty of Humanities, Curtin University

rachel.sheffield@curtin.edu.au; susan.blackley@curtin.edu.au; r.koul@curtin.edu.au

Nicoleta Maynard

Faculty of Science and Engineering, Curtin University

n.maynard@curtin.edu.au

Makerspaces provide *creative spaces where people can gather to make or create new things. The Makerspace approach is a hands-on creative approach to learning.* From a teaching perspective it provides an authentic space where a considered and integrated approach to STEM education can be implemented with a focus on *learning by doing*. This approach also supports the development and demonstration of the 21st century learning skills of communication, collaboration, creativity and problem solving.

This workshop is designed to: (1) support participants to make two different Makerspace-type STEM artefacts, (2) reflect in small groups on the Makerspace approach using some guiding questions, and (3) share the Australian and Indonesian projects conducted in 2016-17, including the impact of a new model of professional learning and the associated data. Whilst the Australian and Indonesian projects targeted pre-service teachers, this workshop is relevant to any teachers of science, maths and technology.

It is envisaged that participants will develop a sound understanding of the potential affordances of this approach to integrated STEM education and experience first-hand a more engaging and authentic approach to science, maths and technology education within an engineering context.