

ENGAGING TEACHERS OF THE FUTURE THROUGH 'OPENING REAL SCIENCE: AUTHENTIC MATHEMATICS AND SCIENCE EDUCATION FOR AUSTRALIA'

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ABSTRACT

Opening Real Science is a 3-year Australian Government project of the Office for Learning and Teaching. Led by Macquarie University, the project is a unique collaboration between teacher educators, scientists, mathematicians and ICT designers to bring, relevant, authentic science into teacher education programs. The partnership includes seven Australian universities and global experts in science, mathematics and technology. The project will develop innovative teacher education program modules in mathematics and science education and a unique professional experience model.

An innovative 'real science' approach will be developed including assessing learning using rich scientific investigations related to specific areas:

- Mathematics (e.g., Financial Literacy, Statistics and data modelling)
- Earth and space sciences (e.g., Conceptions of weather and climate)
- Astronomy (e.g., Indigenous astronomy, Planetary Nebulae)
- Physics (e.g., Sound, Light)
- Chemical Sciences (e.g., Pseudo Science, Visual Chemistry)
- Biological sciences (e.g., Biology in Action, Big Theories in Biology)

The professional experience (practicum) model will enable groups of pre-service teachers to work collaboratively with trained school-based teacher mentors and practising scientists. Evaluation data will include empirical evidence of the project's impact on pre-service teacher knowledge, pedagogy and attitudes.

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