

INSPIRING MATHEMATICS AND SCIENCE IN TEACHER EDUCATION: PROJECT UPDATE

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BACKGROUND

Improving the quality of mathematics and science teaching and learning in schools is an issue high on the agendas of governments, universities, and the teaching profession itself. Demand for well-qualified teachers is an area of pressure at a time when teacher education in Australia is coming under increasing scrutiny due to the emergence of a national education policy environment. Inspiring Mathematics and Science in Teacher Education (IMSITE) is an Office of Learning and Teaching project funded under the three year Enhancing the Training of Mathematics and Science Teachers Programme. The project brings together a team of leading mathematicians, scientists, and educators from six universities representing diverse institutional, geographical, and socioeconomic contexts: The University of Queensland (lead), James Cook University, The University of Sydney, The University of Newcastle, University of Wollongong and The University of Tasmania.

AIMS

The aim of the project is to foster enduring collaborations between university-based education, mathematics, and science academics in order to prepare teachers who have a contemporary and dynamic view of the STEM disciplines. To this end, the project seeks to institutionalize new ways of integrating the content and pedagogical expertise of STEM academics and mathematics and science educators to enrich three key stages in the preparation of teachers: recruitment into teaching careers, participation in the pre-service program, and continuing professional learning following graduation. This project is designed to ensure deliberate and systematic engagement with universities beyond the lead and partner institutions, it will generate outcomes useful to all Australian institutions that offer pre-service teacher education programs. As well as producing resources that other universities can adapt to their own contexts, it seeks to identify models and principles for integrating content and pedagogy and for fostering collaboration that could be taken up by other disciplines involved in the pre-service preparation of teachers.

DESCRIPTION

The six participating universities are collaborating to develop, test, and evaluate the following approaches:

- a) recruitment and retention strategies that promote teaching careers to undergraduate mathematics and science students;
- b) innovative curriculum arrangements that combine authentic content and progressive pedagogy to construct powerful professional knowledge for teaching;
- c) approaches by which universities can build long term relationships with teacher education graduates, enabling them to continually renew their professional and pedagogical knowledge of mathematics and science.

Various workshops and roundtables designed to engage participants as critics, interpreters, and potential adopters of the products and processes of our project have been held in Australia and overseas. This presentation will share ideas raised at these workshops and summarize preliminary outcomes and activities at the participating universities. Additional feedback is welcomed.

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