

AN ALTERNATIVE MODEL FOR MATHEMATICS AND SCIENCE INITIAL TEACHER EDUCATION

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KEYWORDS: initial teacher education, mathematics education, science education

Background

While there has been substantial movement towards integrating the study of STEM disciplines in the United States (Becker & Park, 2011), the situation in Australia is such that these disciplines are still largely taught separately (Blackley & Howell, 2015). This abstract reports on the development of an innovative four-year undergraduate ITE degree for secondary teachers, the Bachelor of Education (Science and Mathematics) (BEDSM) developed as part of the IMSITE project. Students enrolled in the degree will simultaneously study a science major, mathematics minor and education units that have been designed to allow for teaching and learning with an integrated STEM approach.

Aims

The aim of the research was to assess the attractiveness of the BEDSM to science and mathematics teachers and career counsellors in secondary schools with a view to determining the potential for the program to attract future students.

Design and methods

Face-to-face interviews were conducted in March 2015 with 12 staff from secondary schools, comprising nine teachers or heads of department for science and/or mathematics and three school career counsellors. Each participant was provided with an overview of the BEDSM, and were asked for their views in relation to the approach being taken, how attractive the program might be to future ITE students and how likely they were to recommend the program. All interviews were digitally recorded and subsequently transcribed and coded to allow for the identification of common themes across the dataset.

Results

The interviewees identified two distinct market groups: namely school students who viewed teaching of science/mathematics as their preferred career option and people of mature age looking to change careers, but who lacked the formal academic qualifications to gain direct entry to a postgraduate teacher education program. Concerns were raised in two regards, firstly the extent to which graduates of the BEDSM would be sufficiently prepared in the science and mathematics content to be successful teachers and hence disadvantaged when compared with teachers who graduate with an undergraduate degree in these fields, and secondly that the program would be offered in distance mode only. Of particular interest was that only one participant identified the integrated nature of the program as an advantage, while two others indicated the requirement to study both mathematics and science was a disadvantage.

Conclusions

As a result of these preliminary interviews, developers of the course concluded that in order to attract students directly from secondary schools into the BEDSM course, an innovative marketing approach would be required that targeted two cohorts. Firstly, marketing the advantages of a direct career path to teaching and the shorter time to entry into the profession to secondary students. Secondly, marketing the advantages and rigorous nature of studying science and mathematics content and pedagogy, via an integrated ITE program, to teachers and career counsellors in secondary schools in order to gain their support for the program.

References

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Proceedings of the Australian Conference on Science and Mathematics Education, The University of Queensland, Sept 28th to 30th, 2016, page 52-53, ISBN Number 978-0-9871834-5-3.