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Investigative Primary Science: A Problem-based Learning Approach

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Abstract
This study reports on the success of using a problem-based learning approach (PBL) as a pedagogical mode of learning open inquiry science within a traditional four-year undergraduate elementary teacher education program. In 2010, a problem-based learning approach to teaching primary science replaced the traditional content driven syllabus. During the 13 week semester, a cohort of 150 elementary pre-service teachers embarked on a Design and Make project to solve an individually chosen real world problem. Over one week, the pre-service teachers used a problem based mode of learning in conjunction with an open scientific inquiry to showcase individual working models (prototypes) in a public science museum to schools, interested stakeholders and the general public. The PBL mode of teaching science was well suited to the recommended New South Wales Science and Technology K-6 Syllabus Design and Make learning process. The PBL course had a positive impact on the pre-service teachers’ motivation to teach science ideas within a real world context. This article reports on the PBL science program and offers recommendations to future instructors of undergraduate science education who may include PBL as a part of their science curriculum.

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