

A TOOL FOR SHIFTING FROM PRESCRIPTION TO INQUIRY IN A FORMAL HIGH SCHOOL EDUCATION PROGRAM

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KEYWORDS: Inquiry, IOL, Outreach, PER, Education

Background

The rationale for the project is to include inquiry, which is advocated in the mandatory NSW curricula and is recognised as an appropriate pedagogy for school science potentially impacting on approximately a quarter of the total number of students that sit the NSW HSC Physics examination who participate in the Kickstart Physics workshops each year.

Aim

The aim of this project is to examine the effect of including inquiry-based learning activities into the education outreach program run by the Sydney University School of Physics called Kickstart Physics.

Design and methods

This investigation will extend the inquiry process from Kickstart workshops hosted in the University teaching lab to the School classroom by using an educational tool which converts a prescriptive activity to an inquiry oriented learning activity. The inquiry tool is in the form of an online spreadsheet which can be completed by students using their own collected data and the combined data from all other participants in this particular investigation. The validated spreadsheet activity dresses a number of content and skills based learning objectives from the NSW HSC Physics syllabus. The evaluation includes analysis from students and teachers.

Results

The design of the outreach program is critical for eliciting elements of inquiry in comparison to learning sequential content with the normal worksheets and investigations. The results from the first experiment indicated that a shift towards inquiry oriented methodology across the workshop increased student engagement with the workshop materials and students reported an increase in mental effort while completing the workshop. Preliminary results from the second experiment will be presented at the conference.

Proceedings of the Australian Conference on Science and Mathematics Education, The University of Queensland, Sept 28th to 30th, 2016, page 59, ISBN Number 978-0-9871834-5-3.