Achievements

Title: Matching the background of demonstrators with those of their students: does it make a difference?

Lead institution: University of Technology Sydney
Partner institution: University of Cape Town
Final report completion: 2016

The impact of the challenges posed [by laboratory-based learning] justifies investment in the development of demonstrators' competencies, both at the individual and group level, to realise the potential of science teaching laboratories. (O'Toole 2015)

Figure 1: Students in UTS laboratory

Overview

Student and demonstrator experiences and perceptions of physics laboratory programs were explored at UTS and UCT from several perspectives, including those of students, demonstrators, subject convenors, and curriculum developers.

Findings that emerged included the importance of consistency in messages such as the philosophy of laboratory programs as communicated to students, demonstrators and subject convenors/coordinators, and; the relative discomfort with inquiry-oriented experiments felt by students and demonstrators.

Gains in student engagement and perceptions of the value of the laboratory occurred in Autumn 2015 after a laboratory program and its delivery was modified in response to data gathered through this project at UTS. As an example, in Autumn 2015, 87 % of students agreed that the experiments increased their understanding of physics compared to 59% in Spring 2014.

Outputs/deliverables

Presentations of project and findings at: a) Student Transitions Achievement Retention and Success conference, Melbourne, 2015 (STARS) http://unistars.org/docs/STARS_2015-Program.pdf , and; b) Australian Council of the Deans of Science Teaching and Learning Conference, Brisbane, 2015 http://www.acds-tlcc.edu.au/

Papers on project: to the European Journal of Physics (submitted 2015), the International Journal of Innovation in Science and Mathematics Education (submitted 2015). Conference paper, STARS, Melbourne, 2015 http://www.unistars.org/ papers/STARS2015/13F.pdf

Workshop: At STARS conference, Melbourne 2015:http://unistars.org/program/workshops/

Webpages: describing the background to project, its findings and acting as a repository for resources developed including surveys and interview questions
http://www.iolinscience.com.au/demonstrators-students/