

AN INVESTIGATION INTO STUDENTS' UNDERSTANDING OF THE SCIENTIFIC PROCESS AND THE NATURE OF SCIENCE, AND THE EFFECTS OF FIRST YEAR UNIVERSITY OF THESE CONCEPTIONS

Gabriel Nguyen, John O'Byrne, Manjula D. Sharma

Presenting Author: Gabriel Nguyen (g.nguyen@physics.usyd.edu.au)
School of Physics, University of Sydney, Sydney NSW 2006, Australia

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ABSTRACT

A strong understanding of the scientific process plays an important role in the development of scientific literacy. Along with understanding the nature of science, this knowledge is critical for meaningful participation in scientific issues facing the community. While there have been surveys of various populations overseas, there have been no major attempts to gauge the level of understanding of large groups of people with regards to the areas of scientific process and the nature of science in Australia. This is even more stark when considering university students, where few attempts have been made to survey the population regarding these conceptions. In part, this is because of extra restrictions placed upon the university student population, including time considerations.

We present a project building upon previous work in the research group developing a survey instrument focusing on the student understanding of aspects of the scientific process and the nature of science amongst first year Australian university students. The survey instrument adapted questions from the previous project and from other survey instruments implemented overseas to measure these aspects in the university student population. The instrument was given to particular student groups studying units presented by the School of Physics at the University of Sydney. The project also tracked the evolution of these conceptions within the students during the first semester of university in 2011. We present results regarding the effectiveness of the survey instrument at measuring student conceptions within the constraints of the university setting.

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