

USING LABORATORY EXPERIENCES TO INVESTIGATE STUDENT LEARNING TRENDS IN CHEMISTRY

Sam Priest^a, Simon M. Pyke^a, Natalie Williamson^a, John Willison^b

Presenting author: Sam Priest (samuel.priest@adelaide.edu.au)

^aSchool of Chemistry & Physics, University of Adelaide, Adelaide SA 5005, Australia

^bSchool of Education, University of Adelaide, Adelaide SA 5005, Australia

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ABSTRACT

Surveys commonly utilised as part of the Advancing Science by Enhancing Learning in the Laboratory (ASELL) project have been used to investigate the perceptions of first year undergraduate chemistry students during their laboratory sessions at the University of Adelaide. From 2011, data from these surveys has provided insights into many facets of the learning experience. Quality of experiments and laboratory courses in first year undergraduate chemistry has been evaluated from the student perspective, and the effects of any revisions to past experiments and the overall laboratory course structure have been identified. Trends have been observed in the overall perception of experiments, with relation to macro, sub-micro and symbolic representations of concepts. Prominent factors contributing to the overall learning experience have been investigated, and cases in which these factors contribute most and least prominently have been observed. Reasons for relatively poor perception of experiments often appear related to effects generated by difficulty thinking beyond the macro domain of representation. Additionally, visual appeal has been seen to be a strong source of interest in experiments. The degree to which particular facets of the laboratory experience contribute to the perceived overall learning experience appears to be variable.

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