Student Perceptions and Staff Misconceptions on Student Learning in the Laboratory: Data from the ASELL Project

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The Advancing Science by Enhancing Learning in the Laboratory (ASELL) project is a successful Australian initiative contributing to quality improvements in undergraduate (biology, chemistry, physics) laboratory curricula nationwide. The project has four goals:

1. to provide professional development of science academics by expanding their understanding of issues surrounding learning in the laboratory environment;
2. to build a community of practice of laboratory educators by providing mentoring, workshops and activity at conferences;
3. to build a shared database of educationally-validated experiments; and
4. to conduct research into learning and teaching in the laboratory.

The project is strongly student-centred, with student participation integral to all parts of the evaluation and peer review processes. Acceptance of an experiment into the ASELL database depends, in part, on the students’ evaluation of the learning experience it provides. Consequently, ASELL has student evaluations of more than 40 experiments covering a range of topics, levels, and institutions – all gathered with a single survey instrument. This seminar will report on the student perspective of the factors that are important determinants of student engagement in the laboratory. Such data can also provide valuable insight into the areas of weakness in individual practical exercises and in whole laboratory programs.

Recently, ASELL has entered into a partnership with the Australian Council of Deans of Science to evaluate the student experience across whole laboratory programs in chemistry, physics and biology. As part of this investigation, the Deans are being engaged to explore how we can build a sustainable mechanism to embed this cultural change as standard institutional practice. We have measured baseline data in 46 lab programs, in 15 universities, involving ~20,000 students in chemistry, physics and biology.

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