

# TRANSFORMING FIRST YEAR CHEMISTRY LABORATORY ASSESSMENT TO ENHANCE THE STUDENT EXPERIENCE

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**KEYWORDS:** Laboratory Preparation, Smart Worksheets, Tailored feedback

Chemistry teaching labs are highly valuable and rewarding but bring with them challenges including:

- Student anxiety within a new environment
- Low levels of student preparation and engagement
- Perceived deadline pressure
- Insufficient or delayed feedback

Addressing these issues requires creativity and innovation. In this session we will explore tailored e-learning solutions that we have introduced into first year chemistry laboratory teaching, in collaboration with Learning Science Ltd., which have reduced student anxiety in the lab and enhanced the student learning experience.

Students complete online pre-lab quizzes prior to each practical session that represent a blended-learning environment, including interactive simulations, allowing students to investigate new practical skills in a risk-free environment, and answer focused questions related to upcoming experiments. By completing Smart Worksheets, which break down multi-step calculations, students have greater understanding of complex analytical questions before attending the lab.

Online post-lab reporting, with a 24 hour submission deadline has replaced paper result sheets. Students use their own data to complete quizzes with a style consistent with the pre-lab quizzes. The range and flexibility of the question styles designed, provides an opportunity for students to reflect on their laboratory learning, to receive on-going detailed feedback and increases marking consistency.

Proceedings of the Australian Conference on Science and Mathematics Education, The University of Sydney and University of Technology Sydney, 2 - 4 October 2019, page 8, ISBN Number 978-0-9871834-8-4