

# Preparing First Year Physics students for Laboratory assessment

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Learning to communicate ideas, discuss findings in a physical context and critiquing a laboratory experiment are often the most challenging aspects to undertaking a physics subject, yet incredibly important skills to develop as scientific literate citizens and future researchers [1]. Furthermore, a great disparity in background experience coming into a science degree can make this essential task much more difficult for many students. John Hattie et al. [2] determined out of over 130 factors that may influence student achievement, sample work was one of the key actions educators can take to ensure students can quickly and effectively improve their competency. This and other forms of assessment transparency, including a rubric or a sample assessment piece, such as a mock-up lab report, prior to the assessment task, can provide students with clear learning outcomes and expectations [3]. We have developed this idea incorporating a clear marking rubric, mock-up lab reports of varying standards and an introductory quiz-based module to help students understand how the grading works and what the expectations of the lab assessment are. We present the student assessment documents and training module and discuss the results in student competency improvements and further bonus outcomes from introducing assessment transparency in this way.

- [1] Rice, John W., et al. *Tertiary science education in the 21st century*. Melbourne, Australia: Australian Council of Deans of Science, 2009.
- [2] Hattie, J. (2008). *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement* (1st ed.). Routledge.
- [3] Jackel, Brad, et al. "Assessment and Feedback in Higher Education: A Review of Literature for the Higher Education Academy." *Higher Education Academy* (2017).