



PTAS Project Report (for SMALL PROJECT GRANTS)

Project Title:

Pre-laboratory peer assessed skills in inorganic chemistry and PRELAB-e (Pre-laboratory e-resources to enable student preparation of practical work)

Principal Investigator : Dusan Uhrin and Stephen Moggach
School / Department : Chemistry

Team members : Michael Seery and Murray Low

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Grant recipients are expected to submit a brief report at the conclusion of their project which outlines briefly the following : nature of work completed; outcomes; benefits to student learning/student experience; dissemination activity (where relevant – actual and planned) and how the activity could inform future work or be transferred to other subject areas in the University. The brief report will be published on the IAD web pages.

Brief Report (maximum 500 words)

What did you do?

In this project we developed a series of resources for our undergraduate laboratory teaching, designed to assist students in their work preparing for laboratory learning. This involved the development of pre-laboratory videos to demonstrate techniques and approaches to laboratory work, as well as separate pre-laboratory videos explaining the fundamentals of the theory behind the lab. Work along these lines often conflates these two approaches, but there is evidence to suggest that they should be separated, so that students can focus separately on preparing experimental work or preparing for the theory underpinning the lab. These videos are made available to students via Learn. They are used as a discussion prompt at the beginning of labs so that peers can discuss the approach with each other and with the laboratory demonstrator before beginning the experiment. The core focus here was to facilitate intellectual engagement in the lab work and allow students to self-assess their own understanding informally as the lab proceeded.

What did you find out?

The videos were, unsurprisingly, very popular with students. Demographic information available via YouTube analytics shows that videos were viewed (by 60 students undertaking the experiments in Semester 1) about 390 times per video, with a higher proportion watching the experimental protocol (average 405) than theory (average 378). This result indicates that separating out the videos into different streams meant that while students still opted to watch both, they had choice in terms of which they watch as and when they needed it. Further analysis involved demonstrator interviews. In general, demonstrators reported that students had usually watched the videos in advance and that this was reflected in their responses to discussion points raised during the lab. We aim to explore reasons why students who did not prepare can be actioned to do so, given the importance of this work to their laboratory experience. Finally, the developments received significant praise in the various student forums such as Staff Student Liaison committee meetings.



How did you disseminate your findings?

Most of the work to date has focussed on consolidating the approach so that we can tease out exactly what aspects of preparation (theory vs experimental) students undertake and when they do so. We have disseminated the videos by making them publicly available on YouTube and will begin to incorporate them into a dedicated Media Hopper channel over Summer 2017. Developments in lab education have also been incorporated into the forthcoming School Plan.

What have been the benefits to student learning?

The main benefit to student learning has been providing the opportunity for students to prepare for laboratory work, and building on this in the lab by using the preparative work to engage the students in discussion about why they are undertaking a particular approach from both an experimental perspective and an underlying theory perspective.

How could these benefits be extended to other parts of the university?

This approach regarding preparative laboratory work can benefit any practical aspect of any subject.

Who can be contacted for further details?

Dusan Uhrin/Stephen Moggach/Michael Seery



Financial statement (please delete as appropriate):

Either

This project has utilised the funding awarded to it by the PTAS adjudication committee and the Principal Investigator or School Administrator appropriate can provide financial statements showing the funding usage as and when required by the UoE Development Trusts who may require it for auditing purposes.

Please send an electronic PDF copy of this report to:

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