

ACTION RESEARCH: THE EFFECTIVENESS OF QUICK & DIRTY PRE-CLASS VIDEOS FOR A FLIPPED CLASSROOM

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Problem

At Monash, PACE (Physics & Astronomy Collaborative-learning Environment) is both a first year teaching space and a new approach to teaching. PACE is a program involving a transition from traditional lecture-lab courses to integrated active-learning classes. The transition involves “flipping” the classroom. Classes in PACE are about students working on problems with help close at hand - the main instructor plus Teaching Associates (TAs). One of the challenges is to ensure students prepare their content knowledge outside, and prior, to class.

Plan

While we utilize parts of the textbook as a “curriculum”, lecturers generally deliver material in a different fashion and / or order. However, lecturers were relying on assigning textbook pre-readings (where it was difficult to check student compliance) mainly due to time constraints and the challenge of addressing all the other hurdles we faced in changing to a new mode of delivery. So I decided to create videos, along with short self-review quizzes, as a pre-class activity to investigate and demonstrate approaches we might all take in future years. The aim was to find a way to do this in the context of limited skills, resources and time so that other lecturers could replicate the approach. I also wanted to be able to demonstrate how we could easily monitor student engagement with these pre-class activities and hence assess the level of student engagement with these resources. The longer term plan is to create the videos such that they can be utilised by academics at other institutions – and we can use videos created by them. They could also provide support for school teachers. These ideas were put forward as part of an OLT grant application, which was unsuccessful, in conjunction with academics from several other universities. It is possible we may still go ahead with aspects of this plan.

Action

The videos were created using PowerPoint on a laptop in my office and hence were very low-tech – the only additional piece of equipment was a cheap headset, with built-in microphone, for improved sound. The videos were uploaded to our School’s YouTube Channel with a link posted on our LMS (Moodle). The quizzes were also created and posted on Moodle. So the videos and quizzes were relatively simple to create, utilising existing media with a built-in ability to gather data on student use.

Reflection

While I had created videos before in a different mode (with a video expert) and of a different type (pre-lab videos mainly aimed at generating student familiarity with the equipment) I still underestimated the time and skill required to create the pre-class videos. The first video took far longer to create than I had imagined. However, I rapidly improved and feel that the approach, with guidance, is something the other lecturers will easily adopt – they are keen to try it out.

The student data suggest that the videos were watched by a significant number of students but were too long. Indicating an average viewing time that is in line with other studies in this area. While, the number of students viewing the videos was reasonable it did not always occur prior to class. Work is needed to improve the way the subject matter is divided up, the length of the videos, and motivating more students to watch them prior to class. Also, due to time constraints, I only created self-review quizzes for the first two videos. The aim in the future is to ensure such self-review material is available for all the videos.

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