

A good science foundation is an important element to succeed in university science courses. Recently, the development of introductory chemistry courses, which play an important role in both Faculty of Science and general education, has met new challenges because of the implementation of the 4-year curriculum and the HKDSE framework. Some of our first-year students may have never chosen chemistry as a full/half subject in their HKDSE, and this vastly different secondary school education makes it an exceedingly non-trivial task for constructing foundation courses that effectively prepare our students for their subsequent classes in both the Chemistry Department and other Departments. A major goal of our videos was to lessen the gap between different students so that the learning becomes more efficient for everyone.

A major motivation to enhance the original 8 online interactive eLearning videos and to add 5 more videos for CHEM 1070 was due to the good feedbacks for the original videos in last year. Throughout this project, both ELITE and KEEP provided invaluable advice and help for recording and hosting our videos. The ELITE recording studio was instrumental for the production of the videos. On top of the existing 8 video lectures, we made five extra videos in total for some more important topics in the introductory chemistry course. Furthermore, the original 8 videos have now been enhanced to contain different questions, which are hosted on the ELITE platform. In some of the new slides, we utilized the computer graphics that were generated from the ITSC paid service. These beautifully made graphics will definitely be reused in the future.

To understand how the students used our videos, we kept track of the number of view for each video and also kept a record of the student IDs. Consistent with our expectation, the number of views was higher for what we perceived to be more difficult topics. The most popular video scored over 210 views, which is a respectable number considering that we did not require the students to use the videos. The most important statistic to evaluate the effectiveness of the videos is to compare the average scores between students with and without access to the videos. What we found was that the students who watched the videos scored about 4% higher than those without access in the midterm and final exams, respectively. This statistic is a very encouraging figure that hints at the usefulness of the eLearning materials. The class scored a 5.03 for "Course Effectiveness" in the CTE. The video access was partially, if not wholly, responsible for the success.

We plan to make even more chemistry video lectures in the future and extend this format to other more advanced classes. Furthermore, we have been collaborating with colleagues in the Math Department to try to utilize their WebWork platform that allows more elaborate questions including chemical structures. This MMCD fund has helped jumpstart this ongoing effort. We would like to use the opportunity here to express our gratitude.