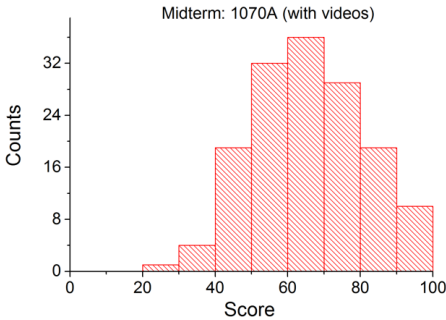


The motivation to produce these online interactive eLearning video for CHEM 1070 was to regularize the diverse backgrounds of first-year CUHK science students. A good science foundation is one of the most important elements to succeed in university science courses. However, the development of introductory chemistry courses, which play an important role in both Faculty of Science and general education, has met new challenges because of the recent 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.

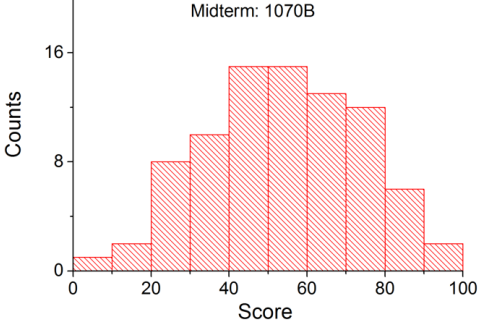
Throughout this project, both ELITE and KEEP provided invaluable advice and help for recording and hosting our videos. The ELITE recording studio was instrumental for the production of the videos. The videos could just be put on Youtube, but with the platform provided by KEEP, we were able to organize our videos into sections and subsections for systematic browsing and to ask interactive questions after the videos. We made eight videos in total for some (but not all) of the most important topics in the introductory chemistry course. One of the emphases in our videos was that they would be short, easy-to-digest, and interactive. I would say that the videos were definitely short and easy-to-digest, but I wish we would have more time and resources to make them more interactive by including more variety of questions and graphics.

To understand how the students used our videos, we kept track of the number of view for each video. Consistent with our expectation, the number of views was higher for what we perceived to be more difficult topics. The most popular video scored 123 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. While there were small differences between two sections (no two people are ever the same), we had a very good experimental control because we had two different CHEM 1070 sections with the same exams taught by two teachers with a very similar background. What we found was that the students with access to the videos scored about 10% and 8% 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 section with video access scored a 5.20 "Course Effectiveness" in the CTE, whereas the other section scored a 4.19. The video access was partially, if not wholly, responsible for this large difference. The exam score distributions are attached below for reference.

Midterm distributions

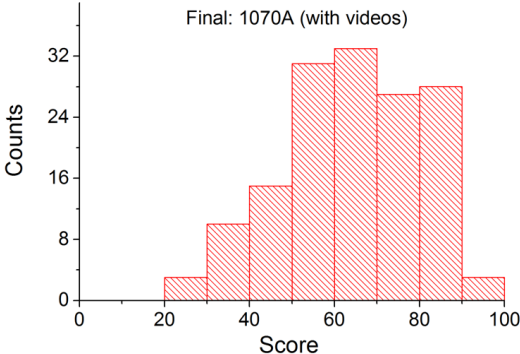


#students: 150
 Mean: 65.3
 Median: 65
 Std dev: 15.1

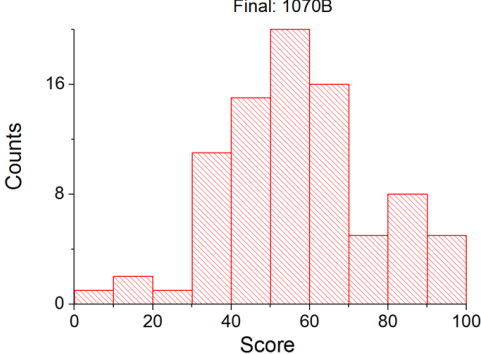


#students: 84
 Mean: 54.3
 Median: 55
 Std dev: 20

Final distributions



#students: 150
 Mean: 64.1
 Median: 65.3
 Std dev: 16.3



#students: 84
 Mean: 56.6
 Median: 55
 Std dev: 19