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City University of Hong Kong

Developing short educational videos and a student video project to enhance physical and online teaching

Project Number: 6000766

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Grant Type: TDG

Abstract:

Students nowadays are immersed in a digital society where they can find much information on the internet. Learning mode has also shifted significantly from classrooms to the virtual world. To capture students' attention and enhance learning, one will need to develop a multimedia approach to teaching science and engineering. Fun education videos that can be shown during classes can be assets to teaching to make the lectures more lively, and also to allow the students to relate the course contents to the real world. Custom videos can ensure alignment with course contents, and guided questions will be added for students to complete after viewing the videos as part of learning activities. In addition, these videos can be posted online so they can reach out to a larger audience outside City University, promoting the university as well. The videos have to be scripted and short (around 5 to 10 mins), like those from some popular KOLs on YouTube channel to cater towards the short attention span of students.

In this project, we will extend scientific demonstrations and contents from the courses on energy engineering that I have taught (SEE1003/SEE3102/SEE4120/SEE6101/SEE6102/ SEE8111/SEE8112) into education videos to be used during the lectures and also outside classrooms. The videos can be used for both physical and online teaching. There are indeed many education videos online by other teachers. However, in many of them the professors will be reciting the lecture notes, or that they do not convey the exact messages that I have in mind to the students. So, it will be more suitable to develop my own videos that will better fit with my course contents and also their intended learning outcomes. Moreover, given CityU may enter a hybrid lecture mode in the upcoming semesters. These short videos can enhance student learning and serve as a platform for learning activities to the aforementioned classes. In addition, what is more simulating to the students than seeing their own professor showing up in videos during a class?

Furthermore, we will design one student project in energy engineering where the students will be asked to film their own work in the form of a video for submission. So, through the process, the students can gain hands-on experience on a scientific topic about energy around them, and also have fun at the same time. The student learning activities of the video projects in conjunction to OBTL are:

- explore physical phenomena in daily life,
- apply knowledge from class,

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- design and plan script to explain the phenomena,
- communicate concepts through video taking and organize story through video editing.

The best student videos will be disseminated in the course library and on YouTube.