

In this research, the cost-effectiveness of various types of micro-modules, including recorded lecture, Powtoon video and discussion, was investigated. Studio recorded lecture is sub-divided into PowerPoint and lecture with the presenter's video image and PowerPoint. From both the users' and developers' perspectives, (i) the respective impacts made to students' learning by each type of micro-modules, (ii) the corresponding production cost and procedure of each type of micro-modules and (iii) students' e-Learning readiness in general, were studied.

i. The impacts made to students learning by each type of micro-modules (Appendix 1)

Students' engagement and learning outcomes attainment could be influenced by the design of online materials. To investigate students' feedbacks towards the different types of UGFN1000 micro-modules, 16 students, who finished the course UGFN1000, were invited to participate in focus group interviews. They were asked to watch the four types of videos, fill in a survey and engage in a subsequent discussion.

Studio recorded lectures, Powtoon video and Student discussion

Survey result suggests that focus group interviewees preferred Powtoon video the most and the Student discussion the least. In the further discussion, interviewees proposed the advantages of using different presentation formats. Powtoon video, according to their comments, gave a clear and structured outline to the course issues and the presentation was vivid and attractive. Meanwhile, Studio recorded lectures are able to deliver richer information, which is more possibly used in their written assignments, than the other two video types. Student discussion, though not well structured as it greatly depended on students' simultaneous responses during videotaping, gave students the opportunity to know other perspectives regarding certain course issues.

The presence and absence of presenters' video images in the studio recoded lectures

Within the sub-category of Studio recorded lecture, interviewees shared different ideas. 7 interviewees preferred the presence of presenters' video image, claiming that it gave them a sense of interaction or a feeling of "being in a real-time lecture". 6 interviewees however preferred Voiceover PowerPoint, which they found themselves being less distracted from reading the PowerPoint. 3 interviewees had no preferences.

ii. Developers' brief summary of the costs and procedures to produce different types of micro-modules (Appendix 2)

Developers briefly introduced their working procedures in producing the videos with the approximate expense and working time. The numbers were, for the sake of comparison, converted into monetary cost and averaged to give an estimate of the cost for producing one set of videos. In short, one set of Studio recorded lecture costs around HK\$4260; that of Powtoon video costs around HK\$21750; that of Student discussion costs around HK\$2490.

iii. The e-Learning readiness of students (Appendix 3)

From the survey, students generally were adapted to use computer for their learning, but they did not see it as a complete substitute of teachers' instruction. They inclined to be positive of using computer, in terms of exchanging ideas, receiving course materials and watching video clips for study. The focus group interviewees were experienced in using communication technologies, such as Skype and WhatsApp, and online working platforms, such as Google Documents and Blackboard. Some may even prefer communicating with other classmates by online media instead of a face-to-face meeting or a phone call. However, they seldom use such technologies to communicate with the course teachers. Although students raised the advantages of video learning, for example pace control and flexible schedules, they felt that the real-time interaction could not be fully replaced.