

THE CHINESE UNIVERSITY OF HONG KONG

Micro-Module Courseware Development Grant

Scheme 1: Basic Scheme

Final Report (2017-18)

Report due 31 October 2018

Please return by email to The Ad hoc Committee on Planning of eLearning Infrastructure
mmcd@cuhk.edu.hk

PART I

Project title:

Flipped teaching of real estate concepts: The use of demonstration and animation videos to enhance students' understanding through visual learning

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Department / Unit: School of Hotel and Tourism Management

Project duration: From December 2017 to October 2018

Date report submitted: 31 October 2018

1. Project objectives

The project aims to develop a number of micro-modules to facilitate flipped teaching of the real estate concepts and towards the end to encourage student-centered learning. The project is on track to meet its objectives. The objective of the project remains unchanged, that is to produce demonstration and animation videos. The combination of 3 demonstration videos and 4 animation videos has been fine-tuned to 2 demonstration videos and 7 animation videos to fit the students' needs.

2. Process, outcomes or deliverables

Seven videos (3 demonstration videos and 4 animation videos) were originally proposed. However, to fit the students' needs, demonstration videos were reduced to two, while animation videos were increased to seven. The expense saved from reducing one demonstration video was used to produce three other animation videos. Therefore, towards the end, 9 micro modules were produced, consisting of 2 demonstration videos and 7 animation videos.

| Micro-Module # | Video Content & Duration | Presentation Style | Course Code | Description |
|----------------|--|--------------------|---|--|
| 1 | Residual Theory of Land Value (05:34) | Animation | HTMG3030A HTMG3030B HTMG5017 | These animation videos show the explanation and examples through animation to enhance students' understanding on different real estate theories. |
| 2 | Economic Base and Export Base Theory (06:13) | Animation | HTMG3030A HTMG3030B | |
| 3 | Export Multiplier (04:34) | Animation | HTMG3030A | |
| 4 | Pricing of Real Estate Assets (04:59) | Animation | HTMG3030A HTMG5017 | |
| 5 | Agglomeration (03:38) | Animation | HTMG3030A HTMG5017 | |
| 6 | Monocentric City Model (07:58) | Animation | HTMG3030A <i>(expected to be disseminated in Nov 2018)</i> | |
| 7 | From Property Rent to Property Value: The Effect of Growth and Uncertainty (06:00) | Animation | HTMG3030A <i>(expected to be disseminated in Nov 2018)</i> | |
| 8 | Bid-Rent Theory (04:52) | Demonstration | HTMG3030A HTMG5017 | These animation videos show the real world application of the real estate concepts. |
| 9 | Neighborhood Succession Theory (03:47) | Demonstration | HTMG3030A <i>(expected to be disseminated in Nov 2018)</i> | |

Although the micro-modules are primarily developed for the major required courses “Hospitality Real Estate” (HTMG3030A and HTMG3030B), four micro-modules (1, 4, 5 and 8) were also used in HTMG5017 “Real Estate Valuation” since some topics are related. Moreover, most of these micro-modules can be implemented in the newly proposed course, HTMG5024 “Real Estate Economics”, which will be offered in academic year 2019-2020.

Despite the adjustment of number of demonstration and animation videos, the nature of the deliverables has not been changed. All videos developed have the same purposes, for flipped teaching and for enhancing students’ understanding through visual learning. Due to an increase in the number of micro-modules produced (from 7 to 9), the video production originally planned to be completed in July 2018 was adjusted to October 2018.

The duration of most micro-modules is between 3-6 minutes. Only one micro-module, Monocentric City Model, has the length of approximately 8 minutes since the explanation and examples provided in the video are closely related and hardly possible to divide it into two micro-modules.

Overall, the project was completed satisfactorily.

3. Evaluation Plan

All micro-modules produced are predominantly used for the major required course “Hospitality Real Estate” (HTMG3030A and HTMG3030B) as flipped teaching. The students were required to watch the videos before coming to the class. Online quizzes (using uReply or Kahoot) were adopted for selected micro-modules to examine the students’ understanding on the concept demonstrated in the videos.

The evaluation plan was slightly altered. In the original plan, the four evaluation methods would be used, including feedback survey, quiz, focus group and teacher’s reflection. Due to the difficulty to gather a number of students in a group, the focus group has been changed to a short individual interview with a few students. Besides, the use of Panopto to disseminate the videos in fact facilitated to monitor the effectiveness of the flipped teaching. Therefore, the latest evaluation plan consisted of Panopto, feedback survey, online quiz, individual interview and teacher’s reflection.

(1) *Panopto*

Two micro-modules were utilized as a trial run at HTMG3030B (Spring Term of 2017-2018). A total of 27 students enrolled this course. Most students watched the videos before the class. Interestingly, they watched the videos again before the examination. The statistics derived from Panopto documenting the number of the students viewing the videos is showing in Table 1.

Table 1. Number of students of HTMG3030B viewing the videos

| Week | Micro-module # | Viewed by # Students | Any Quiz? |
|---------------|-----------------------|-----------------------------|------------------|
| Week 5 | Micro-module 2 | 28 | Yes |
| Week 6 | Micro-module 1 | 24 | Yes |

Almost all micro-modules were used at HTMG3030A (Fall Term of 2018-2019) with the number of students of 40. The other three micro-modules are expected to be disseminated to the students in November 2018. The statistics of students of HTMG3030B viewing the videos is shown in Table 2.

Table 2. Number of students of HTMG3030B viewing the videos

| Week | Micro-module # | Viewed by # Students | Any Quiz? |
|--------|----------------|----------------------|-----------|
| Week 2 | Micro-module 4 | 24 | No |
| Week 5 | Micro-module 5 | 15 | No |
| Week 6 | Micro-module 1 | 18 | Yes |
| Week 6 | Micro-module 3 | 19 | Yes |
| Week 6 | Micro-module 2 | 25 | Yes |
| Week 7 | Micro-module 8 | 26 | Yes |

The results of Table 1 and Table 2 shows that the students from HTMG3030A (Fall Term of 2018-2019) were less motivated to watch the videos than those of HTMG3030B (Spring Term of 2017-2018), particularly when the quiz was not given during the class time. However, as Fall Term of 2018-2019 has not been ended, it is too early to conclude the students' interest in the micro-modules developed. It is believed that the students are likely to watch the videos again for their revision before examination.

(2) *Feedback survey*

The feedback survey was undertaken to collect the student feedback on the effectiveness of student learning. It was conducted in Week 9 for HTMG3030B (Spring Term of 2017-2018). For the purpose of this final report, the survey for HTMG 3030A Fall Term of 2018-2019) was conducted in Week 7.

Table 3. Feedback survey of HTMG3030B (Spring Term 2017--2018)

| No. | Survey Questions | Strongly Disagree (%) | Disagree (%) | Neither Agree Nor Disagree (%) | Agree (%) | Strongly Agree (%) |
|-----|---|-----------------------|--------------|--------------------------------|-----------|--------------------|
| 1. | I enjoyed watching the videos | 0.00 | 5.56 | 27.78 | 55.56 | 11.11 |
| 2. | The videos enhance my understanding about the theory of real estate. | 0.00 | 0.00 | 11.11 | 72.22 | 16.67 |
| 3. | I recommend the use of the videos as flipped teaching | 0.00 | 0.00 | 16.67 | 61.11 | 22.22 |
| 4. | I prefer watching the videos before the class. In the class, the time is better allocated for discussion of theory. | 5.56 | 11.11 | 16.67 | 61.11 | 5.56 |
| 5. | I would like to have more videos in the future to facilitate my learning of real estate theory. | 0.00 | 11.11 | 22.22 | 50.00 | 16.67 |

Table 4. Feedback survey of HTMG3030A (Fall Term 2018-2019)

| No. | Survey Questions | Strongly Disagree (%) | Disagree (%) | Neither Agree Nor Disagree (%) | Agree (%) | Strongly Agree (%) |
|-----|---|-----------------------|--------------|--------------------------------|-----------|--------------------|
| 1. | I enjoyed watching the videos | 3.45 | 3.45 | 17.24 | 62.07 | 13.79 |
| 2. | The videos enhance my understanding about the theory of real estate. | 0.00 | 0.00 | 0.00 | 79.31 | 20.69 |
| 3. | I recommend the use of the videos as flipped teaching | 0.00 | 0.00 | 7.14 | 71.43 | 21.43 |
| 4. | I prefer watching the videos before the class. In the class, the time is better allocated for discussion of theory. | 0.00 | 10.71 | 28.57 | 35.71 | 25.00 |
| 5. | I would like to have more videos in the future to facilitate my learning of real estate theory. | 0.00 | 3.57 | 17.86 | 60.71 | 17.86 |

The survey results show that the majority of the students agreed that videos helped to enhance their understanding on real estate concepts. They also recommended the use of videos as flipped teaching.

(3) Quiz

Online quizzes were conducted when the class was started to examine the students' understanding of the concept demonstrated in the videos. Two online quizzes were conducted for each HTMG3030A and HTMG3030B. The majority of the students were able to answer the questions of the quizzes correctly.

(4) Individual interview

A short informal interview of randomly selected students was conducted after the semester was ended (*only applicable to HTMG3030B*). The interview for HTMG3030A has not been carried out as the semester is yet to end. The feedback from the students about the adoption of videos as flipped teaching was very positive. They are summarized as below.

- *“The videos helped me to remember the real estate concepts. Until now, I still remember the cartoon characters in the videos explaining the concepts”*
- *“I like watching the videos. I could pause and rewind it anytime.”*
- *“I watched the videos before the class and I watched the videos again before the exam to refresh my memory.”*
- *“The quizzes at the beginning of the class were good to recap the video watched before the class.”*

(5) *Teacher's reflection*

Developing micro-modules is a meaningful project. The videos developed through this project facilitate to turn the abstract concepts into concrete understanding. The students are able to remember the concepts longer by means of visual learning.

Since the videos are used as flipped teaching, the time used to explain the concept in the class can be shortened and be used for class discussion to encourage student-centered learning. Besides, the students can learn the concepts based on their own pace as the videos can be paused and rewind. The videos also facilitate the students to review the topics before examination.

The micro-modules are an effective way to enhance students' understanding on difficult real estate concept. Moreover, it also helps to boost students' interest in real estate subjects.

All those positive feedback indicates that my objectives have been achieved.

4. Dissemination, diffusion and impact

The micro-modules developed were only disseminated to the students enrolled at Hospitality Real Estate (HTMG3030A and HTMG3030B) via Panopto at Blackboard. The videos will not be uploaded at YouTube as some materials in the videos contain copyright materials that the suppliers do not permit for public view.

As the theories of real estate in the videos are closely related to urban and real estate economics, it can be adopted for courses such as HTMG5024 Real Estate Economics and HTMG5017 Real Estate Valuation in which the microeconomic concepts to certain extent are discussed. Students taking the real estate courses will be benefited from these micro-modules as the videos enable the visual learning and flipped teaching. These micro-modules can also be used for the courses in other units/departments for the topic related to urban economics and real estate economics.

Besides, the idea of developing the micro-modules to teach real estate concepts as a flipped teaching will be disseminated in CUHK Teaching and Learning Expo. This project is expected to be presented for a poster presentation in CUHK Teaching and Learning Expo 2018.

PART II

Financial data

Funds available:

| | |
|--|-----------|
| Funds awarded from MMCDG | \$ 99,700 |
| Funds secured from other sources (please specify <u> N/A </u>) | \$ - |

Total: \$ 99,700

Expenditure:

| Item | Budget as per application (HK\$) | Expenditure (HK\$) | Balance (HK\$) |
|--|-------------------------------------|-----------------------|-------------------|
| Demonstration videos | 74,700 | 48,060 | 26,640 |
| Animation videos | 25,000 | 43,750 | (18,750) |
| Purchase of digital copy of image of old Nathan Road | - | 1,600 | (1,600) |
| Student helper for voice-over recording | - | 385 | (385) |
| | | | |
| Total: | 99,700 | 93,795 | 5,905 |

PART III

Lessons learnt from the project

I will definitely continue incorporating more video in explaining the real estate concepts in the future. By utilizing videos as a flipped teaching, the topics explained in the class can be shortened, allowing more time for class discussion. During the discussion, it helps to recap the content shown in the videos and refresh students' memories. Videos facilitate visualization, turning abstract real estate concepts into concrete understanding, and help to engage students' memory. A video combined with flipped teaching and quiz is in fact an effective way to learn a real estate concept.

Developing videos were in fact very time-consuming. Various preparations were needed, such as script writing, story board creation, filming and/or animation creation, etc. I spent many weekends on the story and script writing, but it was worthwhile. Besides, the most difficult part of the project was the video production since I did not have the expertise. Fortunately, with the assistance from Centre for eLearning Innovation and Technology (ELITE) of CUHK, the storyboard, filming and animation creation were taken care by them. Accordingly, I did not need to spend time to learn and to create the videos.

CUHK has provided a lot of support on these micro-modules. Without MMCD grant, I would never think about having videos as flipped teaching and visual learning as it costs time and money to create these videos. ELITE of CUHK is definitely a good partner to develop micro-modules as the production fees are lower than the private sector. I will suggest CUHK continue to provide MMCD grant, as well as having ELITE, to support CUHK's teachers in enhancing teaching and learning environment in CUHK.

PART IV

Information for public access

Summary information and brief write-ups of individual projects will be uploaded to a publicly accessible CUHK MMCDG website. Please extract from Part I the relevant information to facilitate the compilation of the publicly accessible website and reports.

1. Keywords

Please provide five keywords (in the order of most relevant to your project to least relevant) to describe your micro-modules/pedagogies adopted.

- (Most relevant) Keyword 1: Real estate concepts
 Keyword 2: Flipped teaching
 Keyword 3: Videos
 Keyword 4: Visual learning
- (Least relevant) Keyword 5: Student-centered learning

2. Summary

Please provide information, if any, in the following tables, and provide the details in Part I.

| Table 1: Publicly accessible online resources (if any) |
|---|
| (a) Project website: N/A |
| (b) Webpage(s): N/A |
| (c) Tools / Services: N/A |
| (d) Pedagogical Uses: N/A |
| (c) Others (please specify): N/A |

| Table 2: Resources accessible to a target group of students (if any) |
|--|
| <i>If resources (e.g. software) have been developed for a target group of students (e.g. in a course, in a department) to gain access through specific platforms (e.g. Blackboard,</i> |

facebook), please specify.

| <u>Course Code/ Target Students</u> | <u>Term & Year of offering</u> | <u>Approximate No. of students</u> | <u>Platform</u> |
|---|--|--|-----------------|
| HTMG3030B | 2 nd term 2017 | 27 | Blackboard |
| HTMG3030A | 1 st term 2018 | 40 | Blackboard |
| HTMG5017 | 1 st Term 2018 | 58 | Blackboard |

| Table 3: Presentation (if any) | |
|---|---|
| <i>Please classify each of the (oral/poster) presentations into one and only one of the following categories</i> | Number |
| (a) In workshop/retreat within your unit (e.g. department, faculty) | N/A |
| (b) In workshop/retreat organized for CUHK teachers (e.g. CLEAR workshop, workshop organized by other CUHK units) | N/A |
| (c) In CUHK ExPo jointly organized by CLEAR and ITSC | 1 Poster Presentation (expected: 7 Dec 2018) |
| (d) In any other event held in HK (e.g. UGC symposium, talks delivered to units of other institutions) | N/A |
| (e) In international conference | N/A |
| (f) Others (please specify) | N/A |

| Table 4: Publication (if any) | |
|--|---------------|
| <i>Please classify each piece of publication into one and only one of the following categories</i> | Number |
| (a) Project CD/DVD | N/A |
| (b) Project leaflet | N/A |
| (c) Project booklet | N/A |
| (d) A section/chapter in a booklet/ book distributed to a limited group of audience | N/A |
| (e) Conference proceeding | N/A |
| (f) A chapter in a book accessible internationally | N/A |
| (g) A paper in a referred journal | N/A |
| (h) Others (please specify) | N/A |

3. A one-page brief write up

Please provide a one-page brief write-up of no more than 500 words and a short video.

The project aims to develop a number of micro-modules to facilitate flipped teaching of real estate concepts and towards the end to encourage student-centered learning. The theories of real estate are relatively abstract and therefore the students often find it difficult to understand. In the traditional classroom teaching, the instructor spends about 20-30 minutes to explain the concepts by providing different examples. Despite the examples being provided and the time spent, the learning outcomes are not very ideal. A number of students still find the concepts difficult to comprehend. They are not able to remember the concepts soon after the class is ended. Besides, explaining the concepts with examples is very time-consuming, leaving limited time for class discussion, deterring student-centered learning.

Nine micro-modules were developed, consisting of seven animation and two demonstration videos. The former explains the concepts that may not be observable in the real world, but can be shown through animation images. The latter explains the real estate concepts by showing its application in the real city like Hong Kong. These videos encourage visual learning, facilitating the students to visualize the abstract concepts and ultimately engage their memory.

The length of most micro-modules is in the range of three to six minutes to effectively capture student's attention. Only one micro-module, Monocentric City Model, has approximately eight minutes duration as it is not viable to separate the related explanation and examples into two videos.

As a flipped teaching, the students were required to watch the videos, uploaded via Panopto at Blackboard, before the class. In the class, the concepts were slightly explained to refresh their memory before the discussion. This allowed more time for class discussion,

Flipped teaching is still a challenging concept. A few students remained uninterested in flipped teaching. Some of them watched the videos before the class starts; others did not even view the video. Accordingly, quizzes for the selected topics were adopted. When the students were informed about the quiz, they would spend some time viewing the video. Quiz can be considered as a good means to encourage students watching the videos.

An interesting observation is that, although it was difficult to encourage students watching videos before the class, they watched the videos again before final examination. A number of students commented that the videos helped them to recap their memory and could be used as revision materials. Some students liked the videos as they were able to pause and rewind it anytime. The videos could help to adjust the learning pace of the students.

Overall, these videos facilitate to achieve my pedagogical goals.