

THE CHINESE UNIVERSITY OF HONG KONG

Micro-Module Courseware Development Grant

Scheme 1: Basic Scheme

Final Report (2016-17)

Report due 30 April 2018

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

PART I

Project title: Understanding Pearl River Delta through Interactive Micro-Modules

Principal supervisor: Dr. Lee Wai Ying Joanna and Prof. Xu Jiang

Co-supervisor(s)

Department / Unit: Department of Geography and Resource Management

Project duration: From May 2017 to August 2018

Date report submitted: 30 April 2018

1. Project objectives

Is the project on track to meet its objectives? Have the objectives been changed as a result of the experience of working on your MMCDG project?

This project develops seven micro-modules for flipped classroom teaching for GRMD1301/UGEC1120 “Hong Kong and the Pearl River Delta (PRD)” and GRMD3305 “Transport Geography”. The main objective is to facilitate students’ self-learning of key concepts such as Greater Pearl River Delta, migration model, air freedom and regional governance before unraveling the development process of the PRD region. The characters in the micro-modules guide students through the learning process in an interactive learning environment.

Our micro-modules have been uploaded to website for students’ self-learning of geographical concepts before class. This paves the way for subsequent discussion in lectures. In sum, this project has achieved the objectives as planned. There is no change in the project objectives.

2. Process, outcomes or deliverables

Please specify the number of micro modules produced, and the course(s) (with course codes and titles) that have used the micro modules in Part IV, and provide more detailed descriptions here. Must specify

duration of each micro-modules (in terms of students online contact hours), total duration time of all deliverables and style. (With reference to the “Summary of video presentation styles” developed by CLEAR)

Has the nature of the deliverables been changed?

Have you adjusted your timeline?

Overall, was the project completed satisfactorily?

In our proposal, five micro-modules will be produced. As there are many important concepts to be presented in the last module, it is decided to change Module 5 into three separate micro modules so that those abstract concepts beyond facts and data can be discussed in details. Therefore, a total of 7 micro modules have been produced (compared with 5 micro modules in the original proposal).

Contents

Module 1 introduces three geographical concepts of the PRD, Greater PRD and Pan-PRD and their constituent jurisdictions. Modules 2 to 4 take the form of animated trips to nine PRD cities (Guangzhou-Foshan-Zhaoqing circle in Module 2; Zhuhai-Zhongshan-Jiangmen circle in Module 3 and Shenzhen-Dongguan-Huizhou circle in Module 4) which equip students with fundamental knowledge on the differences between the nine PRD cities in geographical, socio-economic, political and cultural terms. The first four modules forms a solid foundation to appreciate the regional backdrop of Hong Kong’s development and its competition and cooperation with the PRD. Modules 5 to 7 covers important concepts that are relevant to the study of the PRD region. Details of the modules are shown in the following table:

Micro Modules	Contents	Duration
1. PRD, GPRD and PPRD as geographical units	<p>Understand the geographical concept of economic region and differentiate PRD from GPRD and PPRD. The contents include:</p> <ul style="list-style-type: none"> • Geographical location of PRD • Geographical concepts of PRD, GPRD and PPRD: administration, industrialization and urbanization • Economic model of “Front shop back factory” • Industrial cluster • Regional cooperation <p>A matching game (Part I: Match cities/provinces with the concept of PRD/GPRD/PPRD. Part II Match cities and provinces on a map) is included at the end of the micro module to test students’ understanding on the three concepts.</p>	20 mins
2. PRD cities: Guangzhou – Foshan - Zhaoqing economic circle	<p>Understand the three PRD cities in geographical, socio-economic and political terms. The contents include:</p> <ul style="list-style-type: none"> • Strengths and weaknesses of GFZ economic circle • Geographical location, GDP, industry, positioning, trade and investment of each city • Compare and contrast the development of these cities 	15 mins
3. PRD cities: Zhuhai -Zhongshan -Jiangmen economic circle	<p>Understand the three PRD cities in geographical, socio-economic and political terms. The contents include:</p> <ul style="list-style-type: none"> • Strengths and weaknesses of ZZJ economic circle • Geographical location, GDP, industry, positioning, trade and investment of each city • Compare and contrast the development of these cities 	15 mins

4. PRD cities: Shenzhen – Dongguan -Huizhou economic circle	Understand the three PRD cities in geographical, socio-economic and political terms. The contents include: <ul style="list-style-type: none"> • Strengths and weaknesses of SDH economic circle • Geographical location, GDP, industry, positioning, trade and investment of each city • Compare and contrast the development of these cities 	15 mins
5. Migration	<ul style="list-style-type: none"> • This module provides an overview of the theories/concepts which have been used to explain why people move from one place to another. Three levels of theories/concepts are introduced, namely micro-level, meso-level, and macro-level. This enables students to form an integrated understanding of the mechanisms behind migration. Because theories/concepts are explained in different components, students can learn the knowledge at their own pace. An interactive test is included at the end of this micro-module to guide the learning process. 	20 mins
6. Air freedom	<ul style="list-style-type: none"> • This module introduces nine different degrees of air freedom, which are a set of commercial aviation rights granting a country's airlines the privilege to enter and land in another country's airspace. The content for each degree of freedom contains basic concept and real examples. An interactive test is included at the end of this micro-module to guide the learning process. 	20 mins
7. Intergovernmental cooperation	<ul style="list-style-type: none"> • This module introduces students the three models of intergovernmental cooperation, including two extreme models (political consolidation approach and market public choice model) and hybrid model. The first draft of this module is completed, and is now under revision. It will be introduced for GRMD 1301 / UGEC 1120 (Hong Kong and the Pearl River Delta) in 2018-19. 	20 mins

Style, format and classroom teaching

All the modules are created with the Storyline software. It includes visual graphics, animation presentation, narration and interactive games. These modules integrate into our teaching schedule (GRMD 1301 / UGEC 1120 Hong Kong and the Pearl River Delta) in term 2 of 2017-18 so as to enhance students' learning experiences. Module 1 was distributed to students in Week 4 which includes a matching game to test their knowledge about the geographical concepts of PRD, GPRD and PPRD. Students were asked to match the geographical location and name of the cities/provinces on a map. Modules 2-4 were distributed to the students in Week 4 and 5. Students had to self-learn the characteristics and development of the economic circles which serve as a basis for class discussion in Week 6.

With the introduction of Module 5, the flipped classroom teaching was experimented with for the lecture on migration. Students were asked to watch the module, understand key theories/concepts, while engaging in empirical discussion in the classroom with the guidance of the PI. The classroom

contact hour was reduced by 20 minutes for this lecture. If added by the 20-minute micro-module, the total contact hour remained unchanged.

Module 6 was used for one lecture (air transport) of GRMD3305 Transport Geography in term 2 of 2017-18. Students were requested to watch the module before coming to the classroom. The PI focused on application during the lecture. With the introduction of this new arrangement for flipped classroom teaching, the lecture duration on air transport was reduced by 20 minute, while the total contact hour remained unchanged (both classroom teaching and online lecture).

In sum, the project was conducted and completed satisfactorily.

3. Evaluation Plan

Have you altered your evaluation plans?

What monitoring data did you collect?

Does your evaluation indicate that you have achieved your objectives?

As planned, a student survey was conducted in Week 14 to collect feedbacks on the following aspects:

- Satisfaction of the micro-modules as an eLearning tool
- Effectiveness of the micro-modules in enhancing learning
- Usefulness of the micro-modules in flipped classroom teaching

We collected a total of 43 questionnaires from GRMD and UGEC students for GRMD1301 / UGEC1120. The feedback was positive. As shown in the questionnaire, most of the students described their e-learning experiences as “interesting”, “informative” and “useful”. They agreed that e-learning materials have provided them with basic understanding of the subject (3.9 out of 5, with 5 as strongly agree and 1 as strongly disagree). Moreover, students considered that e-learning materials applied in the course (ie. micro modules) were comprehensive (3.6 out of 5) and made the course interesting (3.6 out of 5). In general, they enjoyed using the e-learning materials (3.5 out of 5).

Table 1 below illustrates students’ responses when asked to choose 3 words most reflective of their experience in using e-learning materials for the course GRMD3101 / UGEC1120 from 16 words, including 8 words conveying positive meanings and 8 others conveying negative meanings. The top three terms used to describe e-learning experience are “informative”, useful”, and “interesting”. Overall, students tend to choose terms with positive meanings, which demonstrate their positive impression of the e-learning materials employed in the course.

GRMD1301 / UGEC1120 - THREE WORDS MOST REFLECTIVE OF STUDENTS' E-LEARNING EXPERIENCE

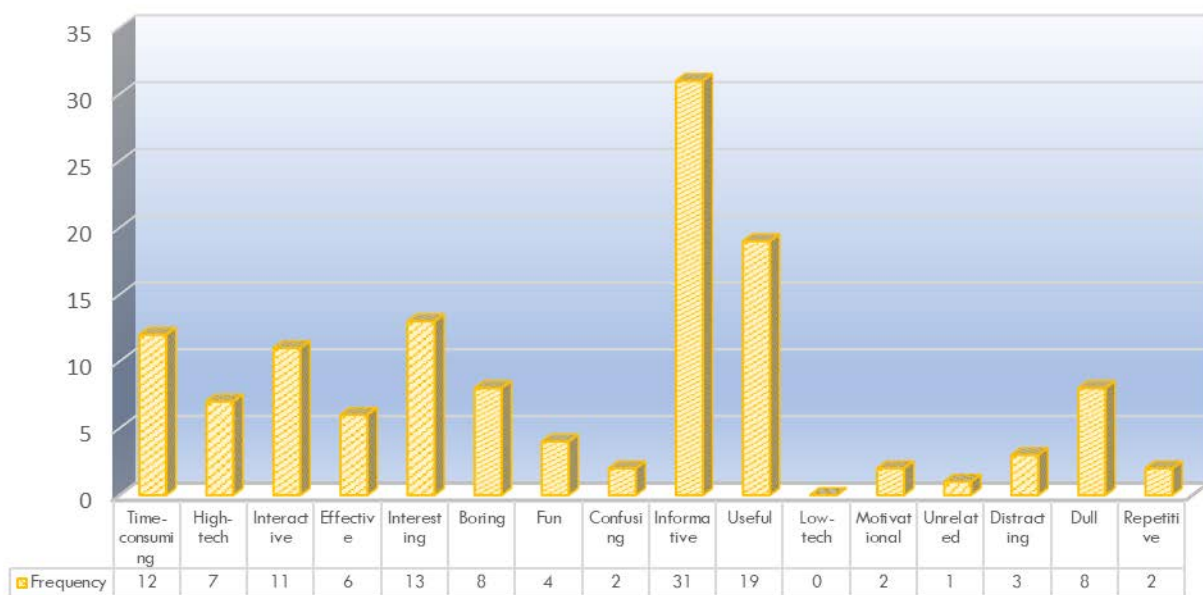


Table 1. Students’ responses when asked to choose and rank three words most reflective of their e-learning experience for the course GRMD3101 / UGEC1120.

Regarding students’ satisfaction in different areas of the modules including length, speed, easiness in using, graphics and animation, narration, interactive activities and quizzes, students ranked high in easiness in using, narration and, graphics and animation. However, the scores for length, speed and interactive activities are relatively lower but still above the average score.

Informal discussion with selected students was also conducted in order to understand more about the pros and cons of the micro-modules. They considered that the micro modules are useful for understanding some basic ideas but the animation and graphics can be further improved.

For the course GRMD3305, a total of 30 questionnaires have been collected. Students in general think that the e-learning materials have provided them with understanding of the subject (4.0 out of 5, with 5 as strongly agree and 1 as strongly disagree), and they think e-learning materials made the course interesting (3.8 out of 5). Students also tend to agree that e-learning materials have motivated them to learn more about the subject (3.7 out of 5). Students also reported that they have applied knowledge learnt from the e-learning materials to their studies. (3.7 out of 5)

Table 2 below illustrates students’ responses when asked to choose 3 words most reflective of their experience in using e-learning materials for the course GRMD3305 from 16 words, including 8 words conveying positive meanings and 8 others conveying negative meanings. The top three terms used to describe e-learning experience are “informative”, interactive”, and “interesting”. Overall, students tend to choose terms with positive meanings, which demonstrate their positive impression of the e-learning

materials employed in the course.

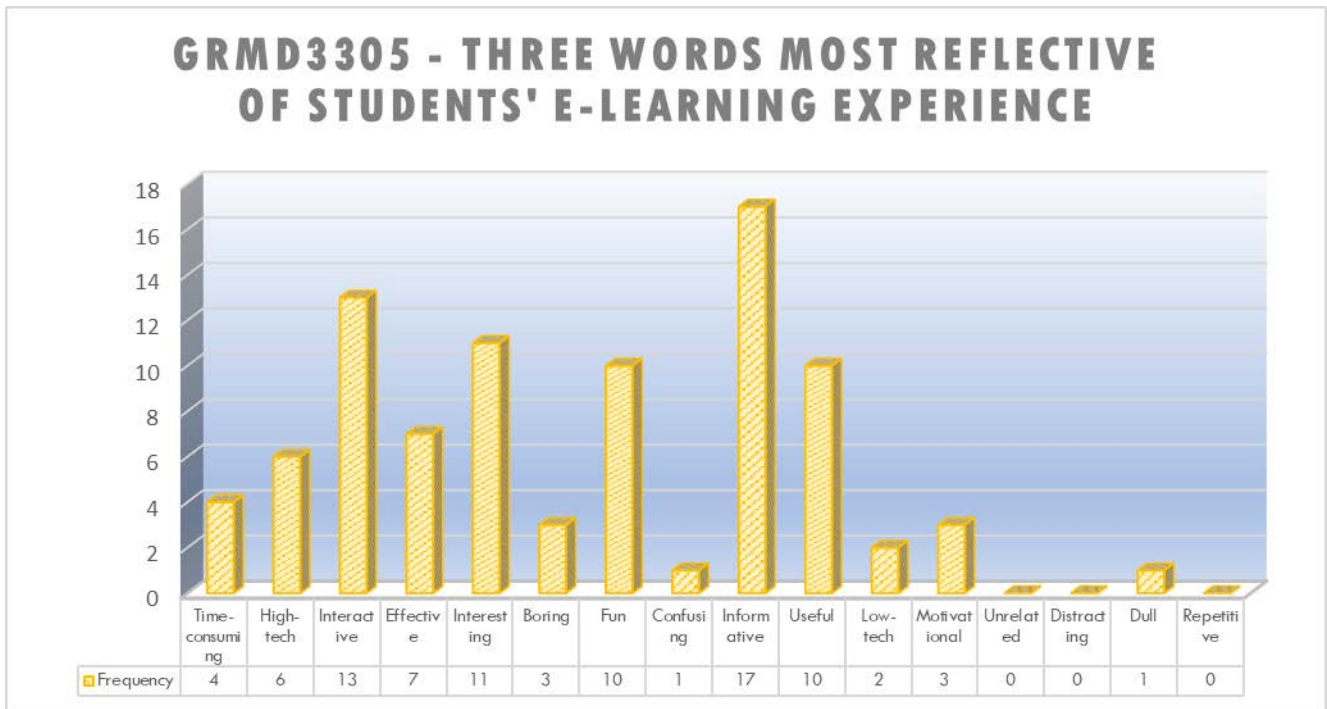


Table 2. Students’ responses when asked to choose and rank three words most reflective of their e-learning experience for the course GRMD3305.

As reflected in the surveys, the objectives of this project have been achieved. Areas for improvement include length, animation and speed of the micro modules.

4. Dissemination, diffusion and impact

Please provide examples of dissemination: website, presentations in workshops or conferences, or publications.

Please provide examples of diffusion: how the project results/process/outcomes/deliverables have been used in your unit and other parts of CUHK or other institutions?

Please provide examples of impact: how the project results (micro modules) can be adapted to other disciplines.

The seven modules were distributed to the students using the following web links:

Micro module 1: PRD, GPRD and PPRD as geographical units

http://www.grm.cuhk.edu.hk/~joanna/grmd1301/PRD/story_html5.html

Micro module 2: PRD cities: Guangzhou – Foshan - Zhaoqing economic circle

http://www.grm.cuhk.edu.hk/~joanna/gfz/story_flash.html

Micro module 3: PRD cities: Zhuhai -Zhongshan -Jiangmen economic circle

http://www.grm.cuhk.edu.hk/~joanna/zzjec/story_html5.html

Micro module 4: PRD cities: Shenzhen – Dongguan -Huizhou economic circle

http://www.grm.cuhk.edu.hk/~joanna/sdh/story_html5.html

Micro module 5: Migration

http://www.grm.cuhk.edu.hk/~joanna/int/story_html5.html

Micro module 6: Air Freedom

http://www.grm.cuhk.edu.hk/~joanna/air4/story_html5.html

Micro module 7: Intergovernmental Cooperation

<https://drive.google.com/file/d/1nnd7cEMiqs4UrNI9JuqnNCnEB9qZQNiq/view>

The micro-modules can be used in desktop and laptop. We will make our micro modules available to other colleagues in our department for their reference. Our experiences on developing micro modules are also shared with colleagues in our department's staff retreat.

PART II

Financial data

Funds available:

Funds awarded from MMCDG \$ 90,000

Funds secured from other sources \$ 0

(please specify _____)

Total: \$ 90,000

Expenditure:

Item	Budget as per application	Expenditure	Balance
Part Time Module Designer/ RA (employed as part-time RA)	\$82,000	\$73,095.79	
Purchase of computer software	\$8,000	\$3,901.18	
Total:		\$76,996.97	\$13003.03 (will be used for post-editing of the micro modules as the project is extended to 31 Aug 2018)

PART III

Lessons learnt from the project

Please describe your way forward.

This is a pilot implementation of e-learning in our course. In the coming academic year, we will incorporate the e-learning component into the course assessment scheme. If student feedbacks are positive, we will extend this e-learning experience to other courses in our Department.

Please describe any of the following item(s) accordingly:

- *Key success factors, if any*
- *Difficulties encountered and remedial actions taken, if any*
- *The role of other units in providing support, if any*
- *Suggestions to CUHK, if any*
 - *Example: what should be done differently?*

Key success factors

Simultaneous application of e-learning materials and lecture discussions have motivated and engaged students. In addition, flexibility is given to students as they can study and review the e-learning materials without locational or temporal boundaries. For instance, in the case of GRMD1301 / UGEC1120, a certain number of students have mentioned easiness in accessing the e-learning materials as one of their favorite features of the e-learning materials. Students also named autonomy in choosing when and where to learn as an innovative feature of the e-learning materials. Similar patterns can be observed from the evaluation results of e-learning materials applied to GRMD3305. In addition to the locational and temporal flexibilities in learning enabled by the e-learning materials, certain students reported pause function in the micro-modules has enabled customized learning experience. Students can adjust the pace of receiving the e-learning materials, and they can check learning progress easily.

Difficulties encountered and remedial actions taken

There is no centralized platform on which we could upload the e-learning materials. We think the files and electronic materials can be better hosted in a centralized domain. In response to the problem faced, we have utilized our own departmental electronic domain to host our files, which may not be ideal as this uses up departmental resources.

In creating the micro-modules, we underwent a painful process to identify right technical persons. The staff in Elite is helpful in providing information, but it is better to offer more technical help. Therefore, even though the contents of the micro-modules are carefully written by us, the design quality may not be as good as we expected.

Suggestions to CUHK

Certain students have reported technical difficulties in opening the e-learning materials. A centralized file hosting domain for e-learning materials, appropriate technical support, and corresponding hardware and software would enhance both teaching staff's efforts in designing course materials and students' learning experience. If the university decides to invest more in the eLearning initiatives, more technical supports should be sufficiently provided.

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: Pearl River Delta
- Keyword 2: Migration
- Keyword 3: Air Freedom
- Keyword 4: Intergovernmental cooperation
- (Least relevant) Keyword 5

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)
<p>(a) Project website:</p> <p><i>If a publicly accessible project website has been constructed, please provide the URL.</i></p>
<p>(b) Webpage(s):</p> <p><i>If information of your project is summarized in a webpage (say a page in the department's or faculty's website), please provide the URL(s) here.</i></p>
<p>(c) Tools / Services:</p> <p><i>If you have used any tools or services for the project, please provide names of the tools or services in here.</i></p> <p>Storyline software</p>

(d) Pedagogical Uses:

If any flipped classroom activities have been conducted, please provide information in here. If relevant, please indicate how your project output can be used to support flipped classroom activities.

With the introduction of Module 5 Migration, the flipped classroom teaching was experimented with for the lecture on migration. Students were asked to watch the module, understand key theories/concepts, while engaging in empirical discussion in the classroom with the guidance of the PI. The classroom contact hour was reduced by 20 minutes for this lecture. If added by the 20-minute micro-module, the total contact hour remained unchanged.

Module 6 Air Freedom was used for one lecture (air transport) of GRMD3305 Transport Geography in term 2 of 2017-18. Students were requested to watch the module before coming to the classroom. The PI focused on application during the lecture. With the introduction of this new arrangement for flipped classroom teaching, the lecture duration on air transport was reduced by 20 minute, while the total contact hour remained unchanged (both classroom teaching and online lecture).

(c) Others (please specify):

Table 2: Resources accessible to a target group of students (if any)

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, facebook), please specify.

<u>Course Code/ Target Students</u>	<u>Term & Year of offering</u>	<u>Approximate No. of students</u>	<u>Platform</u>
GRMD1301 / UGEC1120	2 nd term 2018	54	Web Link
GRMD3305	2 nd term 2018	32	Web Link

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)	<i>Please insert no</i>
(b) In workshop/retreat organized for CUHK teachers (e.g. CLEAR workshop, workshop organized by other CUHK units)	<i>Please insert no</i>
(c) In CUHK ExPo jointly organized by CLEAR and ITSC	<i>Please insert no</i>
(d) In any other event held in HK (e.g. UGC symposium, talks delivered to units of other institutions)	<i>Please insert no</i>
(e) In international conference	<i>Please insert no</i>

(f) Others (please specify)	<i>Please insert no</i>
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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	<i>Please insert no</i>
(b) Project leaflet	<i>Please insert no</i>
(c) Project booklet	<i>Please insert no</i>
(d) A section/chapter in a booklet/ book distributed to a limited group of audience	<i>Please insert no</i>
(e) Conference proceeding	<i>Please insert no</i>
(f) A chapter in a book accessible internationally	<i>Please insert no</i>
(g) A paper in a referred journal	<i>Please insert no</i>
(h) Others (please specify)	<i>Please insert no</i>

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.

This project develops seven micro-modules to facilitate students' self-learning of key concepts relating to PRD development. All the modules are created with the Storyline software. It includes visual graphics, animation presentation, narration and interactive games. These micro-modules will take the form of matching game (Module 1), animated trips (Modules 2 to 4) and short lectures (Module 5 to 7) to suit different levels of difficulties of the course contents. Each module is about 15 to 20 minutes. They will be integrated into the teaching schedule so as to enhance students' learning experiences.

Module 1 introduces three geographical concepts of the PRD, Greater PRD and Pan-PRD and their constituent jurisdictions. Modules 2 to 4 take the form of animated trips to nine PRD cities (Guangzhou-Foshan-Zhaoqing circle in Module 2; Zhuhai-Zhongshan-Jiangmen circle in Module 3 and Shenzhen-Dongguan-Huizhou circle in Module 4) which equip students with fundamental knowledge on the differences between the nine PRD cities in geographical, socio-economic, political and cultural terms. The first four modules forms a solid foundation to appreciate the regional backdrop of Hong Kong's development and its competition and cooperation with the PRD. Modules 5 to 7 covers important concepts that are relevant to the study of the PRD region such as migration, air freedom and intergovernmental cooperation. An interactive test or game is included at the end of the micro-modules to guide the learning process.

Flipped classroom teaching was experimented with the introduction of the micro-modules. Students were asked to watch the module, understand key theories/concepts, while engaging in empirical discussion in the classroom under the guidance of teachers. In the evaluation, students described their

e-learning experiences as “interesting”, “informative” and “useful”. They agreed that e-learning materials have provided them with basic understanding of the subject. Moreover, students considered that e-learning materials were comprehensive which made the course interesting.

In sum, simultaneous application of e-learning materials and lecture discussions have motivated students to learn in an interactive way. . In the coming academic year, we will incorporate the e-learning component into the course assessment scheme. If student feedbacks are positive, we will extend this e-learning experience to other courses in our Department.