THE CHINESE UNIVERSITY OF HONG KONG

Micro-Module Courseware Development Grant

Scheme 3: eLearning Pedagogy Research

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: Evaluating the impact of micro-modules in pharmacy education

Principal supervisor: Professor Lee Wing-yan, Vivian

Co-supervisor(s)

Department / Unit School of Pharmacy

Project duration: From December 2017 to October 2018

Date report submitted:

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?
Has the project created any impact as expected?

PHAR3812 is a preparatory course for Year 3 pharmacy students prior to the clinical clerkship at the Prince of Wales Hospital. The course aims to equip students with practical skills including literature review, drug information skills and medication therapy assessment. Yet, students may often focus more on their clinical knowledge and are not very interested in such aspects. Currently, the teaching on these topics is by lectures and workshops. Through incorporating micro-modules in this course, we aim to enhance students' problem-solving skills, and encourage more active participation in discussion.

We have developed 12 short micro-module videos on the three aspects, respectively clinical case presentation, literature evaluation and drug information. As PHAR3812 is a spring semester course, implementation of the micro-module and evaluation will be done in 2018-2019 semester 2. Thus, impact of this project is yet evaluated.

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 in 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)
Have the research design, methodology and timeline been changed/adjusted?
Overall, was the project completed satisfactorily?

We have produced 12 short micro-module videos. We plan to use the videos in the course PHAR3812, namely "Clinical Assessment and Monitoring". However, the course is in the second semester. Thus, the micro-module videos have not been delivered to students.

The plan for the project has not been changed. The timeline will be followed in the 2018-2019 semester 2. Each week there will be 3 micro-modules to be put online. All micro-module videos will be uploaded by the 5th week. All micro-module videos are in the format of powerpoint with voice-over (S2). Duration of micro-modules are as follows:

Focus area (duration)	Micro-modules (duration)
A. Clinical case presentation (10:28)	Introduction to clinical case presentation (2:11)
	Collection and assessment of information (2:04)
	Assessment on renal function (2:40)
	Interpretation of liver function test (3:33)
B. Literature evaluation (10:19)	Study design (2:22)
	Structure of a randomized controlled trial (RCT) – I (1:25)
	Structure of a randomized controlled trial (RCT) – II (1:59)
	Meta-analysis (2:54)
	Common types of biases (1:39)
C. Drug information (4:43)	Database searching skills (1:30)
	Critical appraisal of scientific paper (1:50)
	Formulating response and conducting documentation (1:23)

Research design and methodology have not been changed. Implementation of the micro-modules to the course PHAR3812 in the 2018-2019 semester 2 will be following the proposed plan, and the research methodology will be followed accordingly.

3. Evaluation Plan

Have you altered your evaluation plans?

Does your evaluation indicate that you have achieved your objectives?

After implementation of micro-modules to the course PHAR3812, evaluation plan will be followed as in project proposal. Students should complete all the modules before the presentation, by watching all modules and completing the multiple-choice questions following each module.
Online discussion questions will be posted on the discussion board each week, with the questions related to the micro-modules uploaded in that week. Students can answer and

discuss freely. A facilitator will assist in the discussion and monitor their participation. At the end of the posting period, students are required to complete an evaluation survey of the discussions.

The pre- and post-knowledge test will be conducted after the first and last lesson of this course respectively. It will be done online.

The journal evaluation presentation will be conducted in-class on the 6th week. Students will do the presentations in groups.

Students' performances are evaluated with different criteria as follows:

Assessment	Evaluation criteria	Comparison group
Online evaluation		
Multiple choice questions for each micro-module	- Completion of the micro-modules	No. First trial.
Online discussion: formative assessment in the middle of the course	- Participation - Qualitative assessment of questions and answers	No. First trial.
In-class evaluation		
Drug information workshop: summative assessment	- Mean total scores of overall performances - Mean scores of each of the assessment items	Current vs. past Year 3 students
Journal evaluation presentation: summative assessment	- Mean total scores of overall performances - Mean scores of each of the assessment items	Current vs. past Year 3 students
Knowledge test: formative assessment at the beginning and the end of the course	- Mean total scores	Pre- and post-test of current students

4. Dissemination, diffusion and impact

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

Please provide examples of impact: how the research results/outcomes/findings can be extended to other disciplines.

Please describe how the research results/outcomes/findings may support the University's strategic aims in promoting eLearning.

The developed micromodules are as follows:

Focus area	Micro-modules
A. Clinical case presentation	Introduction to clinical case presentation https://ga.vyond.com/videos/0JgnyCfsJNtc Collection and assessment of information https://ga.vyond.com/videos/030ydHIa0dQQ Assessment on renal function https://ga.vyond.com/videos/0q8uZImOLOYo Interpretation of liver function test https://ga.vyond.com/videos/0mgHNQXjWcHc
B. Literature evaluation	Study design https://ga.vyond.com/videos/0g6NpJs_uXQ0 Structure of a randomized controlled trial (RCT) – I https://ga.vyond.com/videos/0Uk1LfHygYhU Structure of a randomized controlled trial (RCT) – II https://ga.vyond.com/videos/0j4lZz1IDYF0 Meta-analysis https://ga.vyond.com/videos/0MxEYYnLICKE Common types of biases https://ga.vyond.com/videos/0-ONR1GCtacM
C. Drug information (4:43)	Database searching skills https://ga.vyond.com/videos/0i-Zs2HXLkfs Critical appraisal of scientific paper

	https://ga.vyond.com/videos/0ioEERKQ39Bk
	Formulating response and conducting documentation
	https://ga.vyond.com/videos/0S1lBgQ-Z1IA

When the evaluation is done, the findings of the project will be presented in at least one local (e.g. CUHK Teaching Expo) and one international conference (e.g. AMEE). In addition, one abstract and one manuscript will be prepared after completing the analysis for the students' evaluations.

PART II

Financial data

Funds awarded from MMCDG $ 150,000

Funds secured from other sources $ 0

(please specify_____)

Total: $ 150,000

Expenditure:

Item	Budget as per application	Expenditure	Balance
Staff cost	149,710	149,710	0
Printing & Stationary	290	290	0
Total:	150,000	150,000	0

PART III

Please describe your way forward.

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?*

Very often students focus on learning clinical knowledge. Skills regarding clinical case presentation and literature evaluation are overlooked. Yet, such skills are essential to develop for future career as a healthcare professional. Moreover, in view of the packed schedule of

undergraduate curriculum for a pharmacy student, it is not possible to include these contents into the regular lectures. Such development of micro-module videos allows the knowledge transfer of the skills.

Due to scheduling of the course, we are unable to implement the project within the project duration and collect subsequent students' response. Evaluation of the project will be done in the 2018-2019 term 2.

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: Pharmacy education

Keyword 2: Clinical pharmacy

Keyword 3: Clinical study design

Keyword 4: Drug information searching

(Least relevant)   Keyword 5: Literature evaluation

2. Summary

Please provide information, if any, in the following tables, <u>and provide the details in Part I</u>.

Table 1: Publicly accessible online resources (if any)
(a) **Project website:**
If a publicly accessible project website has been constructed, please provide the URL.
The link for the micro-module videos are provided above, with restricted access to designated students.
(b) **Webpage(s):**
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) in here.
(c) **Tools / Services:**
If you have used any tools or services for the project, please provide names of the tools or

services in here.

Vyond is the tool to develop the micro-module videos.

(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.

Table 2: Resource 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/</u> <u>Target Students</u>	<u>Term & Year of</u> <u>offering</u>	<u>Approximate No.</u> <u>of students</u>	<u>Platform</u>
PHAR3812	2018-2019, term 2	55	Blackboard

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

Table 4: Publication (if any)	
Please classify each piece of publications into one and only one of the following categories	**Number**
(a) Project CD/DVD	
(b) Project leaflet	
(c) Project booklet	
(d) A section/chapter in a booklet/ book distributed to a limited	

group of audience	
(e) Conference proceeding	
(f) A chapter in a book accessible internationally	
(g) A paper in an referred journal	1 (in preparation)
(h) Others (please specify)	

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.

PHAR3812 is a preparatory course for Year 3 pharmacy students prior to the clinical clerkship at the Prince of Wales Hospital. The course aims to equip students with practical skills including literature review, drug information skills and medication therapy assessment. Yet, students may often focus more on their clinical knowledge and are not very interested in such aspects. Currently, the teaching on these topics is by lectures and workshops.

In this project, we have developed a set of micro-module videos on such practical skills. The set of micro-modules will be implemented in the course PHAR3812 on 2018-2019 term 2. A total of 12 videos are prepared. The micro-modules have yet been introduced, thus evaluation is currently unavailable. We aim to equip students with better skills in clinical case presentation and handling drug information question in future real situation. Improvement in knowledge will be assessed through a pre- and post-test approach. Multiple-choice questions will be used to test students with every micro-module. Students are encouraged to engage in online discussion question. Student perception on the use of micro-module videos will be evaluated through survey, with items including self-perceived knowledge gain, self-perceived increase in ability in handling problems, and satisfaction towards micro-module.