THE CHINESE UNIVERSITY OF HONG KONG
Micro-Module Courseware Development Grant
Scheme 1: Basic Scheme

<u>Final Report (2016-17)</u>

<u>PART I</u>

Project title: Micro-Modules for Nursing Students: Flipped Learning in Anatomy

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Department / Unit: The Nethersole School of Nursing

Project duration: From May 2017 to April 2018

Date report submitted: 11 Jan 2019

1. Project objectives

In this project, we aimd to develop 4 micro-modules for the major topics in the Anatomy course (NURS1403) offered to Year 2 Nursing students to enhance students' understanding of the human anatomical structures and arrangement. The micro-modules is expected to help students consolidate the knowledge learnt and apply them into nursing clinical practice.

Due to some staff movement, the topics selected for developing the micro-modules have been changed from the proposed "The Musculoskeletal system" and "The Cardio-Respiratory system", to "The Musculoskeletal system" and "The Nervous system". This change did not affected the objectives of this project as the topics selected was also an important topic in the course.

Overall, the project was on track to meet its objectives and have not been changed.

2. Process, outcomes or deliverables

In total, 4 micro-modules have been developed and used in Flipped Classroom Teaching in the course NURS1403 Anatomy between September - December 2017. Each micro-module lasted for approximately 20 minutes and contained tailored made video/ animations on course contents, followed by some questions for self-evaluation. The total duration time were 80 mins.

Micro-module 1– The Musculoskeletal System I (Overview)
Duration   : 20 mins
Style   : S12 Animation/ S5 Powtoon videos
                            : S8 Demonstration (Medical)

Micro-module 2 – The Musculoskeletal System II (Surface Anatomy)
Duration   : 20 mins
Style   : S12 Animation/ S5 Powtoon videos
                            : S8 Demonstration (Medical)

Micro-module 3 – Nervous System (Spinal Cord)
Duration   : 20 mins
Style   : S2 PPT + Voiceover
                            : S12 Animation/ S5 Powtoon videos

Micro-module 4 – Nervous System (Special Senses)
Duration   : 20 mins
Style   : S2 PPT + Voiceover
                            : S12 Animation/ S5 Powtoon videos

The nature of deliverables have been amended during the development process but the time for project completion did not changed. Overall, the project is satisfactory conducted.

3. Evaluation Plan

The evaluations were conducted as planned. The following strategies have been used to evaluate students' experience in using micro-modules:

<u>Survey</u>

Student surveys (n=176) were collected at the end of the course. In general, over 96% of participants agree that the MicroModules 1) adequately explains the knowledge, skills and concepts it presents and 2) help students to gain a clear understanding of the subject respectively. The results indicates the objectives set were achieved.

<u>Focus Group</u>

Four focus-group meeting (n=29) was arranged to elaborate on the usefulness and possible improvements. The participants were satisfied with the clear illustration and the self-test given in each module. They appreciated this learning approach, which allowed them to flexibly self-pace their study progress according to their learning needs. Students also found the approach was useful in clarifying concepts and stimulating their learning. The results showed that nursing students accept using micro-modules to guide their learning. According to the results, micro-modules have the pedagogical potential to facilitate student pre-class learning and support the implementation of flipped classrooms.

<u>Online tracking</u>

The access rate, using Blackboard statistics, was over 95% as motivation marks were given in completing the MicroModules.

4. Dissemination, diffusion and impact

Dissemination	**<u>Web Access:</u>**
	▪ The micro-modules were uploaded to Blackboard one week before the class commenced. The students could download these modules through the NURS 1403 "Anatomy" course platform under the "Course Content" category. ▪ Course website: *https://blackboard.cuhk.edu.hk/ultra/courses/_97776_1/cl/outline*
	<u>Presentations:</u> ▪ The project was shared with a poster presentation in the CUHK Teaching and Learning Innovation Expo 2017 (Dec 2017) and share our project ▪ In coming June 2018, the results from the focus group interviews will be orally presented in The 7th Global Congress for Qualitative Health Research held in Seoul.

As the framework of the MicroModules is well-established in this project, direct adoption to other courses is feasible by postgraduate nursing courses, as well as other health-related disciplines such as Chinese medicine, Pharmacy and Public health.

PART II

Financial data

Funds available: $ 60,000

Funds awarded from MMCDG	$	$ 60,000
Funds secured from other sources (please specify_____)	$	$ 0
Total:	$	$ 60,000

Expenditure:

Item	Budget as per application	Expenditure	Balance
Staff cost			
Student helper	$9,075	$4,923.19	$4,151.81
Freelance Project Assistant	$21,760	$21,760.00	$0.00
Non-staff cost			
Licensing for courseware production)	$6,072	$5,995.42	$76.58
Commercially licensed images and animations.	$9,600	$9,558.00	$42.00
Incentives reward for participation in evaluation	$5,440	$5,260.00	$180.00
General Expenses and Publication Cost	$8,000	$27.00	$7,973.00
Total:	$60,000	$47,523.61	$12,423.39

PART III

Lessons learnt from the project

The current project has developed 4 micro-modules for the major topics in the Anatomy course offered to Year 2 Nursing students to enhance students' understanding of the human anatomical structures and arrangement. Evaluation results suggested they have the pedagogical potential to facilitate student pre-class learning and support the implementation of flipped classrooms. The majority of favorable responses suggested that the constructed micro-modules provided flexibility to self-pace students' study progress according to their learning needs. Students also found the approach was useful in clarifying concepts and stimulating their learning. Similar approach can be further extended to other related courses so as to facilitate the self-learning of the basic human anatomy and physiology.

1. Keywords

- Keyword 1: Anatomy (Most relevant)

- Keyword 2: Musculoskeletal System

- Keyword 3: Nervous System

- Keyword 4: Nursing

- Keyword 5: Interactive (Least relevant)

2. Summary

2. Summary   **Table 1: Publicly accessible online resources (if any)**
(a) **Project website:** *N/A*
(b) **Webpage(s):** *N/A*
(c) **Tools / Services:**   *Camtasia®*   *Articulate 360 (Education)*   *CLEAR-ELITE consultation services*
(d) **Pedagogical Uses:**   The micro-modules were used as pre-class material for students to self-learn. The 4 micro-modules were also available after the course to facilitate revisions on the basic concepts.
(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.

Course Code/ Target Students	Term & Year of offering	Approximate No. of students	Platform
NURS1403	1st term 2017/2018	*250*	*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)	*0*
(b) In workshop/retreat organized for CUHK teachers (e.g. CLEAR workshop, workshop organized by other CUHK units)	*0*
(c) In CUHK ExPo jointly organized by CLEAR and ITSC	*1*
(d) In any other event held in HK (e.g. UGC symposium, talks delivered to units of other institutions)	*0*
(e) In international conference	*1*
(f) Others (please specify)	*0*

Table 4: Publication (if any)	
Please classify each piece of publication into one and only one of the following categories	**Number**
(a) Project CD/DVD	*0*
(b) Project leaflet	*0*
(c) Project booklet	*0*
(d) A section/chapter in a booklet/ book distributed to a limited group of audience	*0*
(e) Conference proceeding	*1*
(f) A chapter in a book accessible internationally	*0*
(g) A paper in a referred journal	*0*
(h) Others (please specify)	*0*

3. A one-page brief write up

In this project, our team have produced four micro-modules for topics in the Anatomy course for Year 2 Nursing students to enhance students' understanding of the human anatomical structures and arrangement. The topics covered were "The Musculoskeletal system", and "The Cardio-Respiratory system" and it is expected these micro-modules can help students consolidate the knowledge learnt and apply them into nursing clinical practice. Below is the objective of each micro-modules:

Micro-module 1 – The Musculoskeletal System I (Overview)
Learning Objectives   : Outline the musculoskeletal system.
                                    : Recognize the skeletal structure of human body.

Micro-module 2 – The Musculoskeletal System II (Surface Anatomy)
Learning Objectives   : Locate internal organs through observation and palpation of the body.
                                    : Identify important anatomical features for body landmarks.

Micro-module 3 – The Nervous System (Spinal Cord)
Learning Objectives   : Identify the gross structure of the spinal cord and understand some of the
                                     clinical impact of spinal cord injury.

Micro-module 4 – The Nervous System (Special Sense)
Learning Objectives   : Understand of the gross anatomical structures related to vision and hearing.
                                    : Acknowledge the impact of daily habits to visions and hearing loss.

The micro-modules were constructed in the form of powtoon videos and demonstration video of twenty minutes and have been uploaded to Blackboard Learn platform. From the evaluation results, students were satisfied with this learning approach, which allowed them to flexibly self-pace their study progress according to their learning needs. Students also found the approach was useful in clarifying concepts and stimulating their learning. The results showed that micro-modules have the pedagogical potential to facilitate student pre-class learning and support the implementation of flipped classrooms.

The micro-modules will be kept in the Blackboard Learn platform in the coming academic years for students' access. Also, it will be made available in 2018-2019 academic year to students enrolled in the same course. Our team would like to thank once again the Micro-Module Courseware Development Committee for approving the grant. The success of these micro-modules will not happen without their generous support.