

THE CHINESE UNIVERSITY OF HONG KONG
Micro-Module Courseware Development Grant

Scheme 1: Basic Scheme

Interim Report (2015-16)

Report due 30 June 2016.
Please return by email to mmcd@cuhk.edu.hk

PART I

Project title: A Flipped Classroom of SAS Programming for Statistical Analysis in Public Health

Principal supervisor: Prof Marc Chong Ka Chun

Department / Unit: Division of Biostatistics, JC School of Public Health and Primary Care

Project duration: From January 2016 to December 2016

Date report submitted: 29 June 2016

1. Project objectives

The project aims to develop a flipped classroom model to encourage students gaining SAS programming knowledge outside classroom along with practical biostatistics questions. In the micro modules, we will teach students using free SAS software as a tool for analyzing public health data at home and thus allowing more flexibility in-class teaching from flipped class learning.

According to the focus-group opinions from the students, the objective of flipped classroom model is on a right track – they are welcome to learn new things especially for assistance on their assignments. Most students gave positive evaluations on the intention of the flipped classroom.

2. Progress on process, outcomes or deliverables

To date, 3 completed micro-modules with relevant course materials have been accomplished and have been uploaded to the Youtube (not shared) for evaluation:

- Lecture1 Introduction to SAS Basic Programming Skill Part 1
https://youtu.be/pB_T25FpMv0
- Lecture1 Introduction to Basic SAS Programming Skill Part 2
<https://youtu.be/9SmfUUE2v9U>
- ➔ The lecture 1 aims to teach students some basic SAS programming syntax like DATA steps and operating functions.

•Lecture 2 Create Analysis Ready Dataset

https://youtu.be/vXH5zJ0E1_E

- ➔ The lecture 2 aims to demonstrate how student could use SAS DATA steps to prepare their dataset fitted for analysis purposes.

•Lecture 3 Statistical Analysis on Population Means

<https://youtu.be/qRnbjOIayw>

- ➔ The lecture 3 aims to demonstrate how to use UNIVARIATE, TTEST, and ANOVA procedures in SAS to compare means by t-tests for (i) one population, (ii) two independent population, (iii) two dependent population, and (iv) several populations

All 7 openings of flipped classroom have been recorded with the help from Centre for eLearning Innovation and Technology (ELITE).

Several steps have been start-up:

- Recruiting a student helper: The procedure followed the school policy and spent around 3 weeks.
- Assistant from ELITE: We requested the recording services from ELITE in January 2016. Their services are impressive and professional. All 7 openings of flipped classroom have been recorded during that moment. Unfortunately, the free SAS software was not permitted to install in the computers of ELITE. We need to seek an alternative way as buying the required equipment to develop the micro-modules.
- Purchasing the equipment: One laptop was purchased from ITSC and the software license of Camtasia Studio was purchased after the consultation from ELITE.
- Development of micro-modules contents: The work flow, notes, and scripts were designed by Principal supervisor. The student helper is responsible to record the video and audio based on the materials provided by Principal supervisor.
- Dissemination: The completed micro-modules were purposed to upload to Youtube for internal evaluations.

The remaining 4 micro-modules will be completed by the end of August and they will also be sent for evaluations. The project will be completed by the grant expiry date.

3. Evaluation Plan

The focus group interview was started to evaluate the flipped classroom model. Totally 3 professors and 4 students were invited to provide their comments on the micro-modules. Generally the feedbacks were positive and we believed we achieved the course objectives. Nevertheless, some major revisions were needed:

- *“the total time of each video is a little bit long for a self-learner, actually you can cut some pause in the video to make it shorter”*
- *“...suggest to shorten each clip to 6 minutes”*
- *“well-organized structure... prefer a hardcopy of notes”*
- *“...add subtitle, it's easier for a non-native English speaker to understand...”*

We will refine the current and coming micro-modules based on the comments they provided.

4. Dissemination Activities (reports, websites, video links, products, etc.)

- 3 completed micro-modules were dissemination to Youtube with links:
 - Lecture1 Introduction to SAS Basic Programming Skill Part 1
https://youtu.be/pB_T25FpMv0
 - Lecture1 Introduction to Basic SAS Programming Skill Part 2
<https://youtu.be/9SmfUUE2v9U>
 - Lecture 2 Create Analysis Ready Dataset
https://youtu.be/vXH5zJ0E1_E
 - Lecture 3 Statistical Analysis on Population Means
<https://youtu.be/qRnbjOllayw>
- 7 openings of micro-modules have been recorded (not shown).
- Self-assessment quizzes which consists of 4 to 5 multiple choice questions are developed. They could only be answered after generating results from their SAS programs.