

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: Teachers' Noticing as an Action Research Method: A Flipped Classroom Approach for Enhancing Video-based Noticing in Teacher Education

Principal supervisor: Prof. NG Oi-Lam

Co-supervisor(s) Dr. CHAN To

Department / Unit Curriculum and Instruction

Project duration: From December 2017 to October 2018

Date report submitted: October 30, 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?

The project is on track to meet its objective of promoting an innovative instant commenting feature to practice active learning in and out-of-class. The objectives of the developed micro-modules with a flipped classroom approach have remained the same. Namely, this project aims at improving students' noticing ability in their current and future professional practice as educators—an important learning outcome across the Faculty of Education.

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?

Four micro-modules have been completed, all of which have been successfully implemented in one of the project supervisor's courses (in addition to two pilot trials in the project supervisor's classes which took place outside of class time). All together, the micro-modules have been implemented in courses MAED 6163, PEDU 6406B, and PEDU 6126. These implementations involved students using a newly developed Blackboard SCORM object (by ITSC) in this project which enabled students to pause and comment what they notice in the video modules while watching the videos in Blackboard and save the time-stamped comments instantly in Blackboard. These comments would then be stored in Blackboard for retrieval by the instructor for grading and/or utilizing in the next lesson.

The project outputs to date are:

- 1) Four micro-modules with hand-written annotated and narrated lecture slides videos have been completed:

Micro Module		Objective
1	The discipline of noticing	To provide fundamental knowledge about teachers' professional noticing and its importance for professional growth as teacher educators.
2	Professional noticing of children's mathematical thinking	To learn and apply the skills necessary for teacher professional noticing on students' mathematical thinking. To review different empirical studies related to professional noticing in mathematics.
3	Learning to notice for professional growth	To explain how noticing skills can be trained and how the ability is related to professional experience level.
4	Mathematics teacher noticing during task design	To introduce and apply theoretical model for productive noticing.

Duration of each micro-module are 20 minutes long, consisting of 10 minutes lecture video about new concept to be taught in following lesson and 10 minutes of classroom episode video for students to watch while applying the newly learned concept from previous 10 minutes. The style of micro-modules completed are of the following:

- First 10 minutes: Multiple PPT slides with slides annotation and voice over
- Next 10 minutes: Embedded video with instant time-stamped commenting
- Conclusion: One PPT slide with voice over

The implementation of these micro-modules have been satisfactorily, and the students have reflected positively on the use of these micro-modules to improve their noticing skills. The following is a summary of observations of students' participation in these modules include: (1) *all* students could participate in commenting and reflecting; (2) they could do so at their *own*

pace; and (3) the instructor could *assess* students' completion of the activity and (4) organize students' comments to facilitate *meaningful in-class discussions accordingly*.

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?

We used multiple methods to evaluate the project outcomes. The methods and results are as follows:

1. Assessing students' reflections posted on Blackboard to see how they comprehended or prepared class with pre-class learning materials;
 - The students' reflections showed that they attended to details presented in the micro-modules. They were able to apply the concepts and noticing skills learned during the modules in their reflections. The quality of their reflections were more focused as a result of having watched the micro-modules.
2. Counting the number and assessing the quality of instant comments students leave on the micro-module;
 - Interestingly, the number of students' instant commenting during each module varied. The range of comments were between 20 to 40. This shows that there is a range of students' ability to noticing important features of the video. Furthermore, students' comments generally increased over the course of engaging with different modules.
3. In-class observations to see how classroom dynamics (e.g. student engagement, motivation) differ from before.
 - The classroom dynamics indicates that the students participated in in-class activities at a satisfactory level upon watching the micro-modules. For example, the students seemed engaged and motivated to discuss what they watched. Overall, the students expressed that they found the micro-modules to be helpful and interesting.

Finally, we changed the following evaluation plan:

4. Counting the number and assessing the quality of comments students leave on each other's reflection.
 - This evaluation plan was not completed because we find that the students already took much time in commenting while watching the modules, and it was not feasible for them to spend more time outside of class to reflect on other students' comments. Instead, in-class discussions were facilitated for such reflections.

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.

Firstly, the modules developed in this project were posted in Blackboard for the respective courses. Secondly, information about the modules has been posted in the Project Supervisor's professional website (see shortlink, <https://wp.me/p7NzXu-9Y>). Thirdly, the Project Supervisor has presented the innovation developed by this project to a group of scholars from MIT during a meeting between the Faculty of Education and MIT. In terms of this project's impact, the micro-modules developed can be adapted by other disciplines, i.e. for topics that require students to pay attention to and comment on certain aspects of the video conveniently. This innovating feature of instant video-commenting can be used by other disciplines as a method for formative assessment.

PART II

Financial data

Funds available:

Funds awarded from MMCDG	\$ 39,454
Funds secured from other sources (please specify _____)	\$ 0
Total:	\$ 39,454

Expenditure:

Item	Budget as per application	Expenditure	Balance
Staff Cost	19,800	16,700.75	3099.25
Hardware	702	0	702
Courseware development	14,400	14,800	-40-0
Software	1552	1753.24	-201.24
General Expense	3000	1288	1712
Total:	39,454	34,541.99	5,258.68

PART III

Lessons learnt from the project

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?*

The key success factors of this project is the design of an innovative, instant commenting feature for students to practice active learning, i.e. video-based noticing, in and out-of-class. The major difficulties encountered in this project was due to the language used in the videos, as some of them were not spoken in English nor Cantonese. Although much time has been spent on resolving the subtitles in the video, the technical assistant was not able to put any English subtitles in the videos, resulting in a limited number of videos that students could choose to perform video-based noticing. In terms of moving forward, the Project Supervisor has promoted this feature to colleagues in her Faculty, and discussions about research collaborations within the Faculty on “teacher noticing” has begun as a result.

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: Video-based noticing

Keyword 2: Blended learning

Keyword 3: Teacher education

Keyword 4: Action research

(Least relevant) Keyword 5: e-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)
<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>https://oilamn.ca/2018/01/15/teachers-noticing-as-an-action-research-method-a-flipped-classroom-approach-for-enhancing-video-based-noticing-in-teacher-education-2017-present/</p> <p>(shortlink: https://wp.me/p7Nzxu-9Y)</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>CUHK ITSC: SCORM object for courseware development – Interactive activities for Video Study (MMCD)</p>
<p>(d) Pedagogical Uses:</p> <p><i>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.</i></p> <p>We designed four micro-modules on the topic of teacher noticing with a flipped classroom environment for the target courses, MAED6163, PGDE 5108, and PGDE 5148, offered by the Faculty of Education. Within the flipped classroom approach, the pre-class responsibility for students includes watching short lecture videos (“Part1”≈10-minute) followed by videos of actual classroom episodes as selected by the instructor (“Part2”≈10-minute). While watching Part 2, they would write their comments of what they notice, after which they would post reflections on the eLearning Blackboard system. The comments written by the students will then be stored in Blackboard for retrieval by the instructor for grading and/or utilizing in the next lesson. In terms of supporting flipped classroom activities, this instant video commenting function enable: (1) <i>all</i> students will participate in commenting and reflecting; (2) they will do so at their <i>own pace</i>; and (3) the instructor can <i>assess</i> students’ ability to notice certain aspects of the video and (4) organize students’ comments to facilitate <i>meaningful discussions accordingly</i> next class.</p>
<p>(c) Others (please specify):</p>

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>
MAED 6163	1 st term 2018	17	Blackboard
PGDE 5148	2 nd term 2017	17	Blackboard
PGDE 5108	2 nd term 2017	13	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)	1
(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	0
(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

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

“Teachers’ professional noticing” is a crucial element in action research and professional development in education. Our project, Teachers’ Noticing as an Action Research Method: A Flipped Classroom Approach for Enhancing Video-based Noticing in Teacher Education, aims to develop micro-modules on this very topic with a flipped classroom approach for enhancing our students’ noticing ability within the Faculty of Education. Within each module, we designed content and flipped classroom activities related to “teachers’ professional noticing” comprised of:

- (a) View pre-class video for introduction to a topic on “teachers’ professional noticing” and points to pay attention to in subsequent classroom episode video;
- (b) After the introduction video, watch a video of an actual classroom episode recording;
- (c) Apply the newly introduced topic when watching the classroom episode recording and complete online commenting/reflection activity before class;

The most distinctive feature (to be developed by ITSC) of this micro-module project is that while watching the videos in Blackboard, students can pause anytime, write comments of what they have noticed, and save the time-stamped comments instantly rather than waiting until the end of the video. These comments will then be stored in Blackboard for retrieval by the instructor for grading and/or utilizing in the next lesson.

We designed and implemented four modules in three courses, MAED 6163, PGDE 5108, and PGDE 5148. The implementation of these micro-modules have been satisfactorily, although we did encounter some difficulties in terms of adding subtitles to the videos. Upon evaluating this project, we found that:

- (a) Students were better at noticing subtleties and different aspects of teachers’ professional noticing and action research;
- (b) Students could review and comment on the learning materials at their own pace; they learned key ideas about the learning contents before they attend class;
- (c) More class time could be used for active learning (i.e., small and large group discussions);
- (d) The instructor could see how students comprehend the topic and which points they are missing or misunderstanding by looking at their comments and reflections online, before class.

The key success factors of this project is the design of an innovative, instant commenting feature for students to practice active learning, i.e. video-based noticing, in and out-of-class. The Project Supervisor has promoted this feature to colleagues in her Faculty, as well as through international conference and a meeting with MIT scholars initiated by the Faculty. Discussions about research collaborations within the Faculty on “teacher noticing” has begun as a result.

Short video has been posted on: <https://wp.me/p7NzXu-9Y>