Flipping the Classroom:

Changing the Pedagogy of Teacher Education

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Seminar on
Teaching Development Grant (TDG) Projects

TDG Project:
Engaging Learners with Flipped Classroom

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Team Members

TDG Project (T0152): Engaging Learners with Flipped Classroom

- About the project
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- Prior 1st Flipped Classroom Meeting
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Team Members

Principal Project Supervisor:

- Dr. LAI, Yiu Chi (Jan to August 2016)
- Dr. Ng Mee Wah Eugenia (June to Dec 2015)

Co-supervisor:

- Dr. Ng Mee Wah Eugenia (Jan to August 2016)
- Dr. LAI, Yiu Chi (June to Dec 2015)
- Dr. MA, Wai Wing Ada
- Dr. NG, Mei Lee
- Dr. TSANG, Kwan Lan Vicky
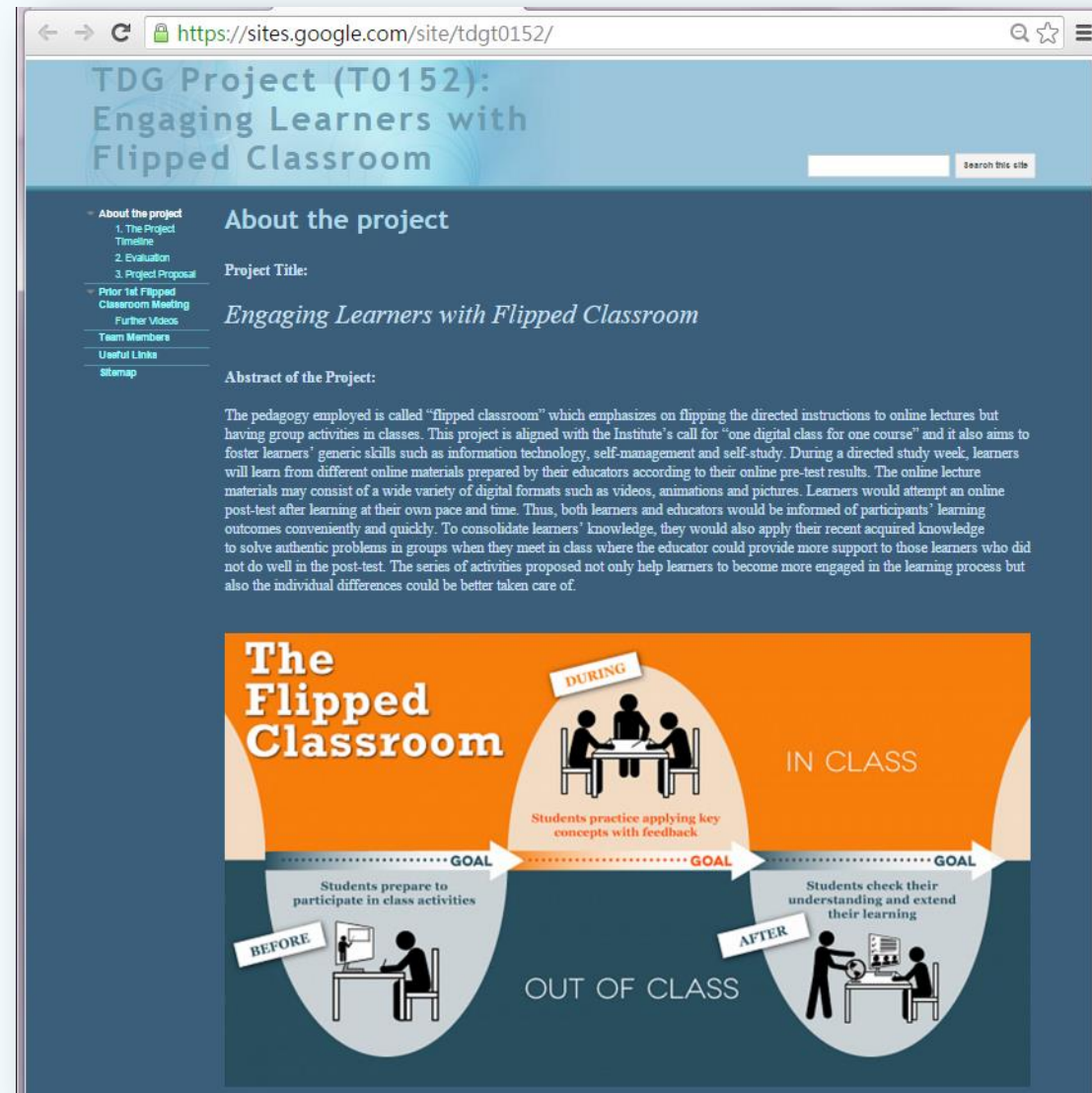- Dr. YANG, Chi Cheung Ruby
- Mr. YUEN, Tze Leung Raymond

Project Website

https://sites.google.com/site/tdgt0152/

What is Flipped Classroom

- It refers to a new teaching model which **adopts student-centred approach** and **enables teachers to re-arrange the class time and time for doing homework**. (Bergmann& Sams, 2012; Johnson, Adams, Becker, Estrada & Freeman, 2014).

- In a typical flipped classroom, students will be asked to study online instructional materials such as videos, or do anything that helps them understand the subject contents at home prior to class.

- It allows teachers spare more class time for learning activities during lessons (Bergmann& Sams, 2012).

- As "flipped classroom" is greatly facilitated by making use of technology, it is often classified as an e-learning approach by most educators.
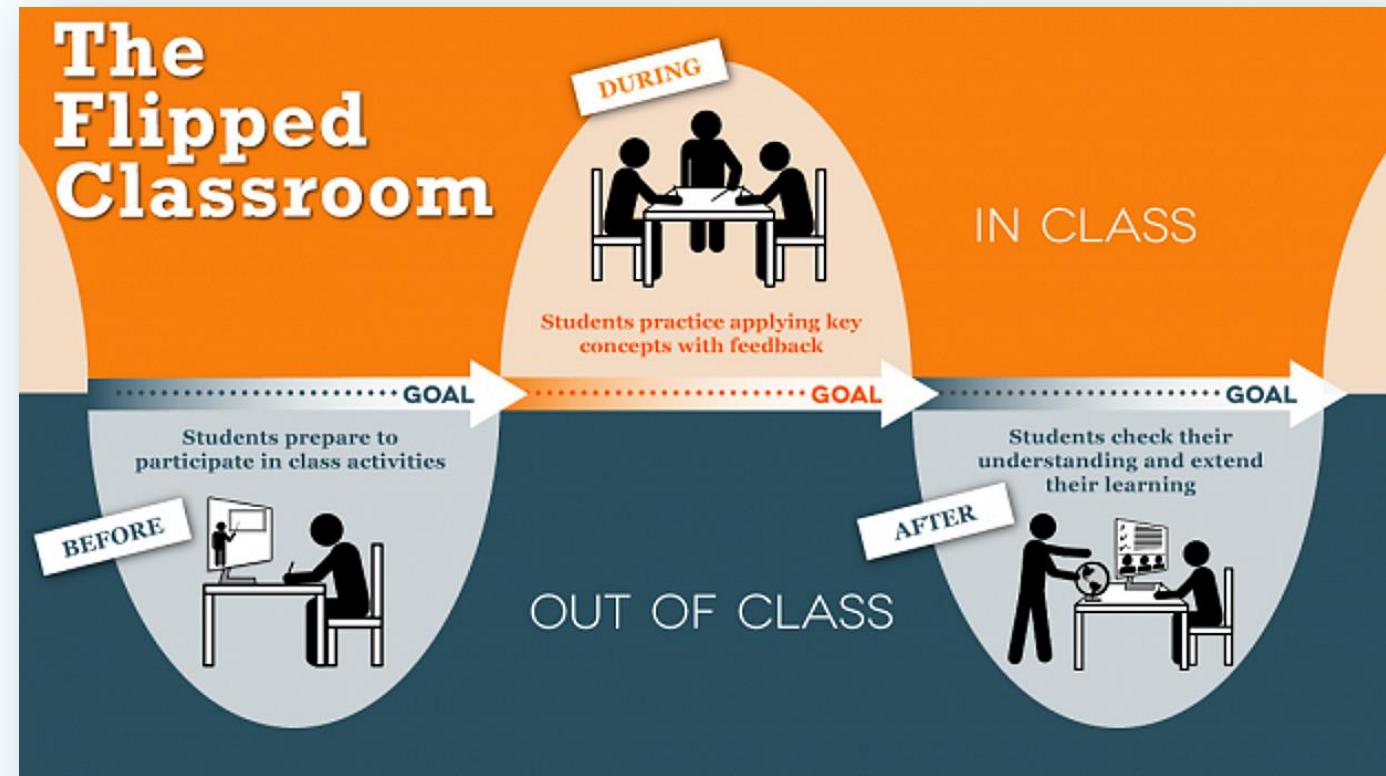
Relevant findings

- Bishop and Verleger (2013) criticize that the term "flipped classroom" is usually used as a buzz word without underpinning rationale behind the new teaching model.
  - They propose that flipped classroom must contain learning knowledge on computers independently outside the classroom and interacting with classmates in a small group inside the classroom.
- Besides, Herreid and Schiller (2013) further point out that flipped classroom provides more flexibility for students' learning, improves students' learning achievements and allows creative and innovative teaching.
- Couch (2014) argues that students' learning attitudes and academic achievements can be improved.
- Chua and Lateef (2014) suggest that the model are mostly accepted by university students in Asia.

Why flipping the class ?

https://www.youtube.com/watch?v=R72nEs5Savs

Project Cases

Teacher's Name	Course Name	Topic	No. of Topics	No. of Students
NG, Mee Wah Eugenia	IT in Education	• Photo Editing	1	74
MA, Wai Wing Ada	Health Behavior- Theory and Programme Planning	• Health Belief Model • Social Cognitive Theory • Diffusion of Innovations Theory • Precede-Proceed Planning Model	4	46
NG, Mei Lee	Early Experiences in English	• ESL and EFL • Children Characteristics • PA & Phonics • Oral vocabulary	4	51
YANG, Chi Cheung Ruby	English I	• Stress and Intonation	1	62
YUEN, Tze Leung Raymond	中國樂器	• 三分損益法	1	67
LAI, Yiu Chi	Learning and Teaching in IT	• Web authoring in secondary ICT curriculum	1	24
LAI, Yiu Chi	Pedagogical Design and Practices in e-Learning Environment	• Student Response Systems • Learning Management Systems	2	65

Learning Activities

Teacher's Name	Online resources	Online Assessment	Activities in the Classroom
NG, Mee Wah Eugenia	19 videos	• 1 pre-test • 1 post-test	Individual exercise: editing individual photos Group work: editing photos for websites
MA, Wai Wing Ada	4 Online PPT 9 videos	• 4 pre-tests • 4 post-tests	Students were required to complete the quiz that was conducted via flipped classroom after the student-led seminars had been conducted in the classroom. Content that students had most problem with were identified and were revisited/revised in the classroom after data analysis of the flipped classroom activities.
NG, Mei Lee	5 videos	• 4 pre-tests • 4 post-tests	Group exercise : play and critique vocabulary/phonic games Group work : inventing their own rhymes
YANG, Chi Cheung Ruby	3 videos 3 websites	• 1 pre-test • 1 post-test • 3 quizzes • 1 exercise	Students read aloud a prose passage assigned by teacher (a story extracted from a science fiction). They recorded their reading aloud and uploaded their recording to Moodle. After that, students had to apply the knowledge they had learned to give comments (both positive and negative) to their peers' reading aloud performance.
YUEN, Tze Leung Raymond	1 Flash animation	• 1 pre-test • 1 post-test	Group work: Use a straw to produce pentatonic scale
LAI, Yiu Chi	1 online video	• 1 pre-test • 1 post-test	Practical exercises on web authoring tools
LAI, Yiu Chi	A wiki page	• 1 pre-test • 1 post-test	Practical tasks on Student Response Systems Practical tasks on Learning Management Systems

Case Study 1

IT in Education
Dr. Eugenia NG

Topic: Image Editing

The Study

Participants

- The current study was conducted during the first semester of 2015 at the HKIEd

- It involved student teachers (hereafter, participants) enrolled in the Higher Diploma in Early Childhood Education during the first semester of their studies.

- Almost all the participants were female students who expected to teach in kindergartens (K1-K3).

- All the participants had recently completed their secondary school education.

- Two classes participated in the study: one class had 38 students, while the other had 36 students.

The Study

- The participants were taking an "Information Technology in Education" course taught by the presenter during the study period.
- At the end of lesson three, students were introduced to the flipped classroom pedagogy and attempted a pre-test.
- They were required to learn about a web-based photo editing software called Pixlr in their own time prior to attending classes next week.
- There were a total of 19 video clips which were created by a research assistant supervised by the presenter.
- The short videos show various editing functions of Pixlr as shown in Figure 1. Students could view any video based on their own needs and they were reminded that it was not necessary to watch them all.

**Figure 1:
Online video clips**

Screen shot	Translation
內容	Contents
1 開啟Pixlr	1. Open Pixlr
2 註冊	2. Sign Up
3 登入	3. Login
4 語言設置	4. Select language
5 打開圖片	5. Select images
6 選框工具、拷貝、粘貼	6. Select tools, copy and paste
7 魔棒工具、清除	7. Wand tool, clear
8 套索工具、透明背景	8. Marquee tool, transparent background
9 保存PNG	9. Save images in PNG format
10 圖片合併、變換和變形	10. Merge images, change images, and shapes
11 複製圖層、圖層位置	11. Create layers, move layers
12 更換背景	12. Change background
13 歷史記錄	13. Editing history
14 保存JPG	14. Save images in JPG format
15 圖片格式	15. Formats of images
16 濾鏡	16. Using filter
17 調節像素	17. Adjust pixels
18 亮度、對比度	18. Adjust brightness, contrast
19 色相、色彩平衡、飽和度	19. Adjust hue, color balance, and saturation

The Study

- When the participants attended classes the following week, they were asked to apply the learned techniques in classes:

  - Group work: editing photos for websites
  - Individual work: editing individual photos

Learning Activities in Class
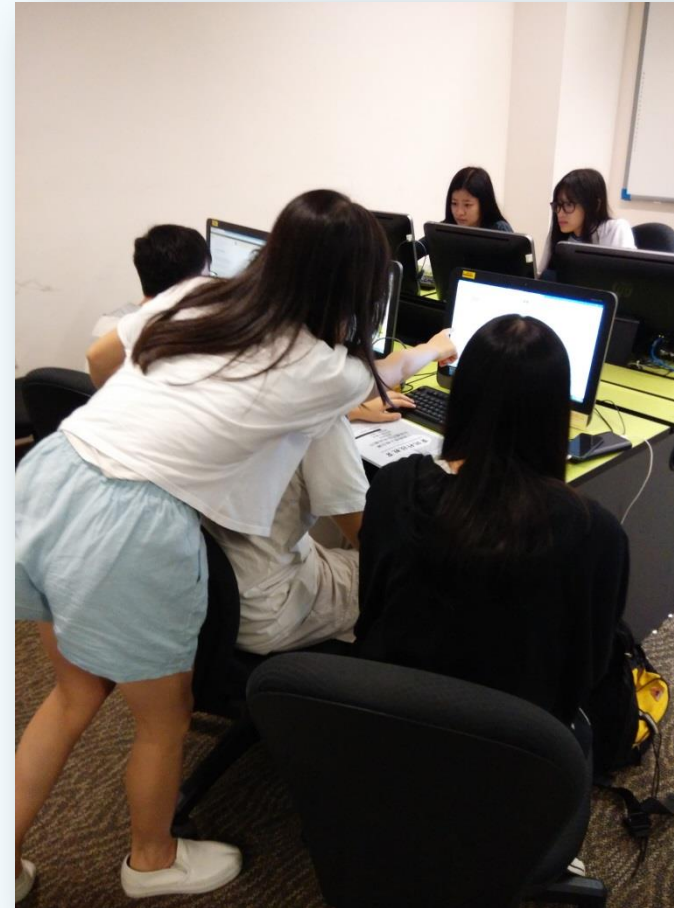
Learning Activities in Class

Outcome - Example of edited photos (Group)

Original image
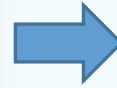
Edited image
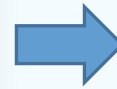
welcome to Beijing

Outcome - Example of edited photos (Individual)

Original image
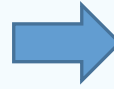
Edited image
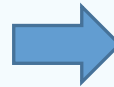
Life is more than Thinking

Outcome - Focus Group Meetings

- *我覺得翻轉教室學東西沒有這麼悶，因為傳統是老師給什麼，我就要學什麼，但是這次是自己可以選自己想看的東西......*
- *I think learning with flipped classroom is less boring. It is because I only learn what teachers teach using the traditional teaching method. However, this time I can choose what I want to watch…*

Video 1

- *如果只是在課堂教，老師會因為課堂的時間講得快，有些同學未必跟到，就錯過一些東西，學不到了。如果在家自學的話，可以一步一步來，跟著自己的進度......*
- *Some students may not be able to follow and may miss something because teachers may be speaking too fast within limited teaching time when they teach in classes. If I study at home, I can learn step by step at my own pace…*

Video 2

- *翻轉教室的教學方法可以增加我對這科的興趣......*
- *Flipped classroom can increase my interest in this subject…*

Video 3

Case Study 2

Early Experiences in English

Dr. NG Mei Lee

Challenges & Reflections in the trial journey

1. Turning wordy power point slides into audio format supported by more graphics

Challenges and reflections :

- Preparing teaching materials from the students' point of view
- Concise teaching points with comprehensible 'language'
- Refining the teaching content
- Time consuming task to voice over the PPT

2. Setting pretest and post test questions

Challenges and Reflections ：
- Get to know "What do we actually expect students to get out from us"
- Not an easy task to set discriminative pretest and posttest questions
- Not all course content are suitable for MC questions
- To count or not count the marks ?
- Continuous assessment = too many assessment tasks ?

3. Designing class activities to compliment the flipped activities

Challenges & Reflections :

Create more interactive chances for students in class

Refine the match between the flipped and the class activities

What did students think of the trial ?

Students' feedback collected from :
- A questionnaire has been posted online

No. of Participants		23					
Item	Description	Mean	1 (Strongly Disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly Agree)
Q1	I have fully understood the contents of the topic via flipped classroom activities.	3.96	0.0%	0.0%	17.4%	69.6%	13.0%
Q2	I have developed self- management skills via flipped classroom activities.	3.96	0.0%	0.0%	13.0%	78.3%	8.7%
Q3	I have developed self-study skills via flipped classroom activities.	4.13	0.0%	0.0%	8.7%	69.6%	21.7%
Q4	I have developed IT skills via flipped classroom activities.	3.57	0.0%	0.0%	43.5%	56.5%	0.0%
Q5	I should be able to transfer the generic skills that I have developed during the flipped classroom experience to other courses and/or workplace.	3.74	0.0%	0.0%	30.4%	65.2%	4.3%

What did students think of the trial ?

Students' feedback collected from :
- A questionnaire has been posted online

Q6. Please choose what you feel about flipped classroom experience	
A. Chances for collaboration	13.0%
B. Cater for individual differences	34.8%
C. Difficult to learn	4.3%
D. Feel helpless	0.0%
E. Learn on my own pace	82.6%
F. Learn on my own time	95.7%
G. Learning is more interesting	30.4%
H. Less motivated to learn	4.3%

What did students think of the trial ?

Students' feedback collected from :

- A questionnaire has been posted online

It is a very great learning method for university students. Since it is flexible that we can do it whenever we are free. Thus, it is very convenient.

Besides, the content is very useful for early childhood educator. The contents are specific and clearly explained. The learning contents, especially the part regarding Phonics, really inspire me.

In short, I feel I am really learning and gain something practical when I am doing flipped classroom.

What did students think of the trial ?

Students' feedback collected from :

- A focus group interview was done by SRA at the end of the course

- *比較方便，用電腦不用寫。還有前測後測，讓我知道看影片真的有用，可以讓我答對這些問題。*

- *我是積極學習了。之前因為時間關係，未必能看完整篇reading。但有了這個之後，覺得上網看片會比較快，而且通過練習，可以從中知道自己學了什麼重點。*

- *因為翻轉教室大多數都是介紹了下一堂要講的基本的概念和資料，到課堂上再根據這些概念去延展一些活動。起碼知道自己大概會做什麼，活動就會投入一些。例如這堂課請了一個ECLC的老師去講解怎樣學習英文，他講的概念有些在練習已經見過，我聽他講解時會更清楚一些。*

Case Study 3
Pedagogical Design and Practices in e-Learning Environment

Dr. LAI Yiu Chi

Cycle 1

https://sites.google.com/site/flippedclassroompdpcl/

Cycle 2

https://sites.google.com/site/flippedclassroompdpclround2/

Online video clips

Online assessment

Analysis of the online assessment

Analysis of the online assessment

問題　　　　　　　　　　　回覆　**32**

Class (32 則回應)

● 小學中文
● 小學數學

59.4%

40.6%

1. 學習管理系統 的主要目的是
答對數：31 (作答總數：32)

儲存檔案	—1 (3.1%)
✓管理學習…	31 (96.9%)
製作教材	—0 (0%)
招收學生	—0 (0%)

0　　5　　10　　15　　20　　25　　30

Q&A

Thank you for attending!