

# Using Technologies to Enhance Learning and Teaching

Facilitator: Alan Wong  
Centre for Learning and Teaching  
VTC

Innovative Pedagogical Strategies in VPET Series is funded by the Quality Enhancement Support Scheme (QESS) on the project of "Development of Effective Pedagogical Practices and a Cross-institutional Online Sharing Platform for Hong Kong's Vocational Education and Training (VET)".

## Intended Learning Outcomes

Explain the **role of Technology Enhanced Learning (TEL)** in VPET and key considerations in designing a blended learning course;

Identify **good practices** for facilitating, managing and evaluating blended learning activities; and

Recognise different TEL approaches and **tools** in supporting various learning and teaching activities.

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What was the Key Feature of Young People Learning in British Empire Schools?

3

Identical

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## What Do You Expect Young People to Learn in Vocational and Professional Education and Training (VPET)?

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## Let's Solve Our Problems

- Get away from **teacher-led classrooms**
- Create classrooms that are **learner-centered** to meet the demands of our rapidly changing world
- Make use of technology to **enhance learning**
- Educate students who can be **collaborators, thinkers** and **innovators**

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## Role of Technology Enhanced Learning (TEL) in VPET

- Provide flexibility in learning
- Provide a vehicle for blended learning
- Bring technology to the classrooms
- Enhance students' learning and creativity
- Help create students who can think critically, solve problems and work collaboratively

Crissy, V., 2013.

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# Large Class Lecture

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## Goals

- Deliver learning content
- Cover the syllabus
- Increase student engagement and classroom interaction
- Facilitate peer learning and class discussion

## Challenge of Large Class Lecture

- 1 teacher VS many students

## Characteristic of Large Class Lecture

- Lecture is passive

## Action to Achieve the Goals

- Turn a passive lecture into an active lecture

## Solution

- Classroom Response System

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# Classroom Response System

<https://b.socrative.com/login/student>



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# Plickers

- <https://plickers.com>



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## Classroom organisation and participation:

Robert R. Weaver  
Jiang Qi

### Classroom Organization and Participation: College Students' Perceptions

Students who actively participate in the learning process learn more than those who do not. "Involvement matters," as Tinto (1997) points out, and this involvement can occur both inside and outside the classroom. The importance of students' active involvement in learning is by now well documented and known (Fritschner, 2000; Howard & Henney, 1998; Howard, James, & Taylor, 2002; Nam, 1996; Howard & Henney, 1998; Howard, James, & Taylor, 2002; Nam, 1996; Rau & Heyl, 1990; Smith, 1996; Thompson, 1996). Active involvement in class facilitates critical thinking (Carside, 1996) and facilitates the retention of information that might otherwise be lost (Bransford, 1979). Although most instructors acknowledge the value of active participation in the college classroom, achieving success in eliciting it appears more difficult. Professors talk almost 80% of the time (Fischer & Grant, 1983; Smith, 1983). Only about 10 in 40 students participate in discussions, and typically, just 5 of these dominate the discussion (Karp & Yoels, 1976). Karp and Yoels (1976) refer to this overriding pattern of participation in the classroom as the "consolidation of responsibility."

The authors express their appreciation to Steve Kurov, April Zimmet, and John White for the various resources and support they offered to this project, to the Arts & Sciences Master Teachers for their encouragement and help in formulating this project, and to all faculty and students at Youngstown State University who took time to participate in the teaching and learning survey. Special thanks go to students in our Social Research classes whose insights and diligence made completion of this project possible. Finally, we are grateful to anonymous reviewers whose comments and suggestions helped make this paper much better than it otherwise would have been.

Robert R. Weaver is Professor of Sociology in the Department of Sociology and Anthropology at Youngstown State University.  
Jiang Qi is Associate Professor of Sociology in the Department of Sociology and Anthropology at Youngstown State University.  
The Journal of Higher Education, Vol. 76, No. 5 (September/October 2005)  
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Weaver, R. R., & Qi, J. (2005).

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## Key Considerations in Using CRS

Would YOU want more classroom interaction?

Routine of using CRS in your class

Use it regularly

Students may need some time to get started

Do all of your students have mobile phones?

Internet connection

Use the data gathered from CRS

Appropriate questioning

Require clarification, feedback

Facilitate collaboration

Centre for Teaching Excellence, Cornell University.

<http://www.cte.cornell.edu/teaching-ideas/teaching-with-technology/classroom-response-systems.html>

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### Goals

- Promote active learning
- Provide instant feedback in class

### Challenges

- Large number of students
- Limited time

### Mission

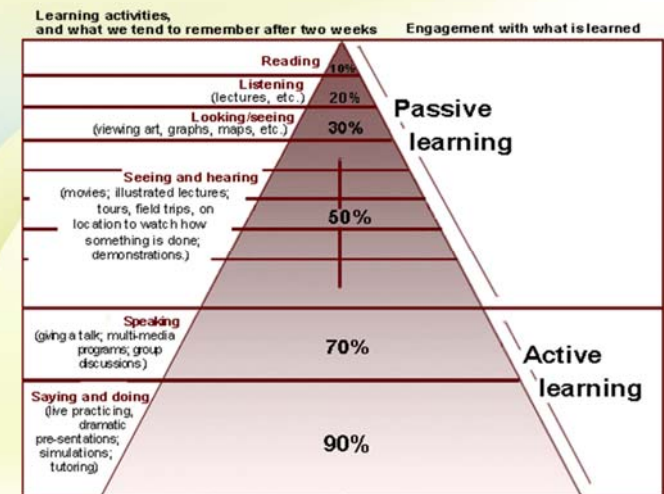
- Moving teaching content outside the classroom allows more class time to be spent on engaging learning activities such as peer learning or active learning

### Solution

- Flipped classroom

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## Edgar Dale's Cone of Learning (Dale, 1969)



<http://n-imagecache.aldenhosting.com/~n1studyq/images/coneoflearning.gif>


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## Traditional Classroom




- Instructor prepares material to be delivered in class.
- Students listen to lectures and other guided instruction in class and take notes.
- Homework is assigned to demonstrate understanding.

## Flipped Classroom



- Instructor records and shares lectures outside of class.
- Students watch / listen to lectures before coming to class.
- Class time is devoted to applied learning activities and more higher-order thinking tasks.
- Students receive support from instructor and peers as needed



Reinert Center for Transformative Teaching and Learning, Saint Louis University.  
<http://www.slu.edu/ctl/resources/teaching-tips-and-resources/flipped-classroom-resources>

# Good Practices for Facilitating and Managing a Flipped Classroom



2015年10月7日 星期三 5:04PM  
 26°C

明報新聞網

讀者報料 | 加入我們

主頁 每日明報 即時新聞 明報OL網 明報視頻 訂戶專享 訂閱明報

要聞 港聞 經濟 娛樂 社評 華埠 觀點 中國 國際 教育 體育 副刊 英文 作家專欄 深度報道 偵查報導 圖片看世界 新聞總覽

熱門話題: 港大排名跌 徐子淇生B 章子怡 黃曉明Baby 24小時報料 Montblanc

教育

2015年10月7日 星期三

「翻轉教室」奪A增兩成 學生睇片備課 上堂全討論

最高質量教育文章

- 1 「翻轉教室」奪A增兩成 學生睇片備課 上堂全討論 - 20151007
- 2 港惠學生打工4日 體驗酒店做行政 街市送菜等 - 20151006
- 3 每堂有小鬧 學生初抗師權主動 - 20151007
- 4 教育線: 教授要再整人先開校委 - 20151007
- 5 怎樣才算病? 中西大不同 - 20151007
- 6 一期一宇: 黃觀濤 - 20151007

【明報專訊】2007年有美國教師提出「翻轉教室」(flipped classroom)教學模式，學生回家上網睇片備課，上課時間則用作討論及做功課，不再限於教師講書、學生抄筆記，此模式已在港萌芽。香港知專設計學院時裝及形象設計學系講師姚麗莉(Nina)是本港少數實行翻轉教室的教師，她打趣說「再沒學生打瞌睡了」，奪甲等成績的學生增加兩成。

香港知專設計學院時裝及形象設計學系講師姚麗莉(左一)

Source: Ming Pao Daily, 7 October 2015  
[http://news.mingpao.com/pns/dailynews/web\\_tc/article/20151007/s00011/1444153560024](http://news.mingpao.com/pns/dailynews/web_tc/article/20151007/s00011/1444153560024)

## 「翻轉教室」奪A增兩成

### 學生睇片備課 上堂全討論

特稿

2007年有美國教師提出「翻轉教室」(flipped classroom)教學模式，學生回家上網睇片備課，上課時間則用作討論及做功課，不再限於教師講書、學生抄筆記，此模式已在港萌芽。香港知專設計學院時裝及形象設計學系講師姚麗莉(Nina)是本港少數實行翻轉教室的教師，她打趣說「再沒學生打瞌睡了」，奪甲等成績的學生增加兩成。

明報記者 黃津琪

「傳統上堂真的不夠時間用」是Nina教學逾10年的心聲，亦令她決心翻轉教室。不少專上學院講師都會利用簡報(Power Point)講課，但Nina發現「講解」佔據大部分課時，學生可能不消一會便「瞓着頭」，令她決意加強互動。

去年她第一課便跟學生說要推行翻轉教室，要求學生上課前先看3條相關影片備課，每次上課則先有計分的小測，再分組討論，最後作匯報。她說翻轉教室後，可由小組及課堂討論更清楚學生能力，多補助能力較弱的學生，如當他們在課前時提出獨特見解，她會大力讚賞鼓勵。

知專講師：再沒學生打瞌睡

Nina認為同儕比老師的解釋易令學生明白，一些能力較佳的學生在討論過程中往往擔當帶領角色，能力一般的學生可從中得益。因討論成每節課的重點活動，氣氛令學生敢於發表意見，Nina去年的學生陳嘉嫻說：「連帶一些平日寡言的學生，亦會積極參與，甚至會主動提出一些好主意。」



香港知專設計學院時裝及形象設計學系講師姚麗莉(左一)一年前開始採用「翻轉教室」教學模式，除在課堂上分組討論外，也會到圖書館借相關書籍與學生交流。(黃津琪攝)

## 每堂有小測 學生初抗拒後主動

去年起「翻轉教室」的香港知專設計學院時裝及形象設計學系講師姚麗莉 (Nina) 說, 起初也生怕學生非常抗拒, 首兩三課學生反應不太理想, 上課前沒備課, 而且有微言, 但當他們自覺在小測中不懂作答, 討論時又「不知道別人說什麼」, 都意識自己的不足, 開始主動備課, 到學期中段, 學生上課時已較願意參與討論和發表意見。

### 每課製片 教師工作量增

為落實新教學模式, Nina 除了預先準備供學生備課用的教學影片外, 更要每堂預備一個貼題的個案作研習, 及準備相關材料供學生討論, 上下課前

也要批改上堂的工作紙及小測, 工作量相應增加。中大教育心理學系講座教授侯傑泰說, 教師在推行初期要錄製教學影片及準備上課教材, 工作可能大增, 但日後只需專注預備與該科有關的課堂活動就可。

### 中六教師採「翻轉」逾半學生發問

香港真光中學教師夏志雄也「翻轉」中六的資訊及通訊科技科, 上載歷屆試題至內聯網, 再附以解釋相關概念的影片協助學生作答。上課時他預留大部分時間讓學生分組討論, 學生遇不明白即舉手, 由他解答, 逾半學生都有舉手發問。

Source:  
Ming Pao Daily, 7 October 2015  
[http://news.mingpao.com/pns/dailynews/web\\_tc/article/20151007/s00011/1444153560929](http://news.mingpao.com/pns/dailynews/web_tc/article/20151007/s00011/1444153560929)

Ming Pao Daily News 2015-10-07 A22 | 教育

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Traditional Classroom		Flipped Classroom	
Activity	Time	Activity	Time
Outside the Classroom (Notional learning time)			
Assignment	30-45 min	Watch lecture video	30-45 min
Class time			
Warm-up activity	5 min.	Warm-up activity	5 min.
Go over previous night's homework	20 min.	Q&A time on video	10 min.
Lecture new content	30-45 min.	Guided and independent practice and/or lab activity	75 min.
Guided and independent practice and/or lab activity	20-35 min.		

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## Key Considerations of Making Blended Learning Activities (MOOC)



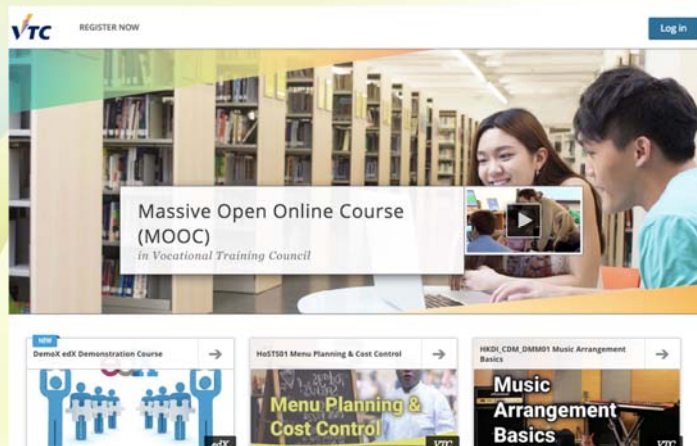
SlidePlayer.  
<http://slideplayer.com/slide/3148344/>

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Large Class + Demo + Precision

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# Massive Open Online Course (MOOC)



<https://mooc.vtc.edu.hk>

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## Goal

- Every student should have equal opportunity to learn in classroom

## Challenges

- 1 teacher VS many students
- Only those students sitting closely could see clearly

## Characteristic

- The best viewing position is from the teacher's perspective

## Mission

- Allow students to learn from teacher's viewing position live

## Solution

- Lecture Capture System/Wearable technology

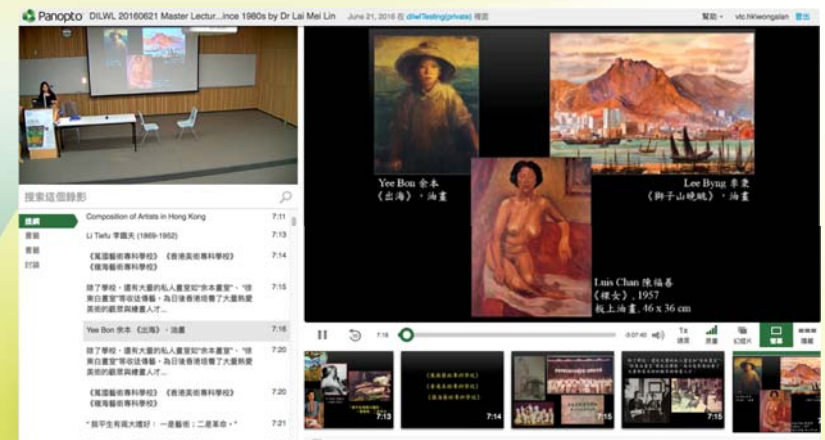
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# Chinese Culinary Institute (CCI)



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# Lecture Capture System



<https://panopto.vtc.edu.hk/Panopto/Pages/Default.aspx>

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# Abstract Concepts and Experiences that are Difficult to Illustrate

## Goal

- To better illustrate difficult concepts or 3D objects

## Challenges

- The real object is the best teaching tool for illustration but very expensive in some cases
- Only one or two real objects for each class
- Limited access to real objects

## Characteristic

- The learning content is difficult for illustration in 2D but better in 3D

## Mission

- Allow every student to have better access to the learning content

## Solution

- Augmented Reality/Virtual Reality



# Different TEL Approaches and Tools

Approach	Suggested Tool
Turn a passive lecture into an active learning	Classroom Response System (CRS)
Moving teaching content outside the classroom allows more class time to be spent on engaging learning activities such as peer instruction or active learning.	Flipped Classroom
Allow students to learn from teacher's viewing position	Lecture Capture System
Illustrate abstract concepts or experiences	Augmented Reality/Virtual Reality



# Thank You

Alan Wong  
Education Development Officer  
Centre for Learning and Teaching  
Vocational Training Council  
3974-3630  
wongalan@vtc.edu.hk

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