Implementation of E-learning Tools to Enhance Teaching and Learning: Motivating Students to be Active Learners

12th June 2018

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College Background

- Located at Yau Tsim Mong District
- Founded in year 2000
- Direct Subsidy School
- Co-educational School
- English as the Medium of Instruction
The use of IT in teaching & learning can...

- enhance classroom interactions
- motivate students to learn
- nurture students to become self-directed learners

Major Concern in our School Annual Plan
Information Technology for Interactive Learning

- Mobile technology
- E-learning platforms
- Flipped classrooms
We need...

**Hardware**
- Wifi system
- Apple TVs
- iPads

**E-learning tools/platforms**
- iClass
  - Apps, e.g. Popplet, ShowMe, Nearpod, Kahoot, Quizlet, Plickers
- E-learning platforms, e.g. e-builder, iLearner, OQB
IT support

IT Support Team

Training

Students’ needs

Flexible

IT Pioneers (Depts)

Subject nature

Teachers’ needs

Feedback
Staff Professional Development

Workshop for all teachers

Training for IT pioneers

Sharing among teachers
Flipped Classroom

**Traditional**

Lecture

Homework activities

**Flipped**

Lecture

Classroom activities
MDM for Flipped Classroom

iClass 互動學習

eClass

Google Classroom
Flipped Classroom

Introduction to Phototropism

Quiz Description

Watch the video in Youtube (https://www.youtube.com/watch?v=YVzQlOSXAds). Answer the questions and submit your answers. Pay attention to the video as there will be a quiz during the lesson as well.

Start the quiz

Remarks

Total number of questions in this quiz: 7
Time limit for this quiz: No Limit
Students can view the model answer scheme after submission: No
Flipped Classroom

This response is known as 'phototropism'

Introduction to Phototropism
Flipped Classroom

Introduction to Phototropism

1. This video is about

1M

A. phototropism
B. geotropism
C. hydrotropism
Preparation of Videos

Method 1 \ Using existing online materials

Pros: Fast and easy
Cons: Not 100% fit your need
Preparation of Videos

Method 2 \ Using videos from the publishers

**Pros:** Fast and easy

**Cons:** Cannot cover all topics you want to flipped
Preparation of Videos

Method 3 \ Making your own slideshow videos

**Pros:** Fit your need

**Cons:** Time-consuming, not very interesting
Preparation of Videos

Method 4 \ Making your own ‘paper-and-pen’ videos

**Pros:** Fit your need  **Cons:** The video will be long without editing
Preparation of Videos

Method 5 \ Making your own educational videos

**Pros:** Fit your need and much more interesting

**Cons:** Time-consuming and need some video-editing skills
Preparation of Videos

Method 6 \ Editing existing videos with your own elements

**Pros:** Fit your need, can be very interesting and less time-consuming

**Cons:** Need some video-editing skills
Two Extremes in Flipped Classroom

1. Online Lesson at Home → Repeat the Lesson in the Classroom

2. Online Lesson at Home → “Students have already learned at home! I should teach another topic!”
Flipped Classroom

**Traditional**
- Lecture
- Homework activities

**Flipped**
- Lecture
- Classroom activities
Bloom’s Taxonomy & Flipped Learning

kahoot!
Kahoot!

https://www.youtube.com/watch?v=PlXpKHH5kh0
Kahoot!

Ready to join?
Join at kahoot.it and enter the game PIN

88 Players

Play with the new Kahoot! app
Practical Tips for Kahoot Users (1)

Extra 5 seconds for discussion before answering questions
Compete with another class or compete with the teacher
Practical Tips for Kahoot Users

Scaffolding knowledge by setting appropriate questions in sequence.
Practical Tips for Kahoot Users

Using existing question bank to set-up kahoot

3. Which of the following statements about part P is/are correct?
   (1) It is made up of living cells.
   (2) It does not contain minerals.
   (3) It reduces friction between bones during movement.
   A. (1) only
   B. (2) only
   C. (1) and (3) only
   D. (2) and (3) only
6 REASONS TO START KAHOOT!ING
(yes, it’s a verb now!)

1. **It’s flexible**
   In a few minutes, you can create a learning game for all ages, any topic. Kahoot! is even played in gym classes!

2. **It’s simple**
   Kahoot! works on any device with an internet connection. For players, no account or login is required to join a game.

3. **It’s diverse**
   Starting a conversation or reinforcing knowledge, introducing new topics or encouraging teamwork, and more – there’s so many different ways to Kahoot!

4. **It’s engaging**
   Kahoot! fosters social learning, unlocks learners’ potential and deepens pedagogical impact.

5. **It’s global**
   You can connect and play in real time with other players in 180+ countries.

6. **It’s free**
   Creating learning games and playing Kahoot! in your classroom is free.
Please raise your hand if you...

1) know what plickers are.
2) have ever used plickers.

1) Respond by raising hands

low response rate?
hesitate to express view?
difficult to store data?
Unique plickers cards

Letter on top = answer

Correspond to the assigned student number
Why plickers?

• Motivate students to participate → more interactive

• Collect students’ real-time data
  ➢ check students’ understanding instantly
  ➢ provide feedback
  ➢ modify teaching accordingly
Why plickers? (cont’d)

• Fast and easy to prepare

scanning device x 1  +  plickers cards
General steps

1. Sign in (Google)

2. Click “Classes” → “Add new class”
General steps

3. Assign cards to students (max: 63)
General steps

4. Click "Library" → Create Qs (T/F or M.C.)
General steps

5. Click ”Add to Queue…” → Assign Qs to class (1 Q to multiple classes ; Image can be included)
General steps

6. Click “Live View” → pose Qs to students

Ch.19, P.50, Q11

11. Which of the following reaction routes can best be used to prepare barium sulphate from barium carbonate?

A. $\text{BaCO}_3(s) \xrightarrow{H_2SO_4(aq)} \text{BaSO}_4(s)$
B. $\text{BaCO}_3(s) \xrightarrow{\text{conc. } H_2SO_4} \text{BaSO}_4(s)$
C. $\text{BaCO}_3(s) \xrightarrow{HCl(aq)} \text{BaCl}_2(aq) \xrightarrow{H_2SO_4(aq)} \text{BaSO}_4(s)$
D. $\text{BaCO}_3(s) \xrightarrow{\text{conc. } HCl} \text{BaCl}_2(aq) \xrightarrow{\text{Na}_2SO_4(aq)} \text{BaSO}_4(s)$

(HKDSE 2013 Paper 1A Q8)
General steps

7. Scan responses and view results
Cards choices

• Paper form
• Laminated (more durable)
• Stick onto notebook (not necessarily to place “A” the top)
• Image saved on phone
• Keychain
• Buy online
Cards choices (cont’d)

• Normal or large font size
• Standard or large-sized
• Scanning distance: < 8 m for standard cards
  < 15 m for large cards
• Max no. of cards in a class: 63

Available @ https://www.plickers.com/cards
Let’s try!

Reminder: Do not cover the black part of the card
Alternative ways to pose Qs

• Visualizer and projector
• Board
• Verbal

Electron diagram of an ammonia molecule.

A). $\text{NH}_3$
B). $\text{H} - \text{N} - \text{H}$

C). $\text{H} \times \text{N} \times \text{H}$
D). $\left[ \text{H} \times \text{N} \times \text{H} \right]^+$
Assessment of learning (~ Kahoot!)

Similarities
• Easy to conduct
• Statistical reports can be generated.

<table>
<thead>
<tr>
<th>Plickers</th>
<th>Kahoot!</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Able to change answer</td>
<td>• Credit to fast and correct answer</td>
</tr>
<tr>
<td>• Low network requirement</td>
<td>• High network requirement</td>
</tr>
<tr>
<td>• Fewer players supported</td>
<td>• More players supported</td>
</tr>
<tr>
<td>• Can be done outside the classroom (e.g. fieldtrip)</td>
<td>• Interactive function cannot be done outside classroom</td>
</tr>
<tr>
<td>• Students may need to use different sets of cards in different lessons</td>
<td>• Students do not need to keep any cards.</td>
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</tbody>
</table>
Assessment for learning

Ask questions and let students poll → Get instant feedback → Modify teaching accordingly
Tips

• Prepare some polling questions for each class
• Prepare a set of spare cards
Implementation of flipped classroom and e-learning tools

- enhance classroom interactions
- motivate students to learn
- nurture students to become self-directed learners