資訊科技教育 教學法系列：
在小學有效運用流動電腦裝置進行電子學習
EI0020180442
第二節

香港中文大學 學習科學與科技中心 (CLST)

Centre for Learning Sciences and Technologies (CLST)
The Chinese University of Hong Kong

資訊科技教育 教學法系列：
在中學有效運用流動電腦裝置進行電子學習
EI0020180442

SECTION 2

- 步驟一： 將你手機連接 WIFI NETWORK

- 步驟二：下載 **HP Reveal** APP

- 步驟三：下載 QRCODE READER APP
  例如： QR Code Reader from Kaywa

小學 AA 班

第一節：
日期： 2019/01/23 (星期三)
時間： 18:30 - 21:30
地點： 香港中文大學崇基校園信和樓614

第二節：
日期： 2019/01/30 (星期三)
時間： 18:30 - 21:30
地點： 香港中文大學崇基校園信和樓614

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課程目標：

本課程旨在介紹基本的電子學習應用程式和其功能，以有效運用流動電腦裝置進行電子學習。

活動詳情：

1. 概述常用的流動電腦裝置
2. 了解流動電腦裝置用於學與教的基本操作
3. 用戶身份驗證和帳戶管理
4. 運用EdPuzzle進行翻轉課室
5. 運用Google Classroom促進電子學習
6. 運用HP Reveal通過擴增實境 (AR) 增強課堂體驗
7. 運用EduVenture VR進行探究式學習

Objectives:

This course aims at：

equipping teachers with the necessary knowledge and skills in the effective and smooth operations of mobile computer devices in lessons by introducing the essential applications and functions for e-learning.

This course enables participants to:

(a) understand the types of popular mobile computer devices by operating systems (e.g. iOS, Android and Windows)

(b) understand the operations of the built-in functions of mobile computer devices in lessons, e.g. searching and opening an app, connecting to WiFi access point / hotspot, screen mirroring to TV / projector, screen capturing and recording, etc

(c) understand the major differences of applications with and without student accounts and understand the use of single sign-on (SSO)

(d) understand the operation of simple applications to conduct e-Learning activities without student accounts e.g Plickers, Kahoot and Quizizz (instant response and assessment), Poll Everywhere (polling and brain-storming);

This course enables participants to:

(e) understand the operation of applications with student accounts, e.g Quizlet (online quiz), Coggle (mind mapping), Class Dojo (classroom community);

(f) understand the features of some other applications / platforms for specific purposes, e.g Google Drive and related applications (online collaboration), HP Reveal (augmented reality), EdPuzzle (flipped video) and Google Classroom (integrated learning management system);

(g) design and create simple e-Learning activities using the e-learning applications for specific learning objectives, e.g to enhance students' learning motivation and engagement, to conduct assessment and provide instant feedback, to enhance class interactions, to promote collaborative learning and to facilitate students to master abstract concepts

Session 1

1. Overview of Mainstream Mobile Computer Devices
2. Understanding Basic Operations of Mobile Computer Devices for Learning and Teaching
3. Using Google Classroom to Facilitate e-Learning
4. Conclusion and Discussion of Course Assignment

Session 2

1. Assignments Feedback
2. User Authentication and Account Management
3. Using EdPuzzle for Flipped Classroom Learning
4. Using HP Reveal to Enhance Classroom Experience
5. Using EduVenture® X and EduVenture® VR in Inquiry-based Learning
6. Conclusion and Discussion

1. Assignments Feedback

2. User Authentication and Account Management
用戶身份驗證和帳戶管理

用戶身份驗證和帳戶管理

用戶身份驗證和帳戶管理

Current Authentication

Authenticate to multiple systems with Many username and Many password

用戶身份驗證和帳戶管理

Single Sign On

One Credential
Authenticate to multiple systems with one username and one password

用戶身份驗證和帳戶管理

香港教育城 HKedCity

https://www.hkedcity.net/home/

用戶身份驗證和帳戶管理

香港教育城 HKedCity

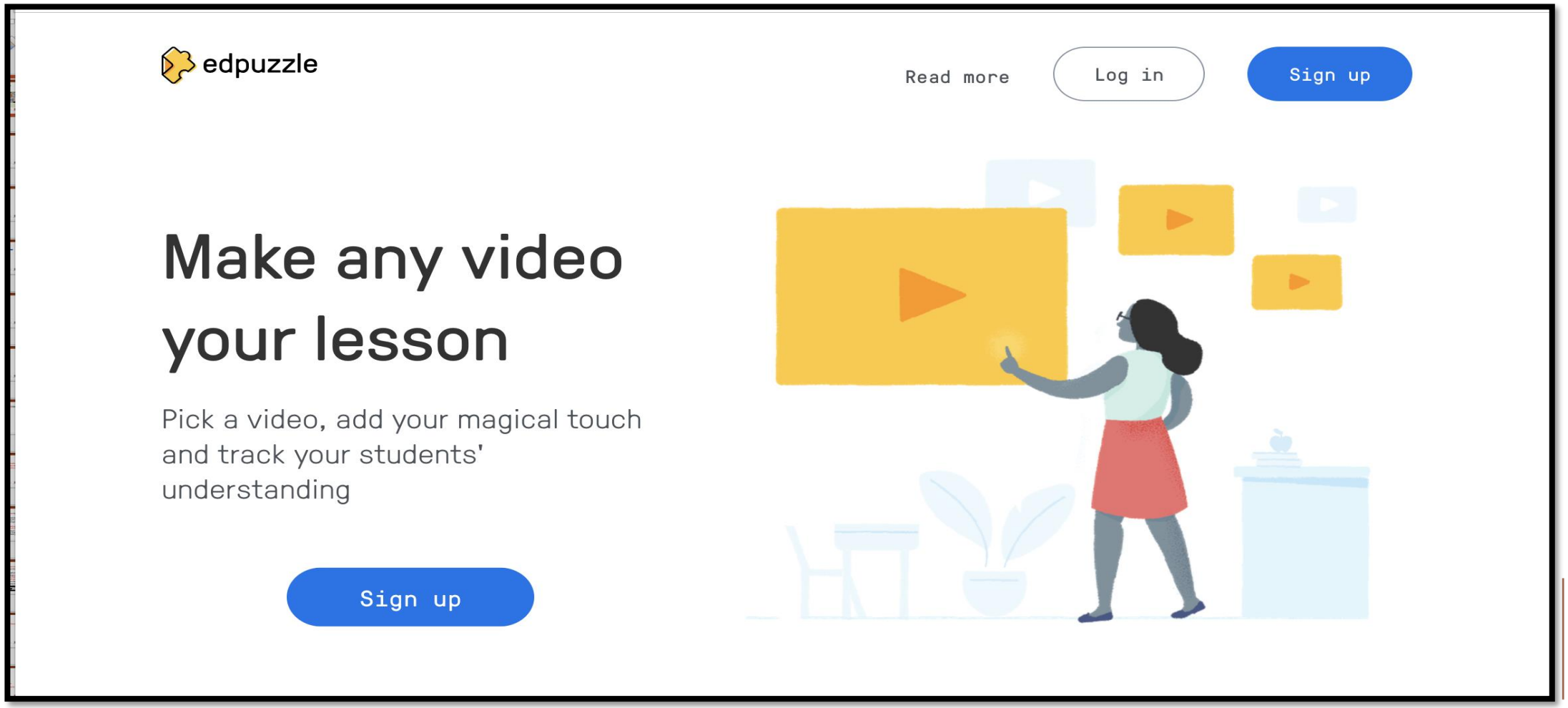
https://www.hkedcity.net/home/

rning Sciences and Technologies (CLST)
The Chinese University of Hong Kong

3. 運用EdPuzzle進行翻轉課室

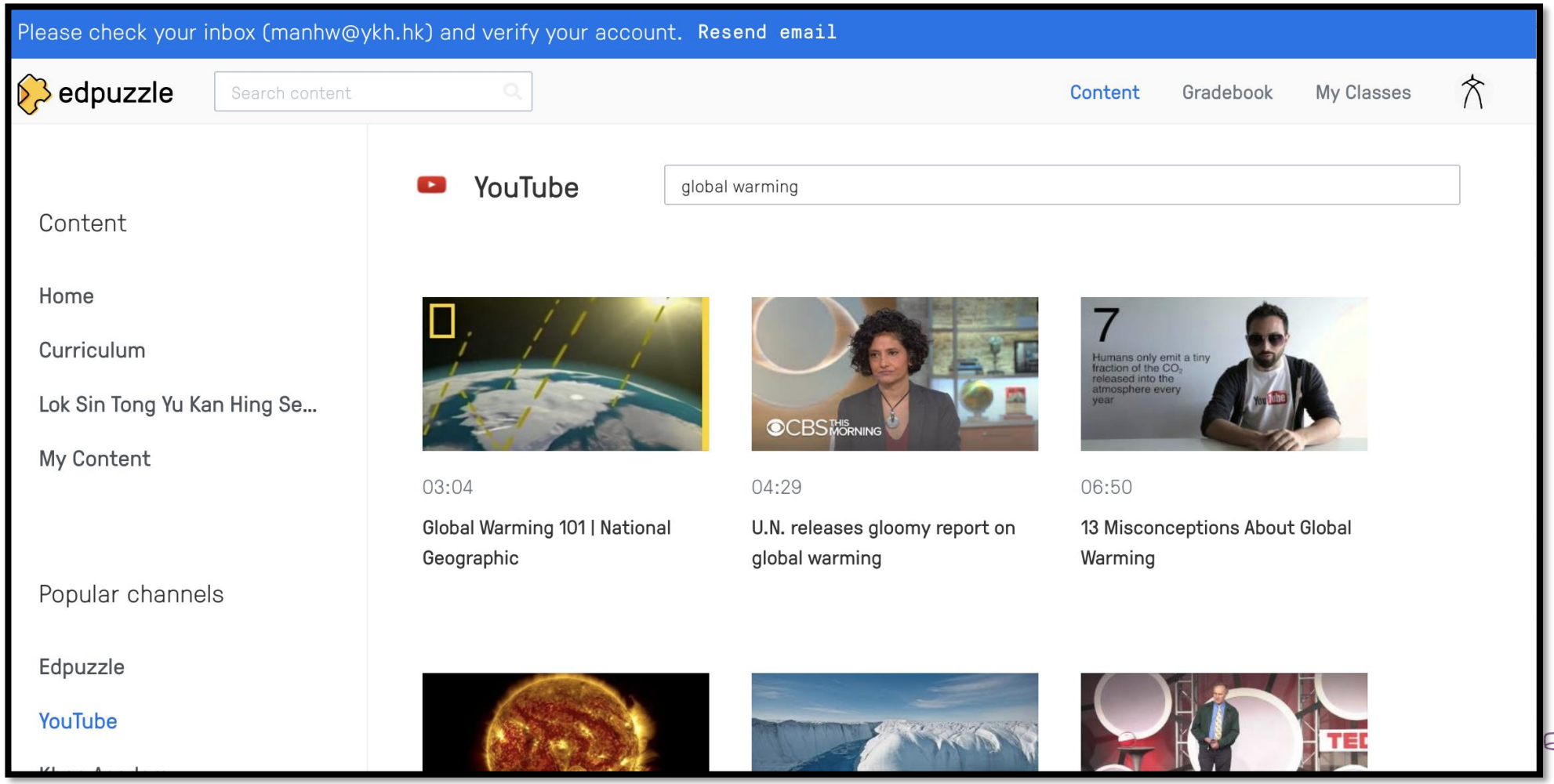
運用EdPuzzle進行翻轉課室

https://edpuzzle.com/



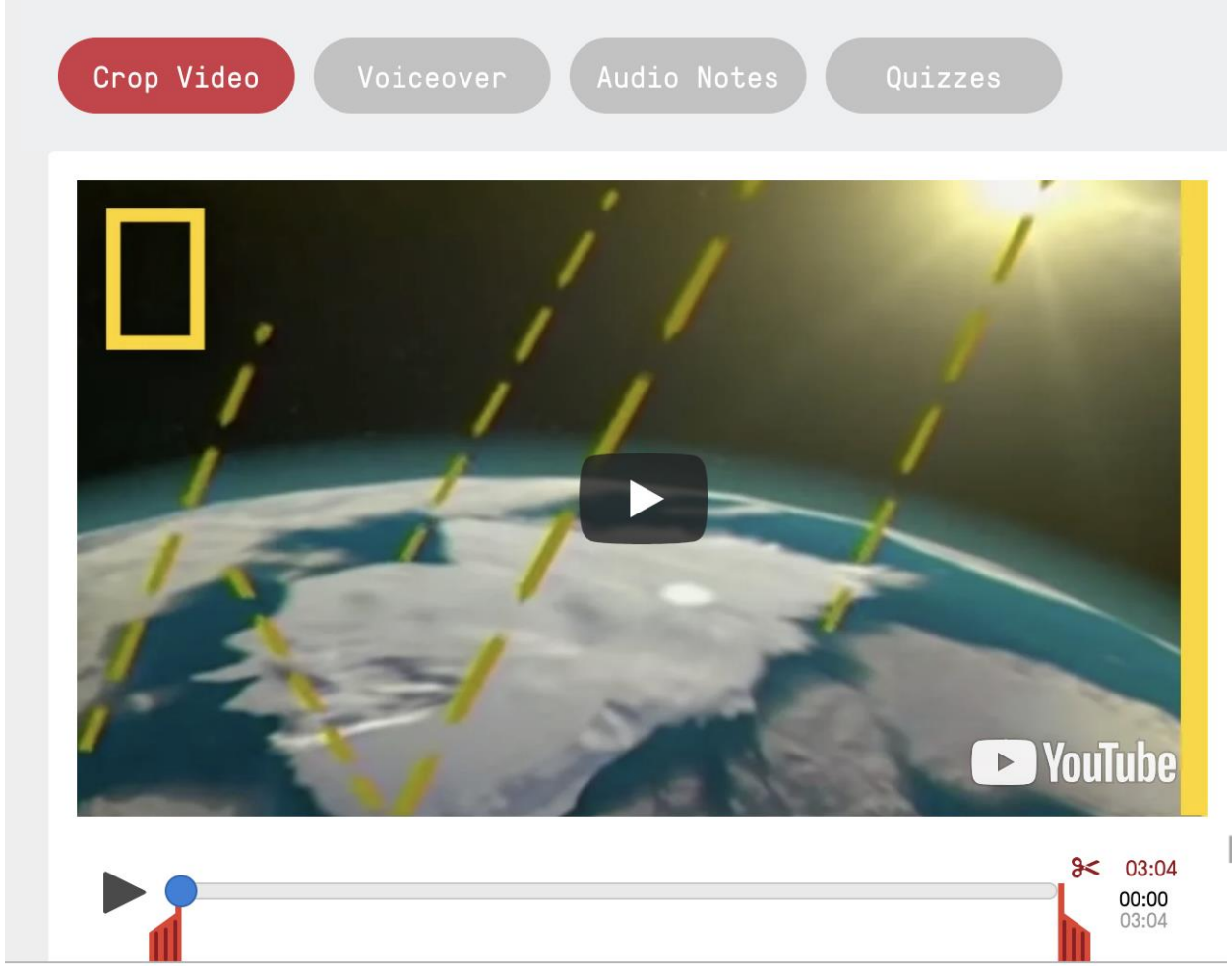
運用EdPuzzle進行翻轉課室

https://edpuzzle.com/



運用EdPuzzle進行翻轉課室

https://edpuzzle.com/



Why crop a video?

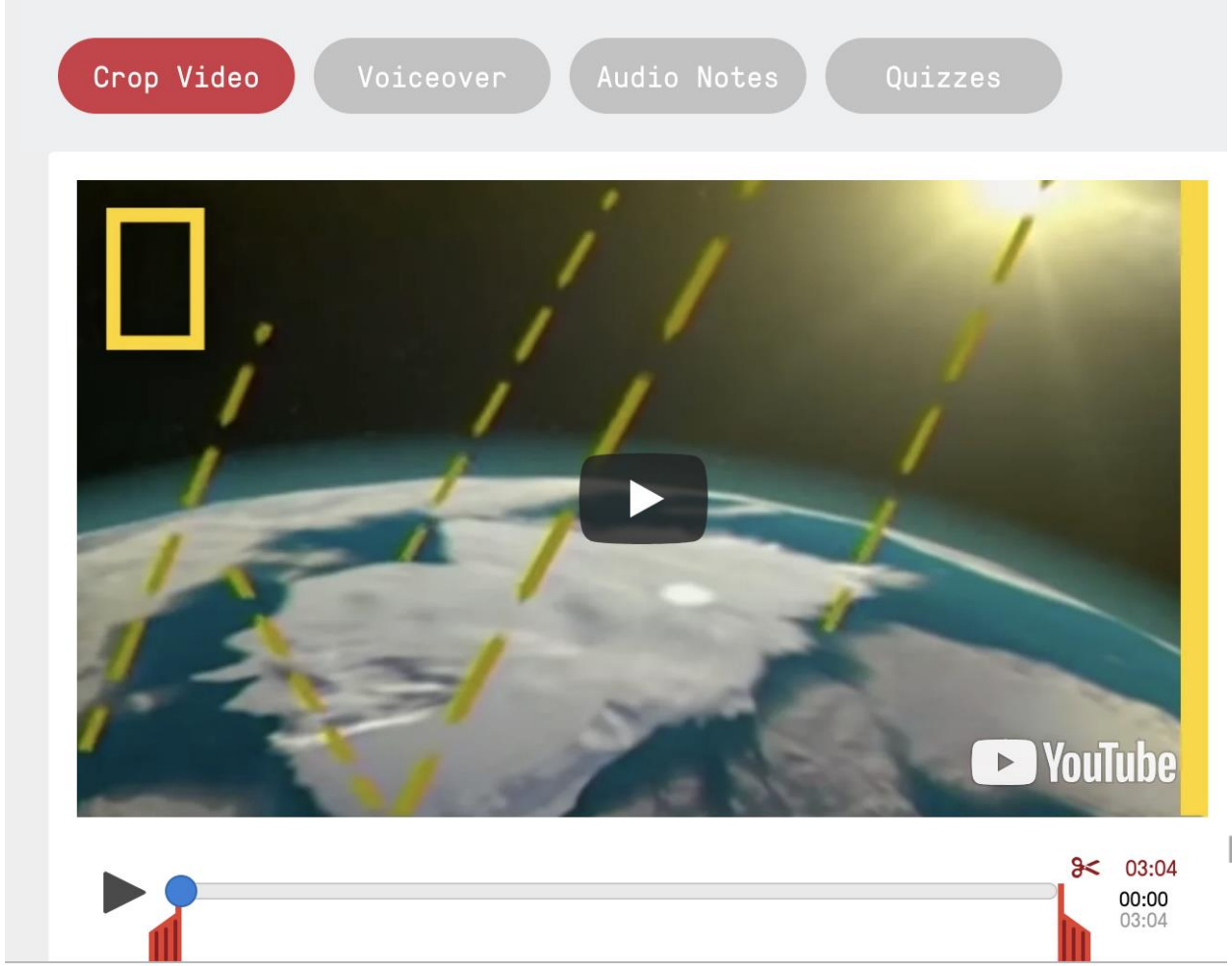
Save yourself and your students' time - crop a video down to just the important stuff.

Why record voiceover?

Explain a concept the way you would in class - in your own style or maybe in another language.

運用EdPuzzle進行翻轉課室

https://edpuzzle.com/



Why record audio notes?

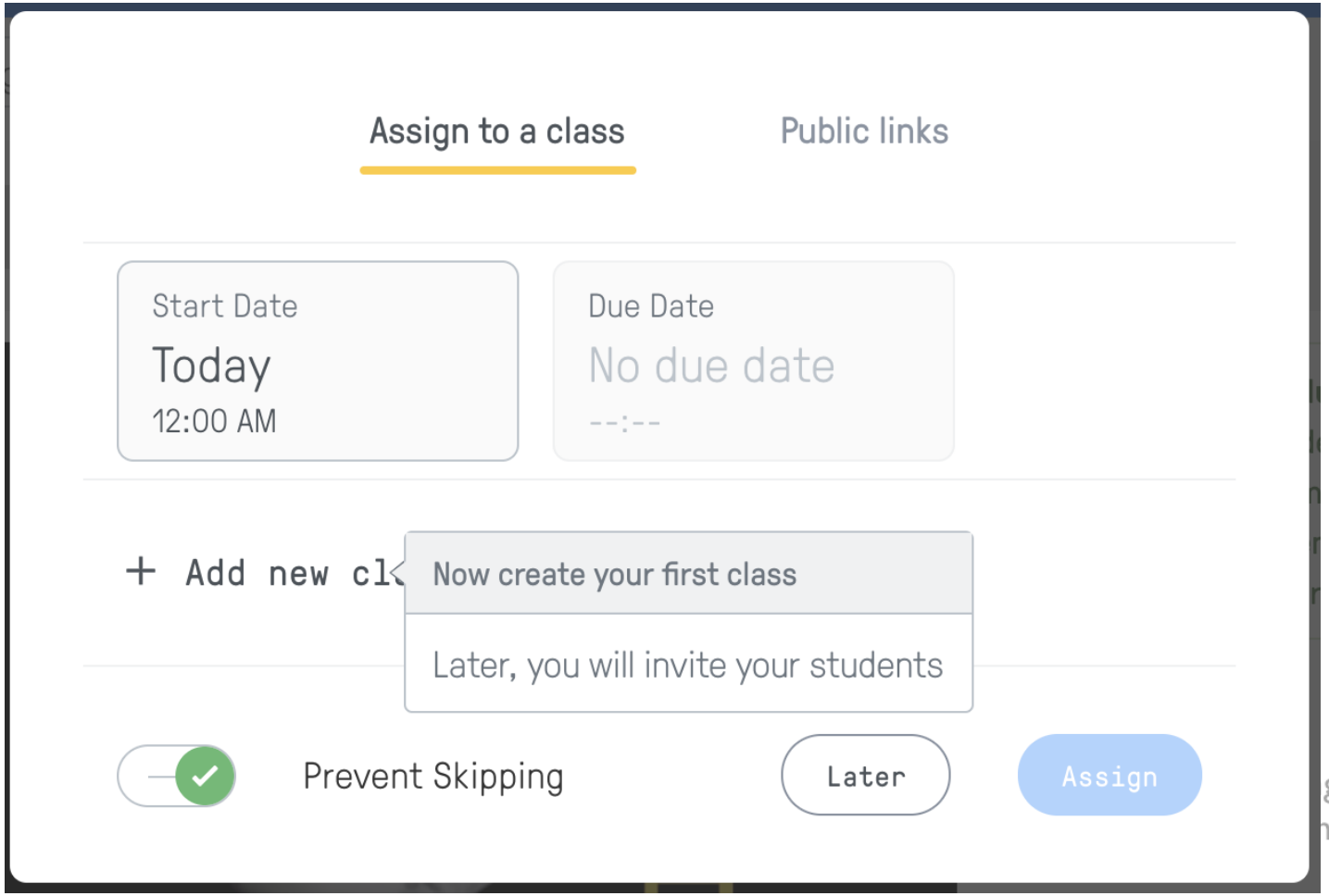
Get your students' attention - pause the video for an introductory comment, to explain a concept in more detail, or just to make sure they're not sleeping.

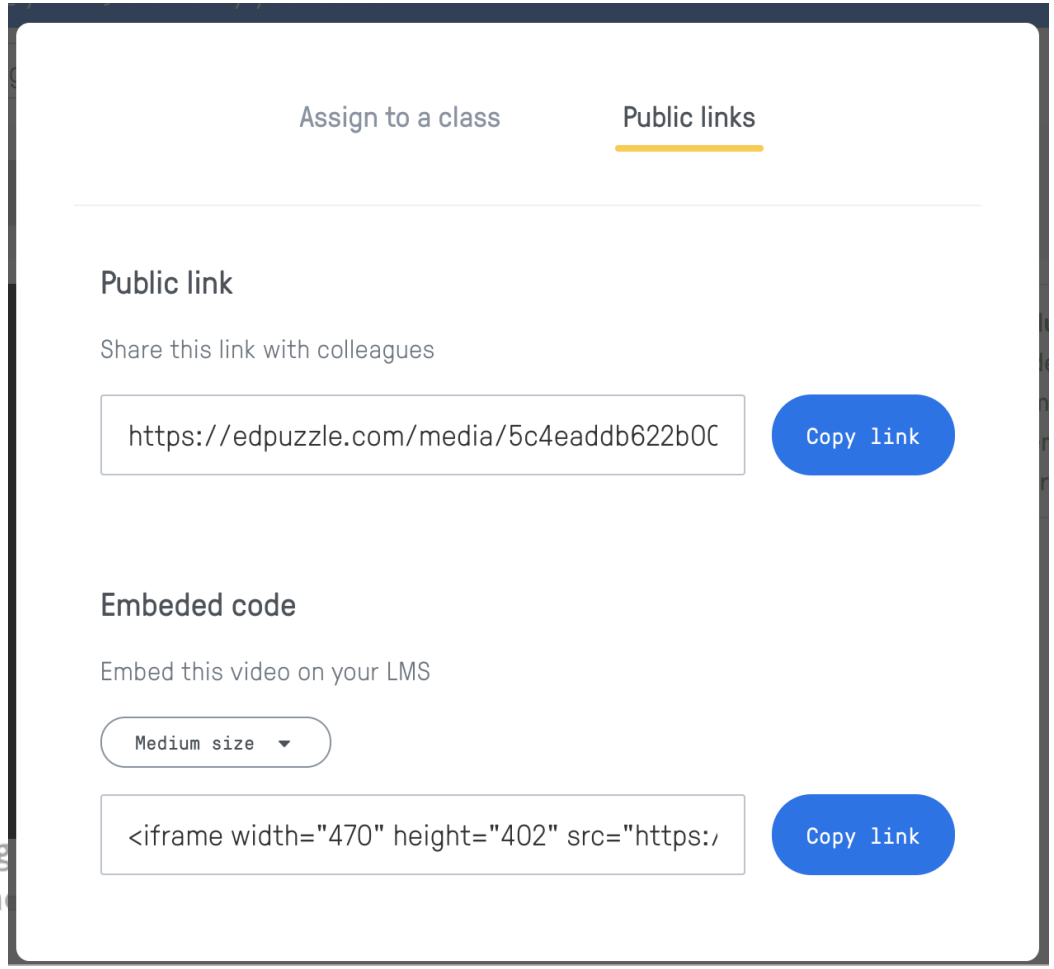
Why add quizzes during the video?

Make sure they understand - include formative assessment to check for student comprehension and review results in Gradebook.

運用EdPuzzle進行翻轉課室

https://edpuzzle.com/

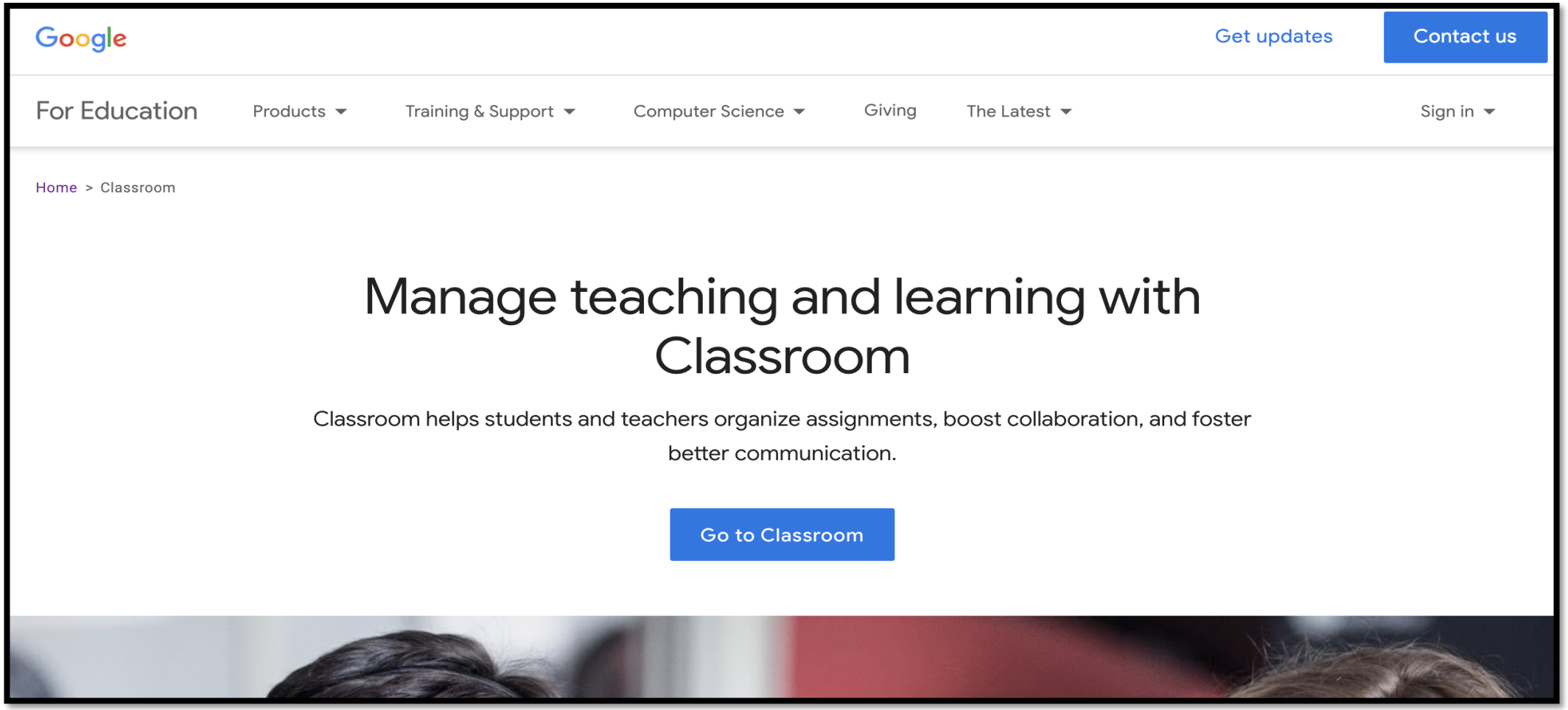




4. 運用Google Classroom促進電子學習

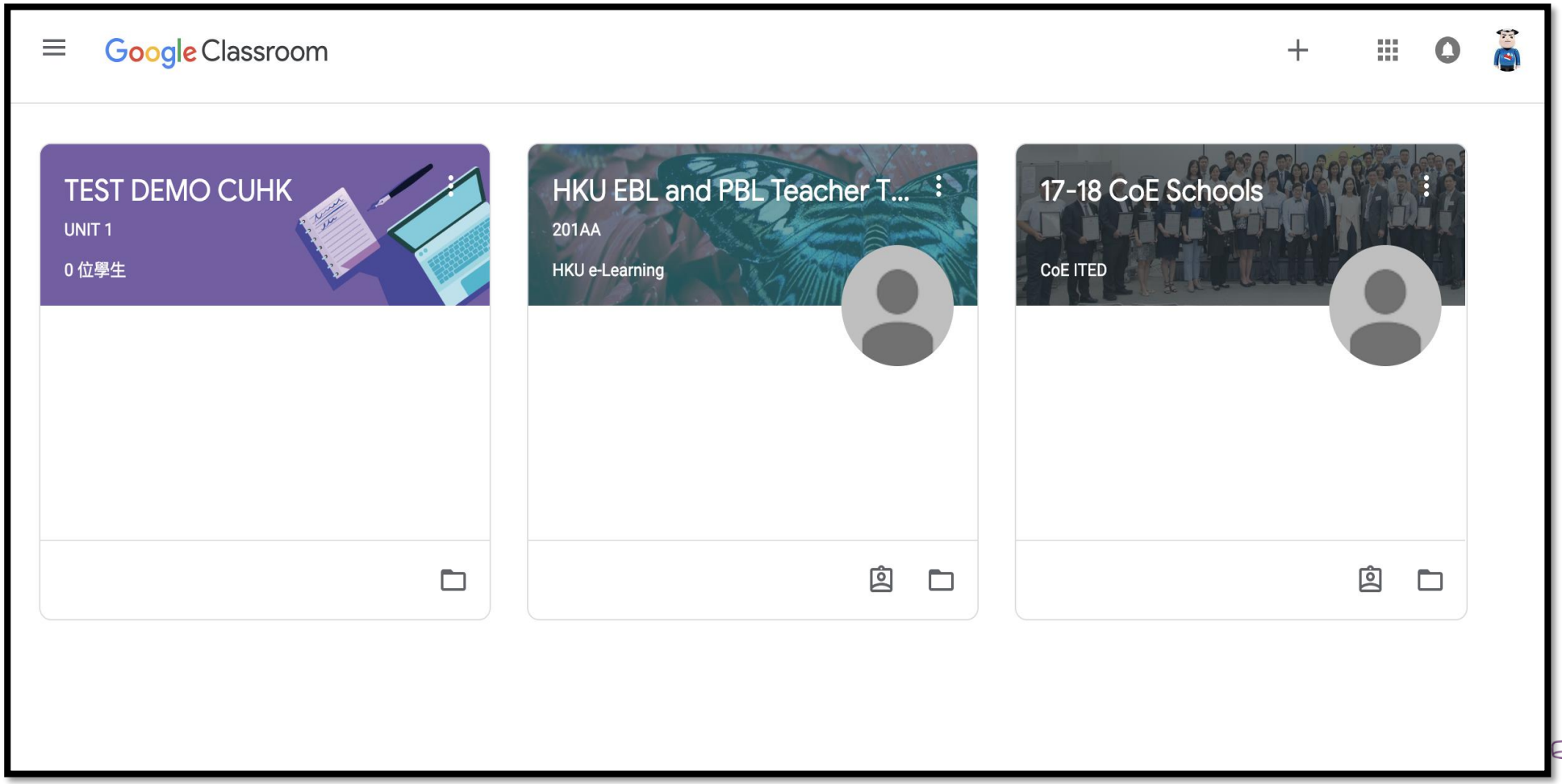
運用Google Classroom促進電子學習

https://classroom.google.com/



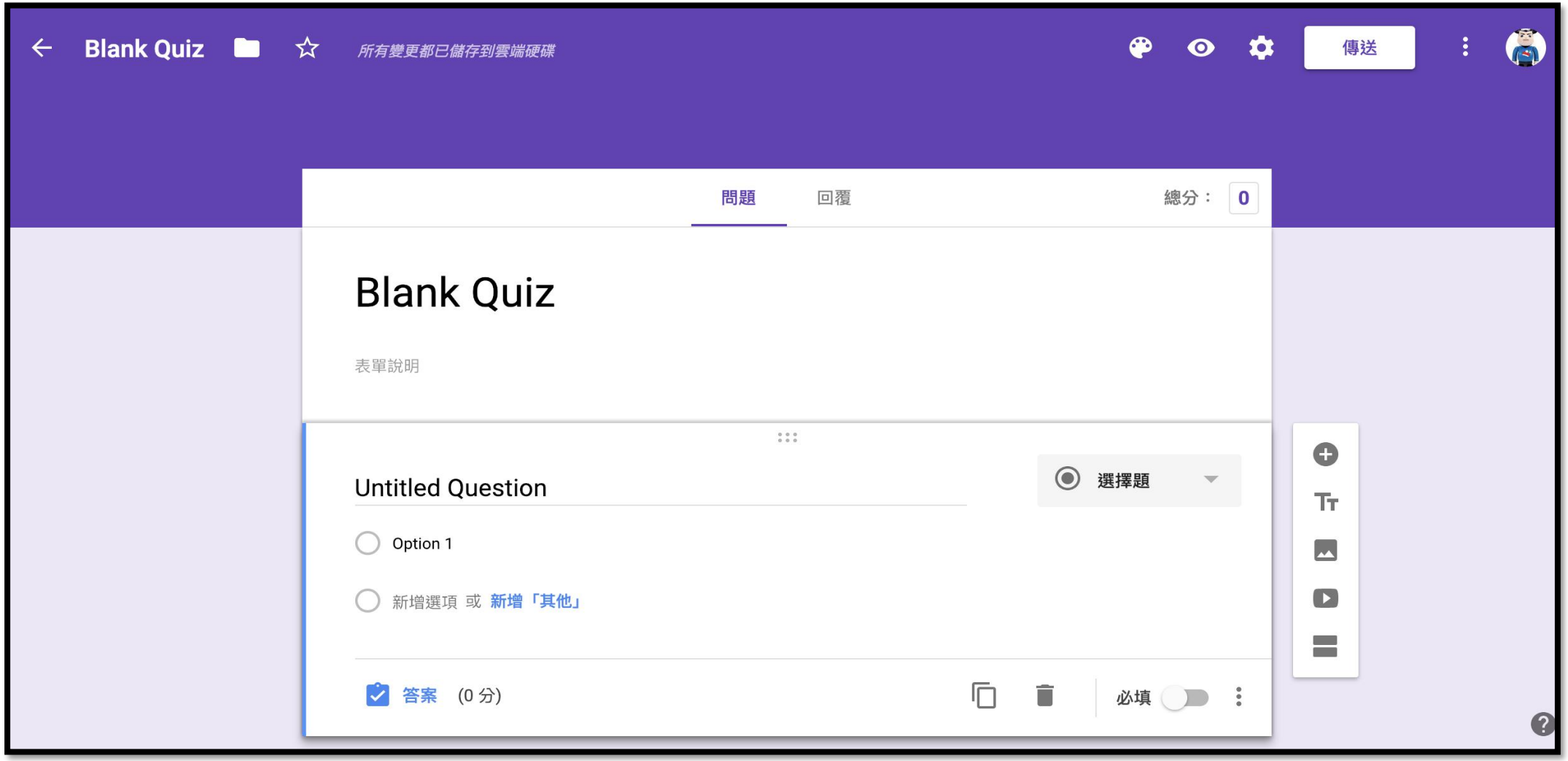
運用Google Classroom促進電子學習

https://classroom.google.com/



運用Google Classroom促進電子學習

Quiz： Google Form



運用Google Classroom促進電子學習

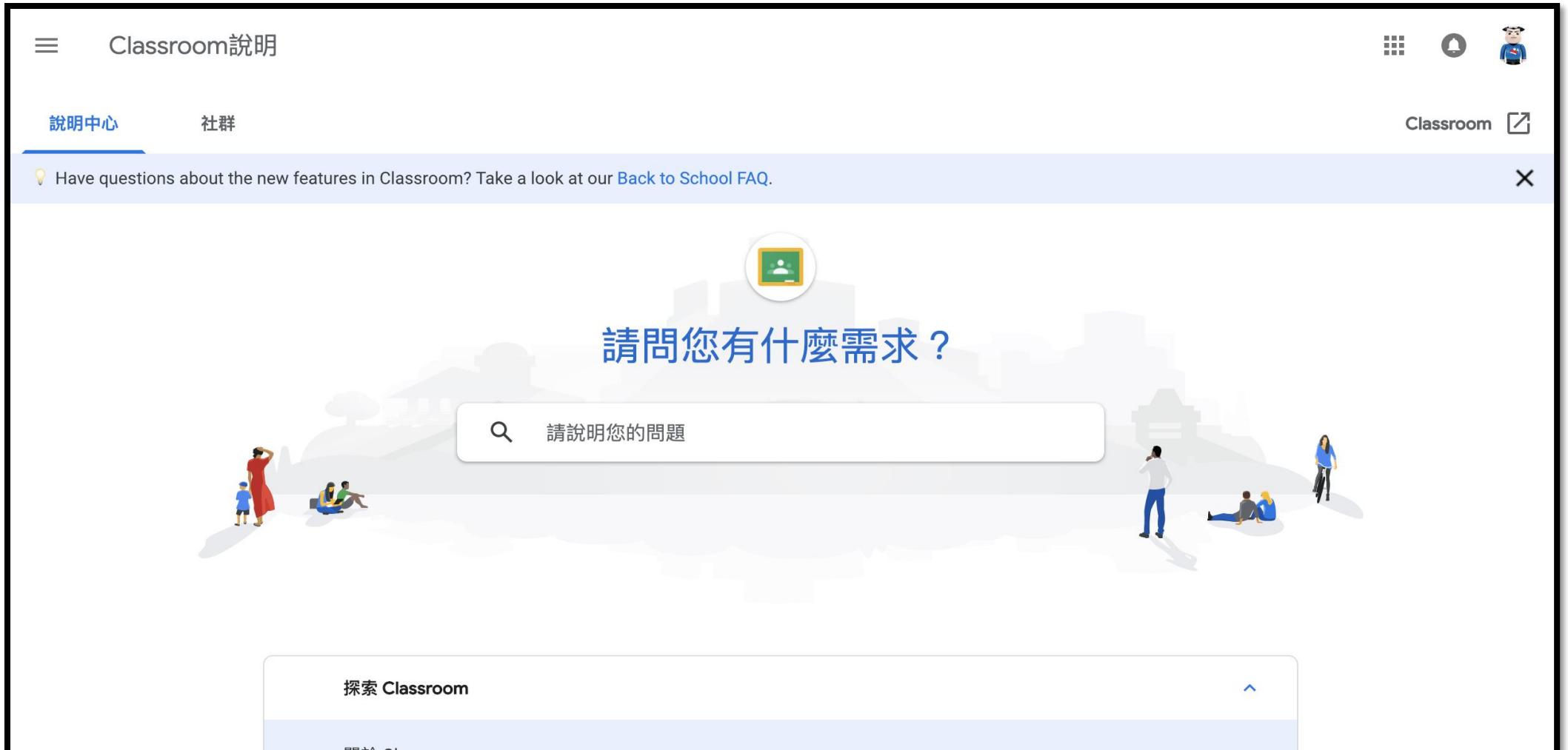
- Google Drive
  https://www.google.com/drive/

- Google Docs
  https://www.google.com/docs/about/

- Google Forms
  https://www.google.com/forms/about/

運用Google Classroom促進電子學習

https://support.google.com/edu/classroom#topic=6020277



5. 運用HP Reveal通過擴增實境 (AR) 增強課堂體驗

https://www.hpreveal.com/

擴增實境（Augmented Reality）

擴增實境（Augmented Reality）

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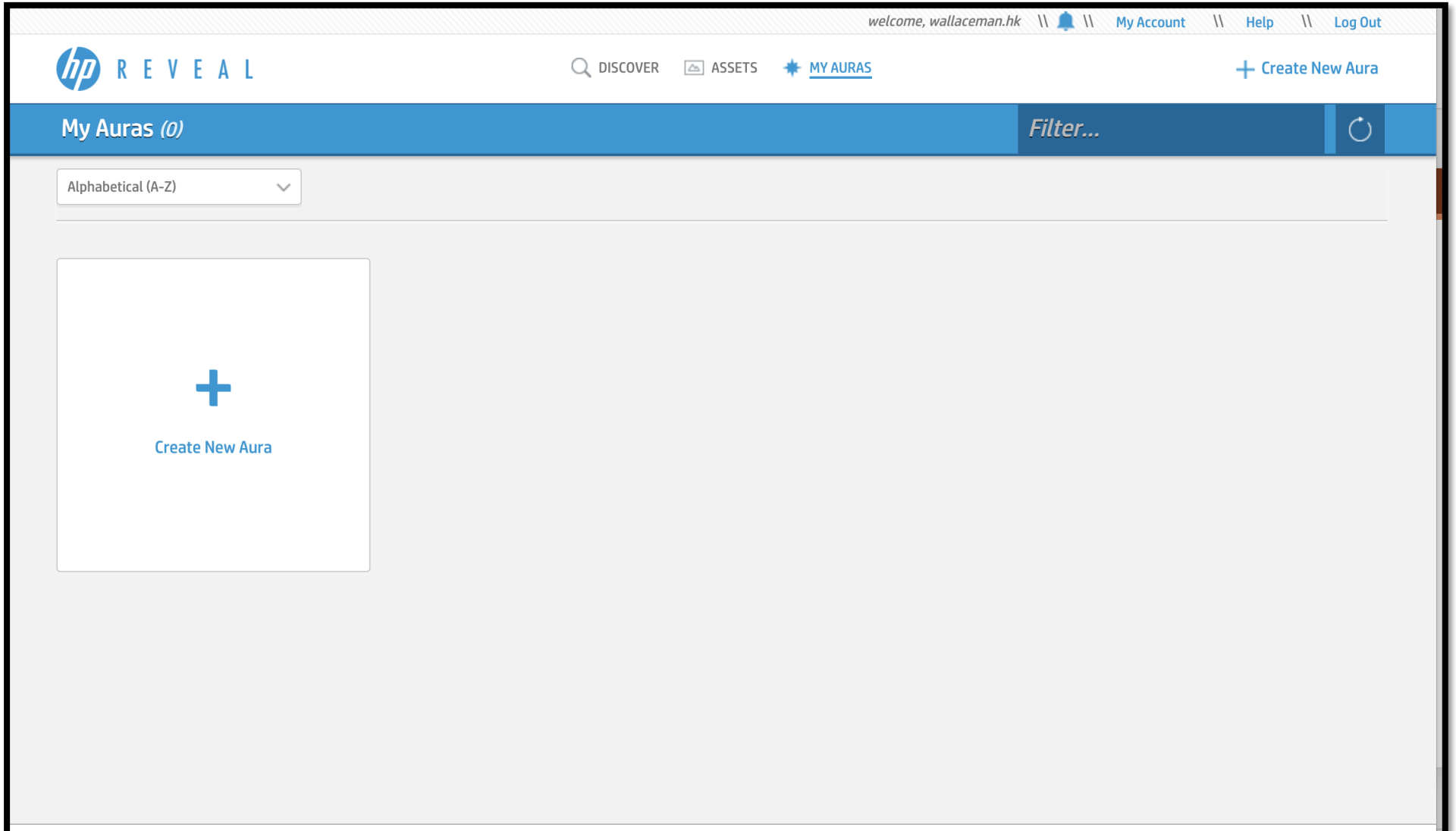
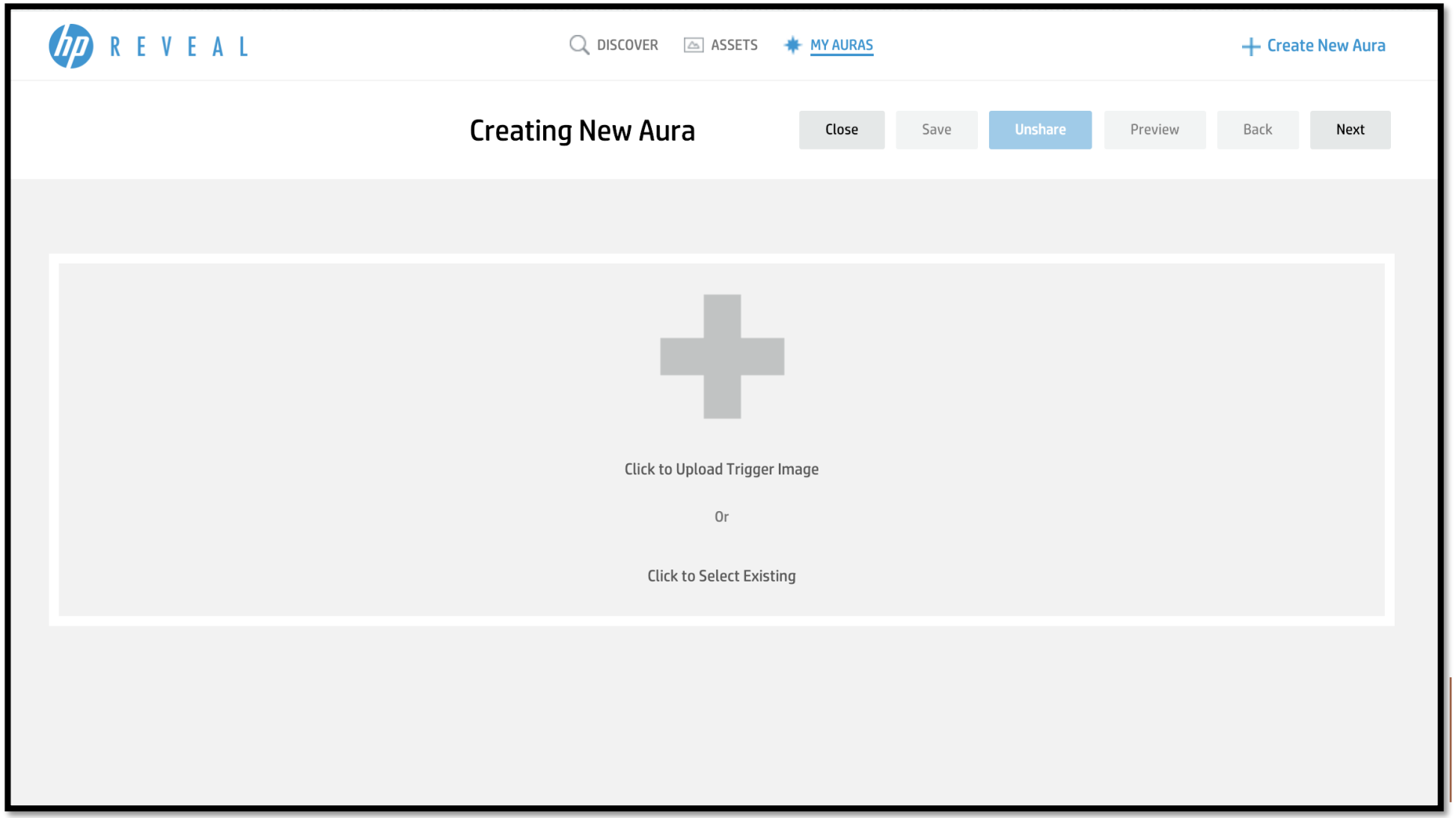


擴增實境（Augmented Reality）



運用Google Applications 促進 VR 電子學習

- Google Maps
  https://www.google.com/maps
- Google Earth
  https://www.google.com/intl/zh-HK/earth/
- Google Street View
  https://www.google.com/streetview/

3. 運用Google Applications 促進 VR 電子學習

- Google Art and Culture
  https://artsandculture.google.com/

Google Expeditions

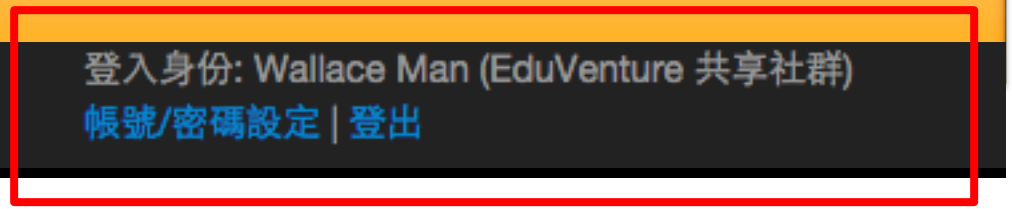
- Google Expedition
  https://edu.google.com/products/vr-ar/expeditions/

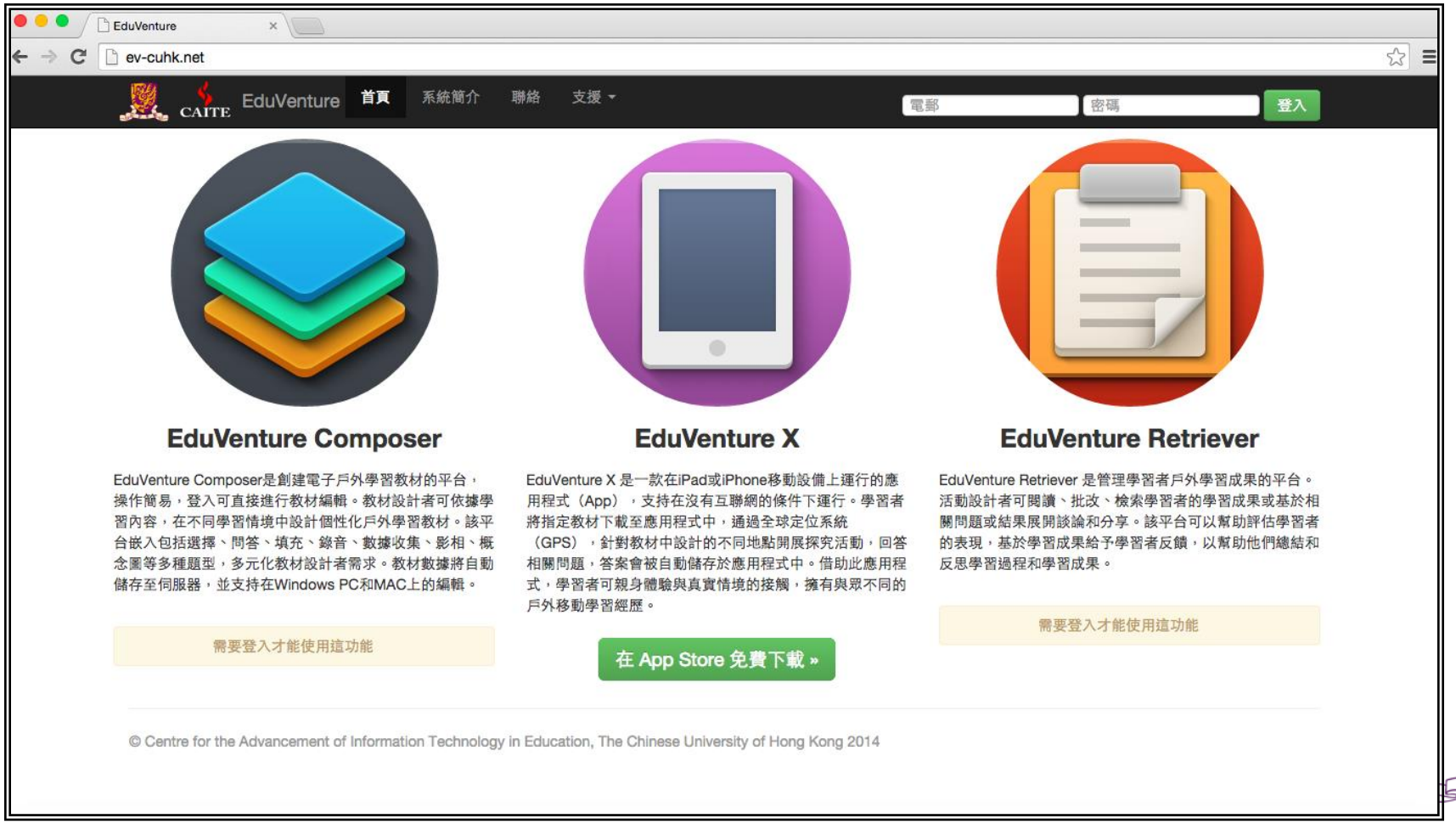
6. 運用EduVenture & EduVenture VR進行探究式學習

(A) 認識 Eduventure 基本操作介面

步驟一：登入編寫教件系統

http://ev-cuhk.net/





步驟二：登入編寫教件系統

編寫教件 | 進行活動 | 活動檢討

EduVenture Composer

EduVenture Composer是創建電子戶外學習教材的平台，操作簡易，登入可直接進行教材編輯。教材設計者可依據學習內容，在不同學習情境中設計個性化戶外學習教材。該平台嵌入包括選擇、問答、填充、錄音、數據收集、影相、概念圖等多種題型，多元化教材設計者需求。教材數據將自動儲存至伺服器，並支持在Windows PC和MAC上的編輯。

進入 EduVenture Composer »

EduVenture X

duVenture X 是一款在iPad或iPhone移動設備上運行的應用程式（App），支持在沒有互聯網的條件下運行。學習者將指定教材下載至應用程式中，通過全球定位系統（GPS），針對教材中設計的不同地點開展探究活動，回答相關問題，答案會被自動儲存於應用程式中。借助此應用程式，學習者可親身體驗與真實情境的接觸，擁有與眾不同的戶外移動學習經歷。

在 App Store 免費下載 »

EduVenture Retriever

duVenture Retriever 是管理學習者戶外學習成果的平台。動設計者可閱讀、批改、檢索學習者的學習成果或基於相問題或結果展開談論和分享。該平台可以幫助評估學習者表現，基於學習成果給予學習者反饋，以幫助他們總結和思學習過程和學習成果。

進入 EduVenture Retriever »

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步驟三：登入編寫教件系統

編寫教件

EduVenture Composer

EduVenture Composer是創建電子戶外學習教材的平台，操作簡易，登入可直接進行教材編輯。教材設計者可依據學習內容，在不同學習情境中設計個性化戶外學習教材。該平台嵌入包括選擇、問答、填充、錄音、數據收集、影相、概念圖等多種題型，多元化教材設計者需求。教材數據將自動儲存至伺服器，並支持在Windows PC和MAC上的編輯。

進入 EduVenture Composer »

步驟四：認識編寫教件系統工作環境

步驟五：創建新考察教件

1 輸入考察名稱

2 輸入考察描述

3 選擇考察語言/共享/顏色

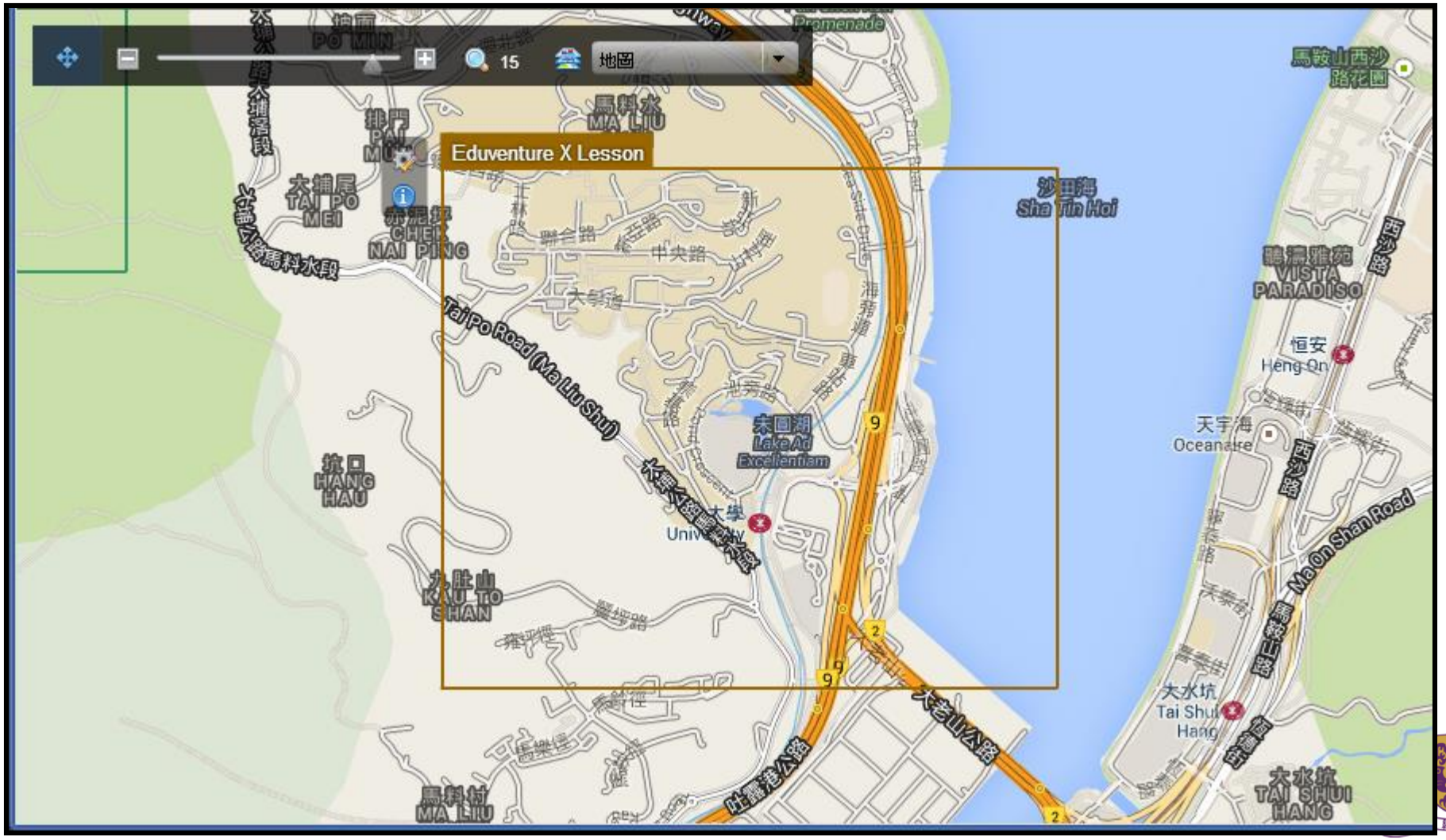
4 選擇考察範圍

5 上載考察封面圖片

6 選擇考察是否發佈

7 選擇考察所屬 KLA/ 學科

步驟六：設定考察範圍



15
地圖
Eduventure X Lesson
Promenade
馬料水
MA LIU
排門
PAI MUN
大埔尾
TAI PO MEI
赤泥坪
CHEK NAI PING
沙田海
Sha Tin Hoi
Tai Po Road (Ma Liu Shui)
大學
University
坑口
HANG HAU
九肚山
KAU TO SHAN
馬料村
MA LIU
大老山公路
吐露港公路
馬鞍山西沙路花園
聽濤雅苑
VISTA PARADISO
恒安
Heng On
天宇海
Oceanaire
Ma On Shan Road
大水坑
Tai Shui Hang
大水坑
TAI SHUI HANG

步驟七：加入熱點 及 編輯熱點 及 加入題目

步驟八：加入熱點

1 加入熱點

步驟九：編輯熱點

2 輸入熱點位置

3 選手熱點顏色

4 輸入熱點問題

步驟十：編輯熱點 題目題型

5 選擇熱點問題題型

(B) . EduVenture VR

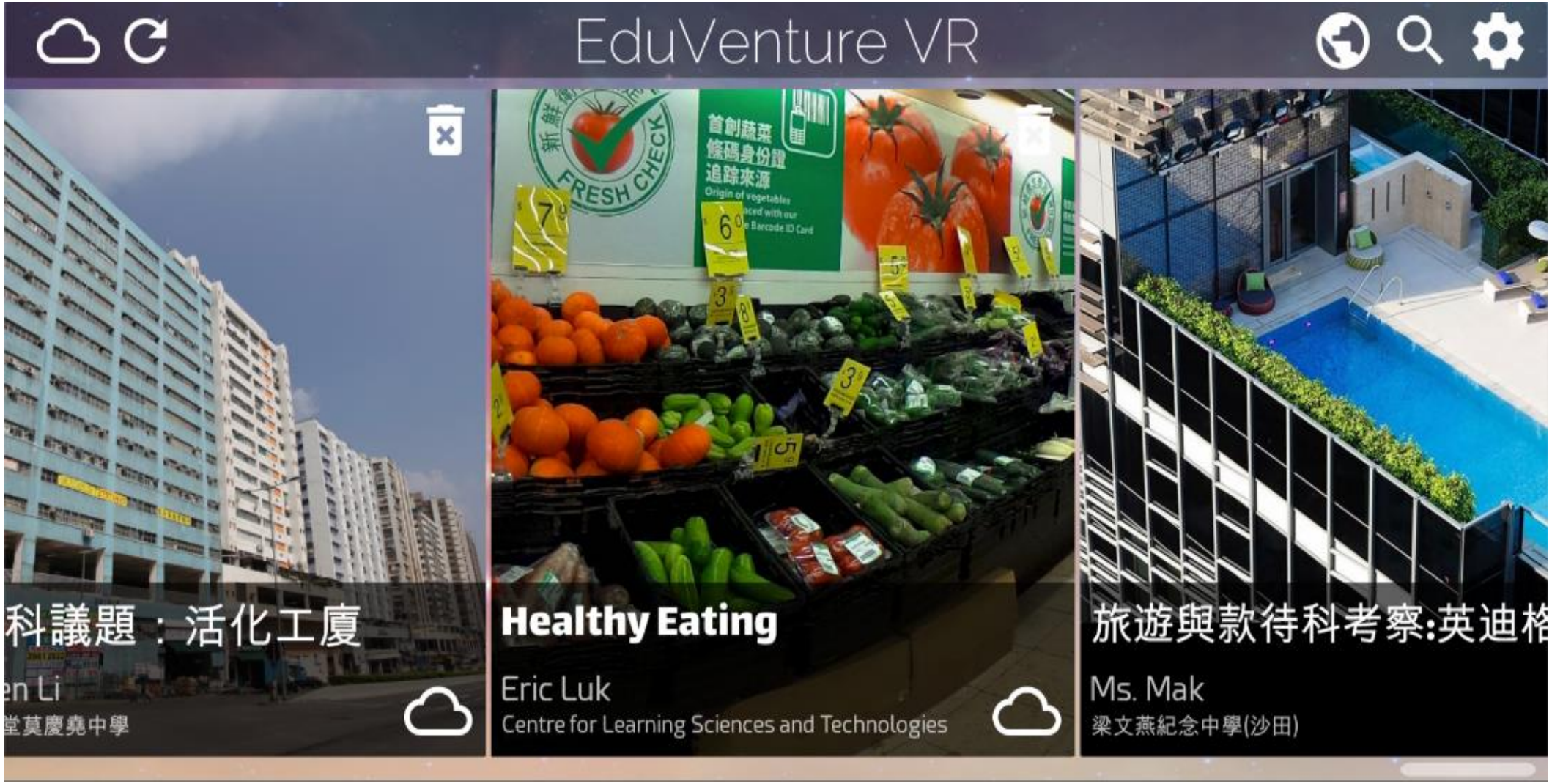
- EduVenture VR (EVVR) is an online platform to carry out Virtual Reality (VR) learning. Using the EVVR composer, teachers can distribute VR content and construct a VR field trip for students.

- They can also add interactive elements inside to enhance students' learning motivation. With mobile devices and tray glasses on hand, students can experience outdoor learning in VR style, which makes teaching and learning more interesting and flexible.

EduVenture VR

- EduVenture VR (EVVR), developed by CLST, CUHK, adopts Virtual Reality (VR) to carry out teaching and learning. VR technology generates a 3D virtual world and simulates student' s presence in the environment.
- Students can have better chances to explore the world using VR technology. http://vr.ev-cuhk.net/.

EduVenture VR



Entering EduVenture VR

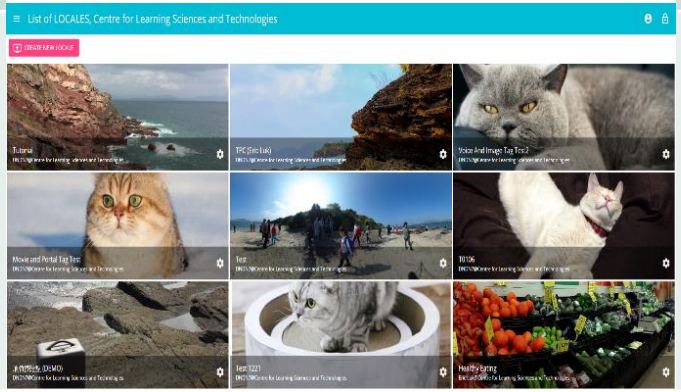
Open the browser and enter the URL: http://vr.ev-cuhk.net

Step	Procedures	User Interface
1	Press the button to enter the EVVR Composer	
2	Go to iTunes (iOS) / Play Store (Android) to download the EVVR App	

EduVenture VR Composer

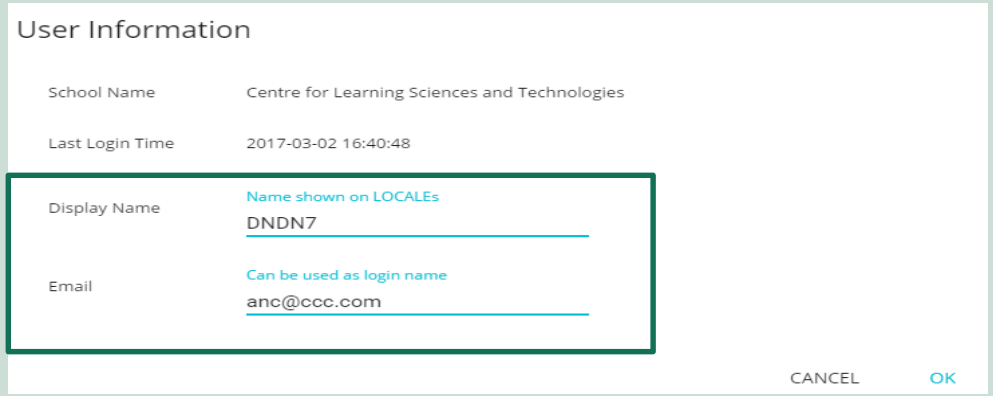
Using the EVVR Composer, teachers can distribute VR content and create their own teaching materials.

In order to identify the owner of the VR content, teachers will be given a username and password to login.

Step	Procedures	User Interface
1	Input username and password, then press "OK" .	
2	Upon successful login, teachers should be able to see a list of VR contents in the main menu.	

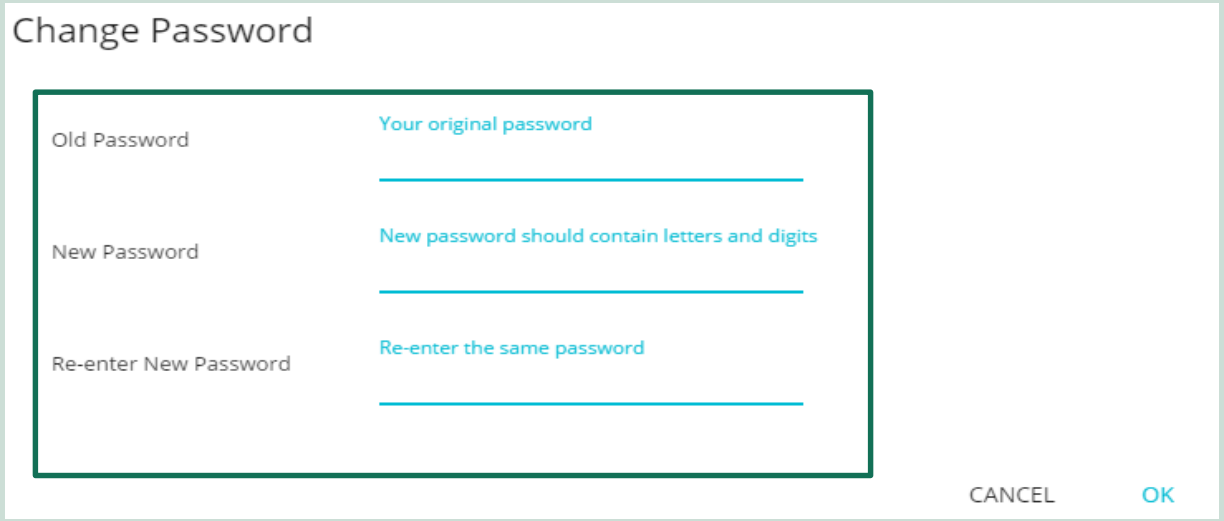
Control Panel

How to Edit User Account Information

Step	Procedures
1	Press at the top, then select “My Info” (name and email).
2	Input the new name, email or password, then press “OK”.
3	Press “Cancel” to discard everything and return to main menu.
UI	

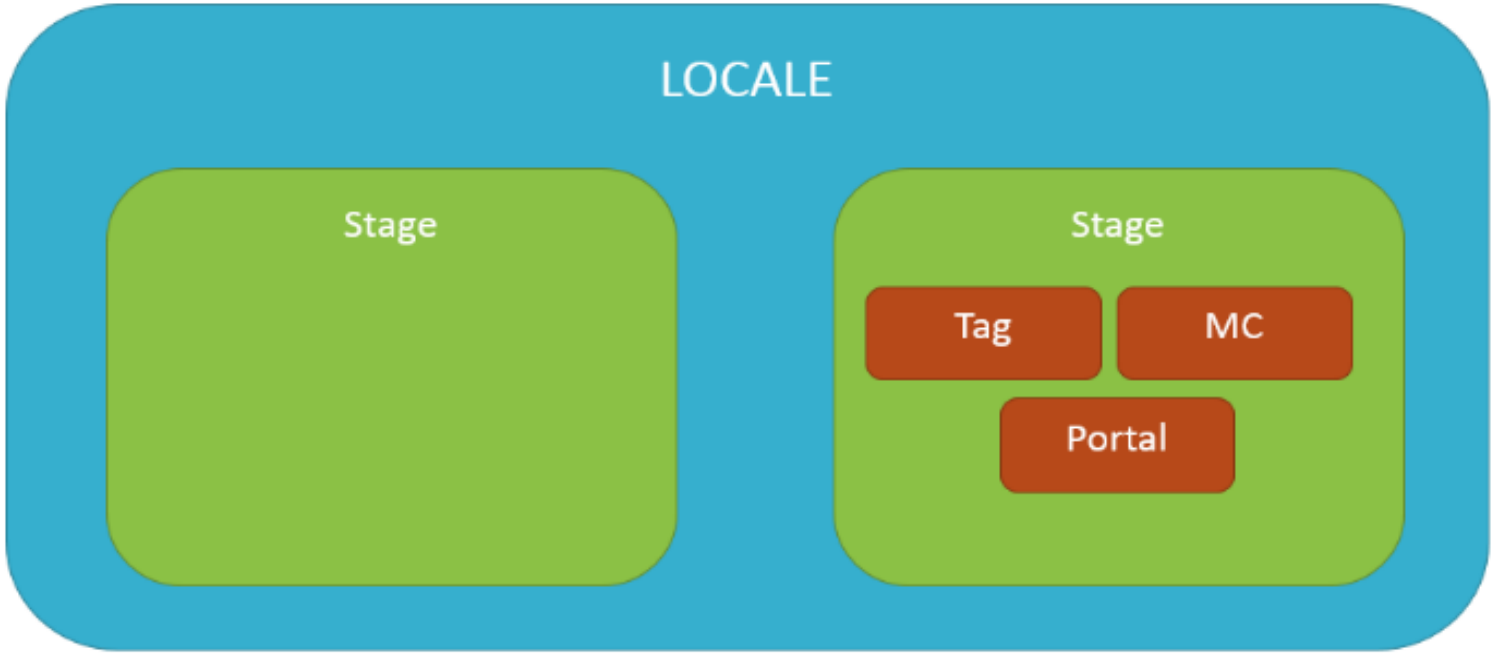
Control Panel

Similarly, teachers can also change their password.

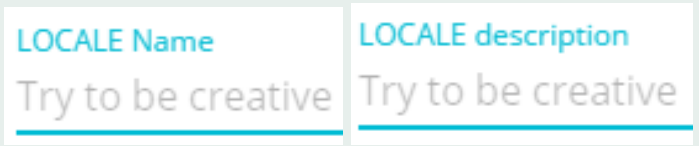
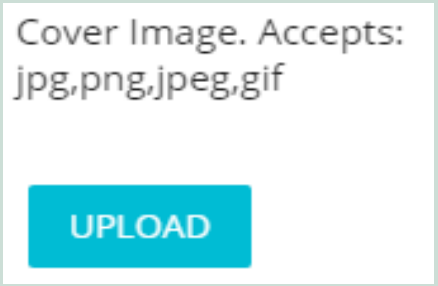
Step	Procedures
1	Press at the top, then select “Change Password”.
2	Input the old password and new password, then press “OK”.
3	Press “Cancel” to discard everything and return to main menu.
UI	

Locales

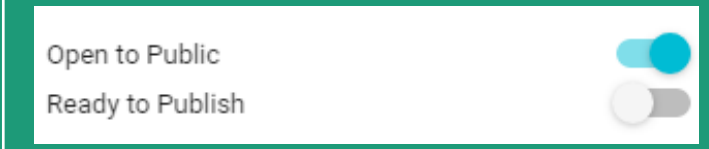
- "Locale", place or locality, especially with reference to events or circumstances connected with it
- "Locale" is referring to the VR learning materials. Each locale is made up of a series of stages;
- Each stage can either be a 360 movie or a 360 image. These stages can combine together to produce a VR learning experience.



How to Create a Locale

Step	Procedures	User Interface
1	Press “Create New Locale” at the top.	
2	Enter the locale’s name and description. Be creative!	
3	Upload the locale’s cover image (jpg, jpeg, png, gif).	

How to Create a Locale

4	Indicate these 2 settings. “Open to Public”: Can all users view the locale? “Ready to Publish”: Is the locale ready to be used by public?	

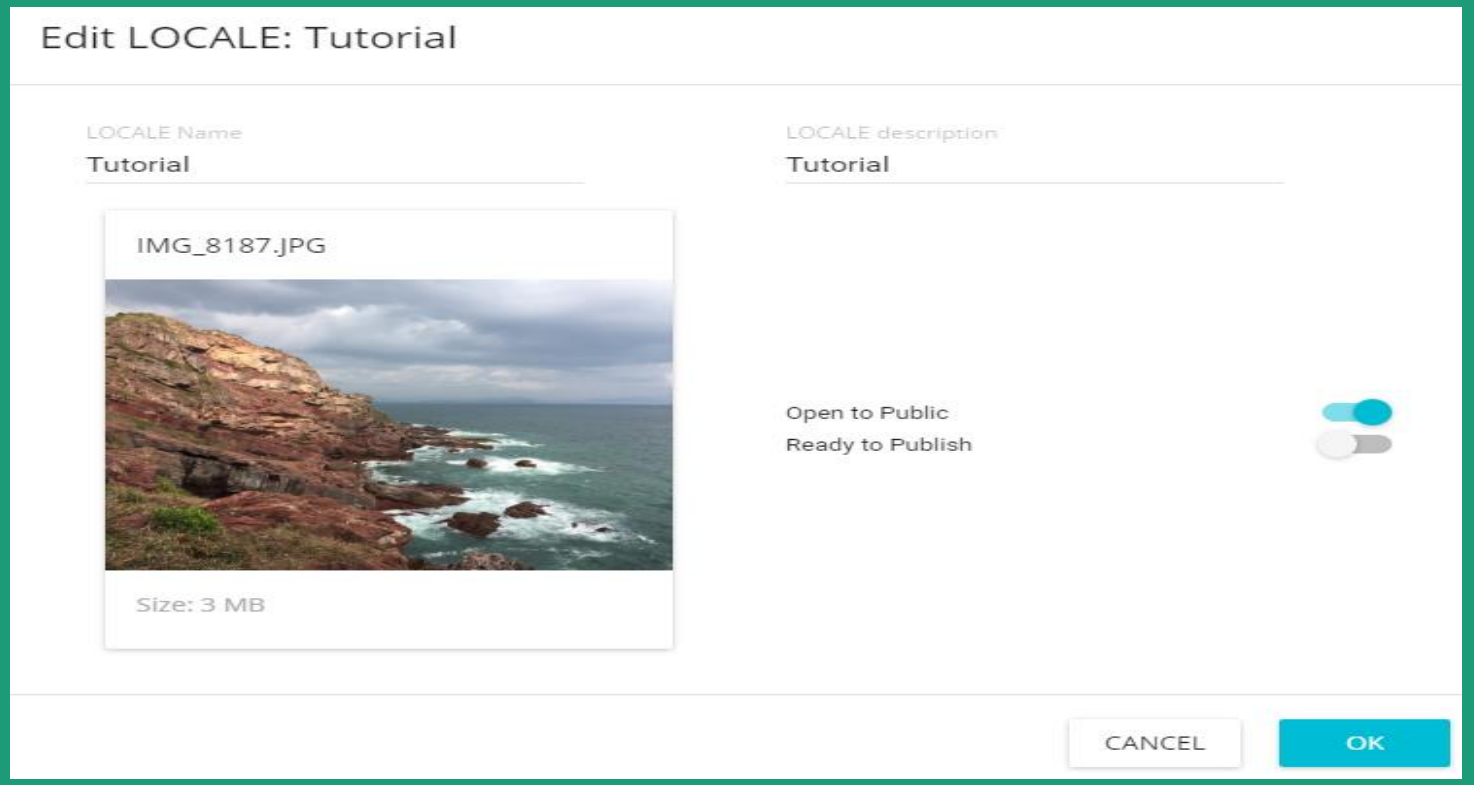
Upon successful creation of locale, a new locale (with the owner’s name, the locale’s name and the locale’s cover image) should appear in the main menu.

How to Edit a Locale

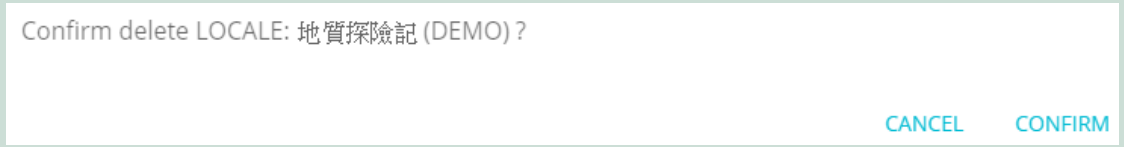
Step	Procedures	User Interface
1	Press the setting button at the right bottom corner.	
2	Press “View/Edit Detail”.	
3	Edit the locale’s name, description, public and publish settings. Press “OK” to confirm and “Cancel” to return.	

How to Edit a Locale

Step	Procedures	User Interface
UI		



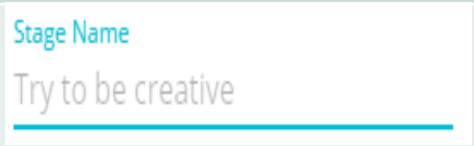
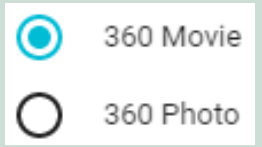
How to Delete a Locale

Step	Procedures	User Interface
1	Press the setting button at the right bottom corner.	
2	Press “Delete”.	
3	Press “Cancel” to return and “Confirm” to delete.	
UI		

Stages

- Stages are the building blocks of a locale.
- A stage can be a 360 movie or a 360 image.
- Inside a stage, teachers can add interactive elements such as tags, MCs and portals.

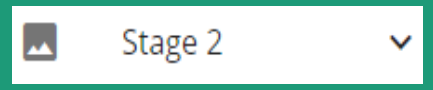
How to Create a Stage

Step	Procedures	User Interface
1	Press “Create New Stage”.	
2	Enter the stage’s name.	
3	Indicate 360 Movie / Photo (Default: 360 Movie).	

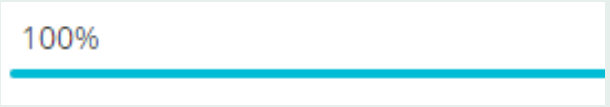
Upon successful creation, the new stage will appear on the left navigation bar.

How to Create a Stage

- The left navigation bar shows all the stages in sequence
- The right hand side allows teachers to upload their 360 movie / image

Icon	Meaning
	360 Movie
	360 Image

Upload 360 Movie / Image for a Stage

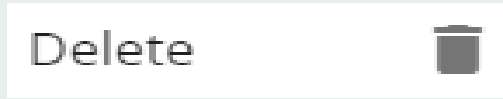
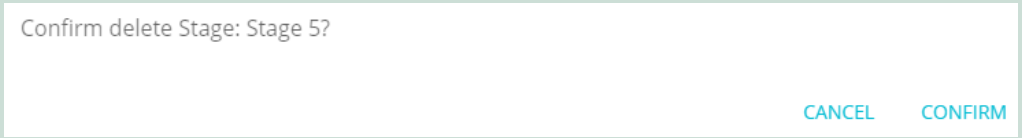
Step	Procedures	User Interface
1	Press “Upload”. Movie: mov, mp4, m4v, avi Image: jpg, jpeg, png, gif	
2	Wait until 100% .	
3	Upon successful upload, teachers should be able to see the thumbnail and the timeline for the VR content.	
UI		

Edit a Stage

- Teachers can further edit the display sequence of stages using the left navigation bar.

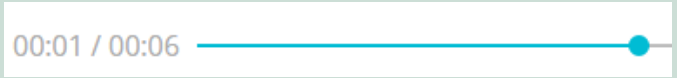
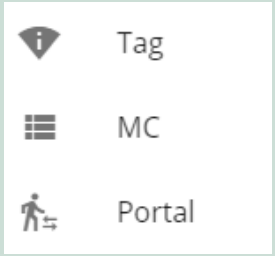
Step	Procedures	User Interface
1	Press the button.	
2	Press “Move Up” / “Down”.	

Delete a Stage

Step	Procedures	User Interface
1	Press the button.	
2	Press “Delete”.	
3	Press “Cancel” to return and “Confirm” to delete.	
UI		

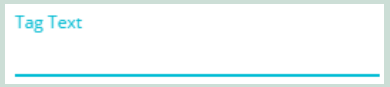
Playback Elements

- Teachers can add interactive elements in the VR world.
- They include tags, MCs and portals.

Step	Procedures	User Interface
1	Drag the timeline to indicate when the element should appear.	
2	Press "Element At This Moment"	
3	Choose the element: "Tag", "MC" or "Portal"	

How to Create a Tag

•Tag can display information such as text, voice or enlarged image.

Step	Procedures	User Interface
1	Enter the display text.	
2	Choose the tag type.	
2a	For voice, upload an mp3. Toggle autoplay or not (Default: Off).	
2b	For image, upload these formats: jpg, jpeg, png, gif.	

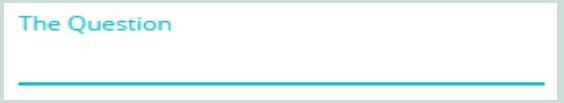
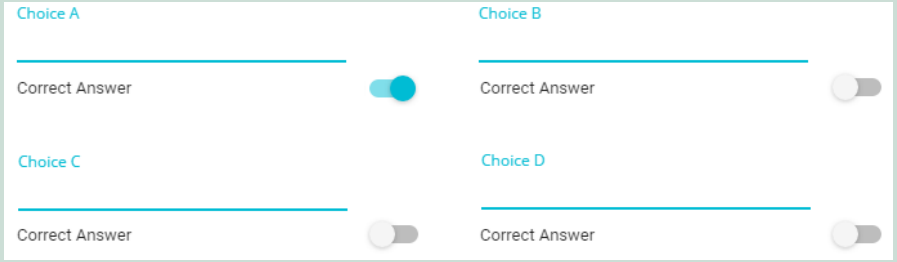
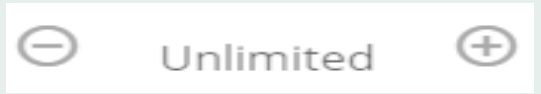
How to Create a Tag

- Tag can display information such as text, voice or enlarged image.

Step	Procedures	User Interface
3	Drag the pin to indicate where the tag should appear.	
4	Drag the timeline to indicate how long the tag should appear.	

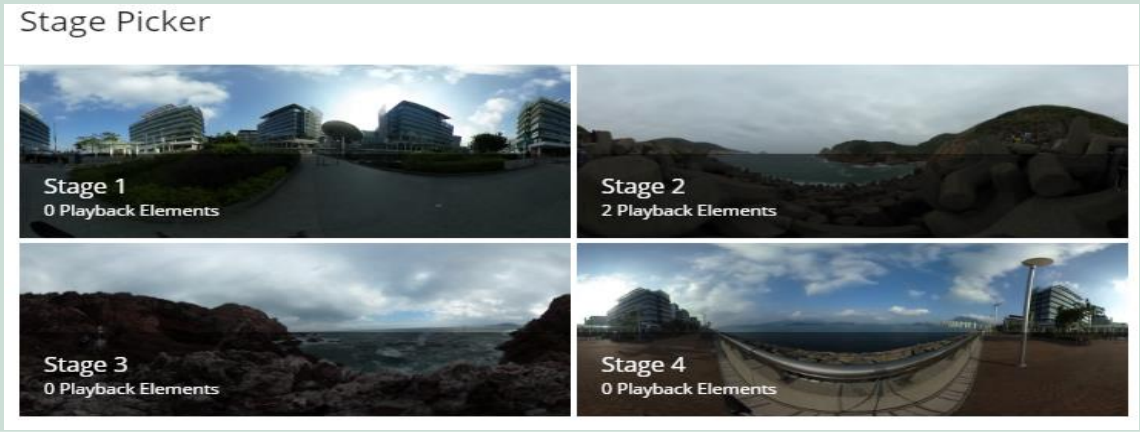
Create a MC

- Each MC has 4 choices and at least 1 correct answer.
- Teachers can limit how many times the students can attempt a MC.

Step	Procedures	User Interface
1	Enter the question.	
2	Enter the 4 choices and toggle at least 1 correct answer.	
UI		
3	Adjust how many times the students can answer this MC.	

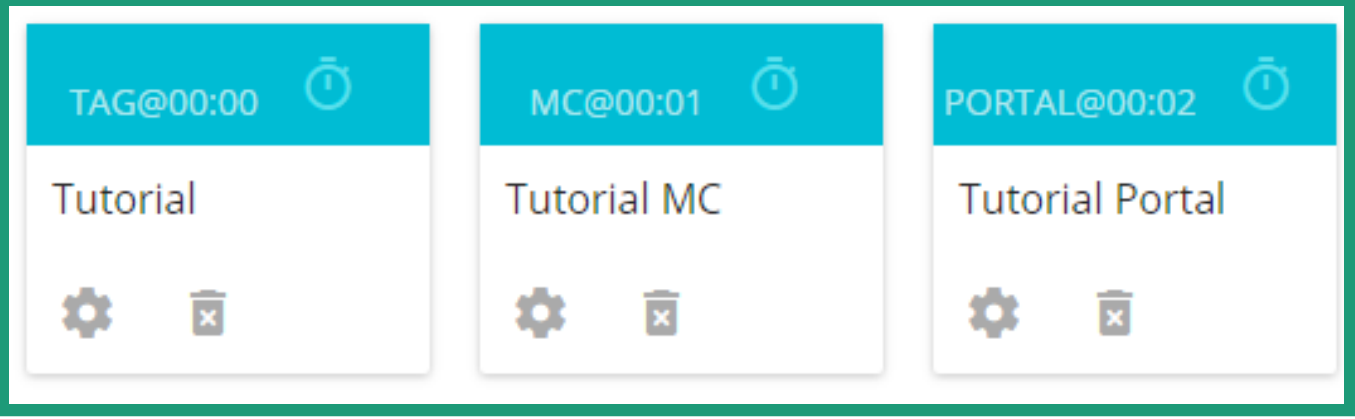
Create a Portal

- Portal is the transfer gateway to other stages.
- Teachers can set at most select 4 destination stages for a portal.

Step	Procedures	User Interface
1	Enter the display text, e.g., “To Stage 2”	Tell the user something about these portals
2	Pick the destination stages.	DESTINATION STAGE 1 DESTINATION STAGE 2 DESTINATION STAGE 3 DESTINATION STAGE 4
UI		

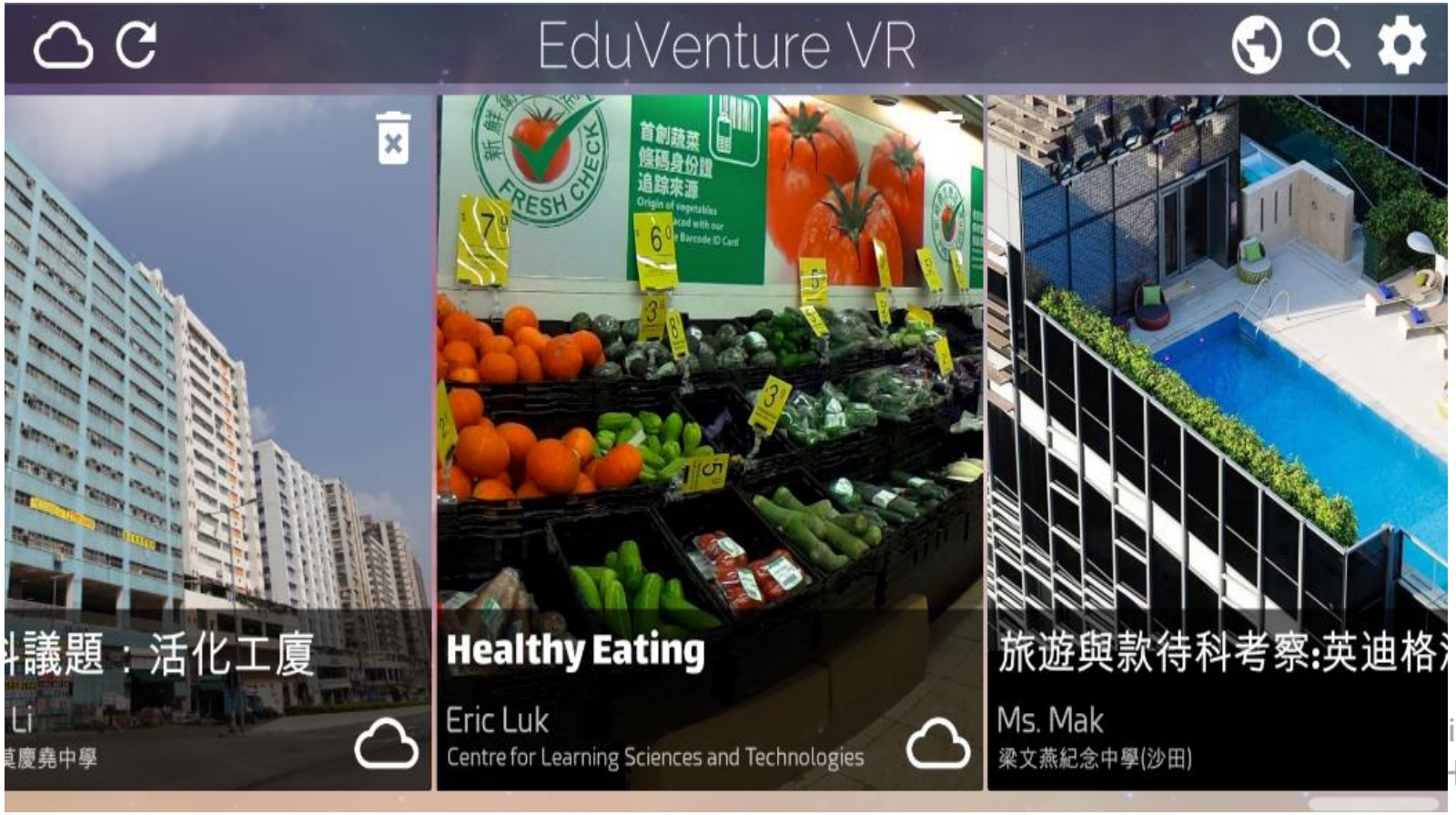
Review the Playback Elements

- Teachers can review the playback elements they added in the bottom panel.

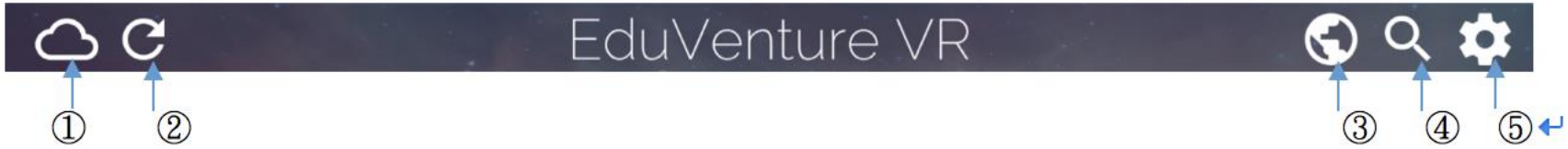
UI		
Step	Procedures	
1	Press to edit the element.	Press to delete the element.

EduVenture VR App

After installing the EVVR App, students should be able to see the locales that are set public and ready to publish in the composer.

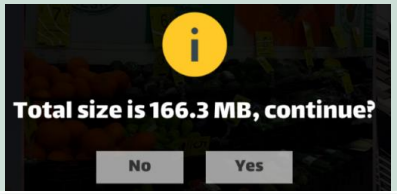
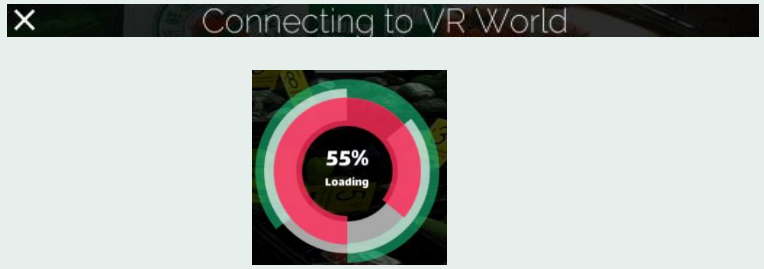


Control Panel

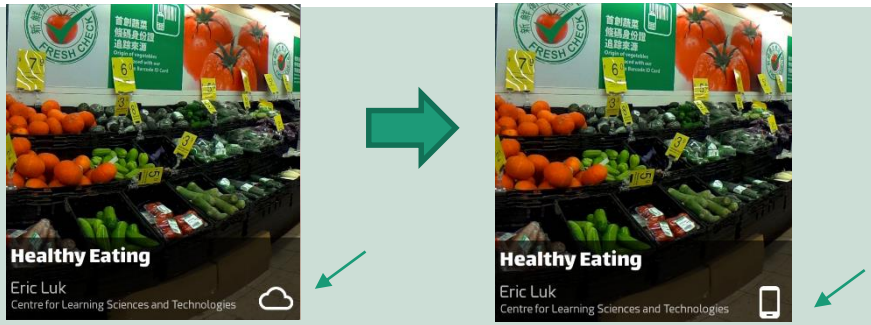


No.	Icons	Functions
1a		Display the online locales (Can switch to 1b)
1b		Display the downloaded locales (Can switch to 1a)
2		Refresh the locale menu
3a		Display all public locales (Can switch to 3b)
3b		Display private locales only (Can switch to 3a)
4		Search a particular locale
5		Configure game settings

Download a Locale

Step	Procedures	User Interface
1	Press the locale to download	
UI		
2	Press “Yes” to download and press “No” to return.	
3	Press ✕ to stop downloading if necessary. Otherwise, wait until 100% downloaded.	

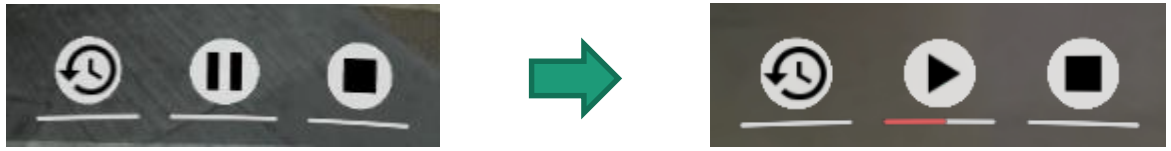
Download a Locale

4	Upon successful downloading, the students can start the locale! Note that the icon at the right bottom corner changes.
UI	

Inside the VR World

How to Reverse/Play/Stop the VR content

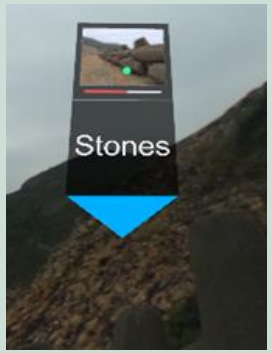
When the students look downwards, a control panel will pop up.



- There are 3 actions: **reverse, pause/resume and stop the 360 movie / image.**
- To perform these in the VR world, simply move the pointer to the button for 2 seconds.

How to Respond to a Tag

Either text, image or voice tag will be displayed (according to the composer's database).

Type	None	Image	Voice
UI			
Step	Procedures		
1	N/A	Point to the thumbnail image for 2 seconds.	Point to the play button for 2 seconds.
2	N/A	An enlarged image will come out eventually.	The sound will be played eventually.

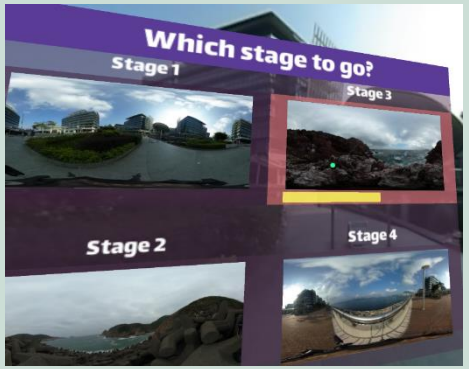
How to Respond to a MC

The number of chances, the MC question and the 4 choices will now be displayed (according to the composer's database).

Step	Procedures	
1	Move the pointer to the answer.	
2	Correct	Wrong
UI		

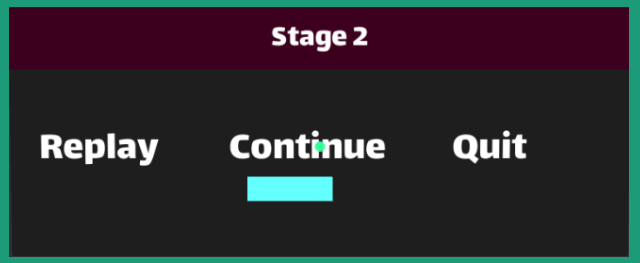
How to Respond to a Portal

Students can teleport to other stages through portal. The portal title and destination stages will now be displayed (according to the composer's database).

Step	Procedures
1	Move the pointer to the destination stage and wait for 2 seconds. The portal will then teleport to the destination stage.
UI	

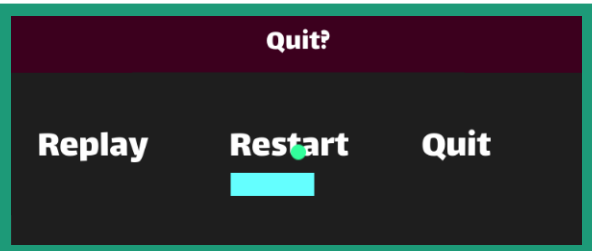
How to Continue to Next Stage

- After finishing a stage, a "Continue Panel" will pop up.
- The student can either replay, continue or quit, by moving the pointer to the option.

UI	
Actions	Meaning
Replay	Replay the current stage.
Continue	Go on to next stage.
Quit	Return to the main menu.

Quit Panel

- After finishing all stages, a "Quit Panel" will pop up.
- The student can either replay, restart or quit, by moving the pointer to the option

UI	
Actions	Meaning
Replay	Replay the current stage.
Restart	Restart from the first stage.
Quit	Return to the main menu.

7. 總結