

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
EI0020180444
第二節



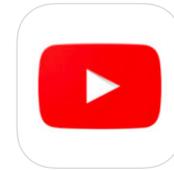
香港中文大學 學習科學與科技中心 (CLST)

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
EI0020180444

SECTION 2

• 步驟一：將你手機連接 WIFI NETWORK

• 步驟二：下載 **YOUTUBE** APP



• 步驟三：下載 QR CODE READER APP

例如：QR Code Reader from **Kaywa**



步驟四：下載以下 VR/ AR APPs

Google Streetview



Discovery VR



Within - VR (Virtual Reality)



Google Cardboard



Google Expeditions



HP Reveal



中學 AA 班

第一節：

日期：2019/01/21 (星期一)

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：2019/01/28 (星期一)

時間：18:30 - 21:30

地點：香港中文大學崇基校園信和樓614



導師簡介

姓名：文可為

MAN HO WAI · WALLACE

BSSc. (HON.) / PGDE (DIST.)/ MEd, CUHK

借調：香港教育局資訊科技教育組

行政長官卓越教育獎秘書處

專研：網絡探究 WebQuest

資訊素養 Information Literacy

教育遊戲 Game-based Learning

網誌教學 Blog-based Learning

移動學習 Mobile Learning

翻轉教學 Flipped Learning

自主學習 Self-directed Learning



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





facebook

Google for Education



用戶身份驗證和帳戶管理

用戶身份驗證和帳戶管理

Current Authentication

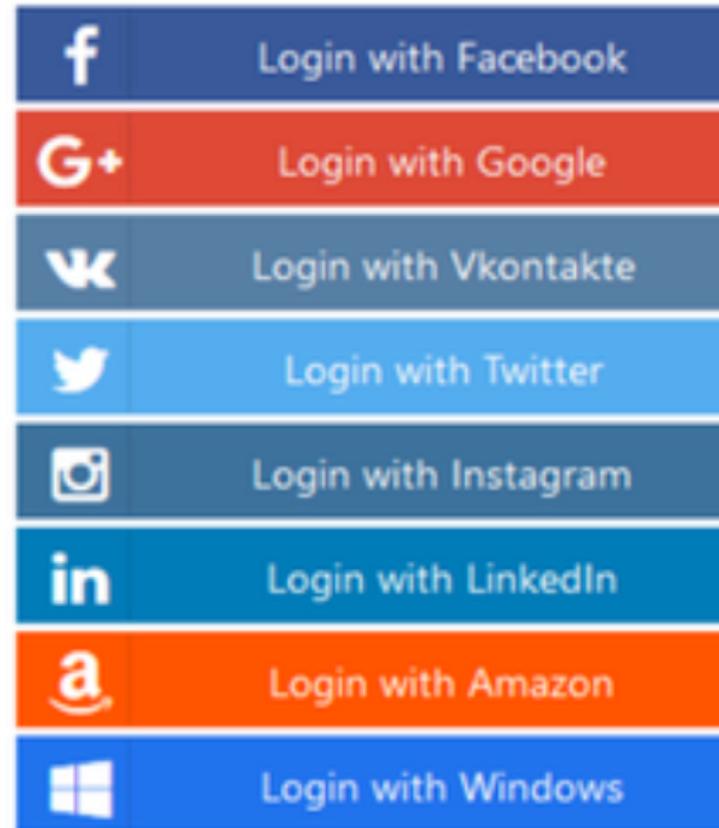
Authenticate to **multiple systems** with Many username and Many password



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

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



香港教育城 HkedCity

搜尋    登入/註冊 | English | 

 訂閱教城資訊

認識教城  教師  中學生  小學生  家長  企業 

「學與教的網絡及評估素養」
教師研討會

'Digital and Assessment Literacy for Learning and Teaching'
Teacher Seminar

主辦 Organised by:  香港教育城 HkedCity

「App世代管教錦囊」 家長講座

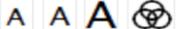
2019年2月23日 (六)

焦點

玩樂 遊戲世界

ARE YOU READY?
PRESS START

TV news

活動 | 更多活動 

23 Feb 「學與教的數碼及評估素養」教師研討會



用戶身份驗證和帳戶管理

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

登入/註冊

以電郵地址或教城帳戶登入:

保持登入狀態 🔒

[忘記密碼](#)

註冊成為會員

或以其他帳戶登入:





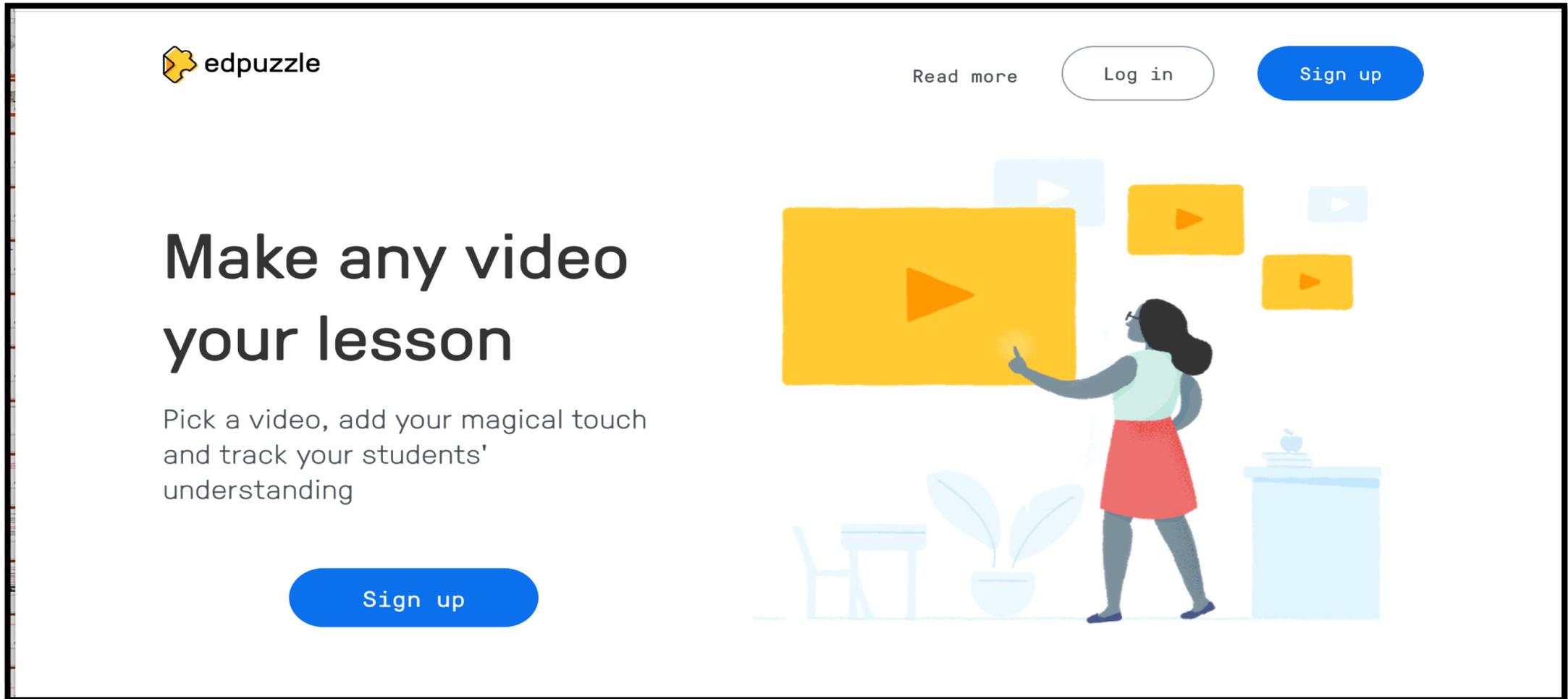



3. 運用EdPuzzle進行翻轉課室



運用EdPuzzle進行翻轉課室

<https://edpuzzle.com/>



The image shows a screenshot of the EdPuzzle website landing page. The page features a clean, modern design with a white background and blue accents. At the top left is the EdPuzzle logo, which consists of a yellow puzzle piece icon followed by the text "edpuzzle". To the right of the logo are three navigation links: "Read more" in a light blue rounded rectangle, "Log in" in a white rounded rectangle with a blue border, and "Sign up" in a solid blue rounded rectangle. The main heading is "Make any video your lesson" in a large, bold, black sans-serif font. Below the heading is a sub-headline: "Pick a video, add your magical touch and track your students' understanding". At the bottom left of the main content area is a large blue rounded rectangle with the text "Sign up" in white. On the right side of the page is a large illustration of a woman with dark hair, wearing a light green top and a red skirt, pointing at a large yellow video player icon. Several smaller yellow video player icons are floating around her. In the background, there are faint illustrations of a desk, a chair, a potted plant, and a desk with books and an apple.

edpuzzle

Read more Log in Sign up

Make any video your lesson

Pick a video, add your magical touch and track your students' understanding

Sign up

運用EdPuzzle進行翻轉課室

<https://edpuzzle.com/>

Please check your inbox (manhw@ykh.hk) and verify your account. [Resend email](#)

edpuzzle [Content](#) [Gradebook](#) [My Classes](#)

Content

Home

Curriculum

Lok Sin Tong Yu Kan Hing Se...

My Content

Popular channels

Edpuzzle

YouTube

YouTube

03:04 Global Warming 101 National Geographic	04:29 U.N. releases gloomy report on global warming	06:50 13 Misconceptions About Global Warming



運用EdPuzzle進行翻轉課室

<https://edpuzzle.com/>

The screenshot shows the EdPuzzle interface. At the top, there are four buttons: "Crop Video" (highlighted in red), "Voiceover", "Audio Notes", and "Quizzes". Below these is a video player showing a scene from a National Geographic video. The video player has a play button in the center and a yellow crop box in the top-left corner. At the bottom of the video player, there is a progress bar with a play button on the left and a volume icon on the right. The progress bar shows a current time of 00:00 and a total time of 03:04.

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/>

The screenshot shows the EdPuzzle interface. At the top, there are four buttons: "Crop Video" (highlighted in red), "Voiceover", "Audio Notes", and "Quizzes". Below these is a video player showing a scene from a National Geographic video with a play button in the center. The video player has a progress bar at the bottom with a play button on the left and a volume icon on the right. The video title "YouTube" is visible in the bottom right corner of the player area.

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/>

Assign to a class

Public links

Start Date

Today

12:00 AM

Due Date

No due date

--:--

+ Add new class

Now create your first class

Later, you will invite your students



Prevent Skipping

Later

Assign

Assign to a class

Public links

Public link

Share this link with colleagues

<https://edpuzzle.com/media/5c4eaddb622b0c>

Copy link

Embedded code

Embed this video on your LMS

Medium size

`<iframe width="470" height="402" src="https://`

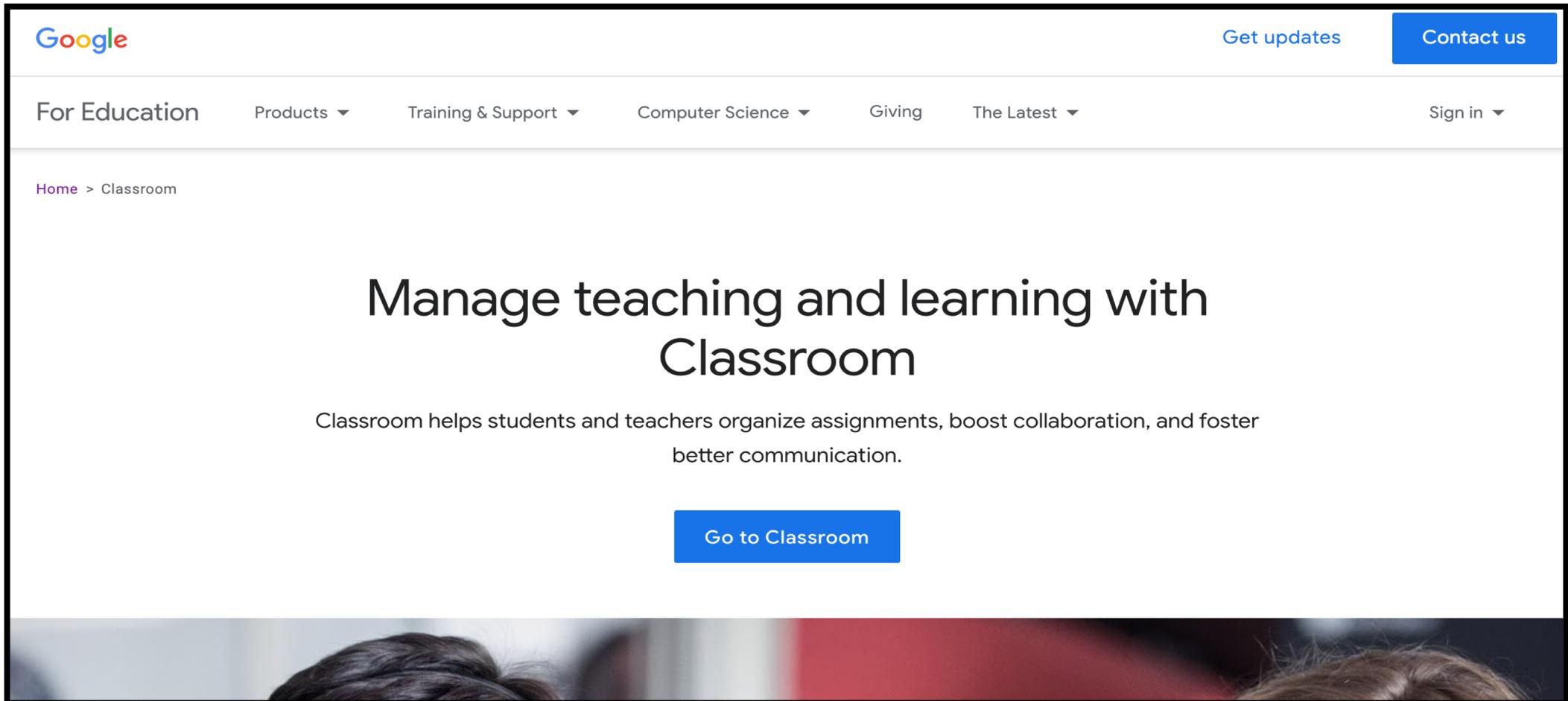
Copy link

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/>



The screenshot shows the Google Classroom website homepage. At the top left is the Google logo. To the right are links for "Get updates" and "Contact us". Below the logo is a navigation bar with "For Education" and several dropdown menus: "Products", "Training & Support", "Computer Science", "Giving", and "The Latest". On the far right of this bar is a "Sign in" link. Below the navigation bar, the breadcrumb "Home > Classroom" is visible. The main heading reads "Manage teaching and learning with Classroom". Below this is a descriptive sentence: "Classroom helps students and teachers organize assignments, boost collaboration, and foster better communication." A prominent blue button labeled "Go to Classroom" is centered below the text. The bottom of the page features a blurred image of people's heads.

Google

Get updates Contact us

For Education Products Training & Support Computer Science Giving The Latest Sign in

Home > Classroom

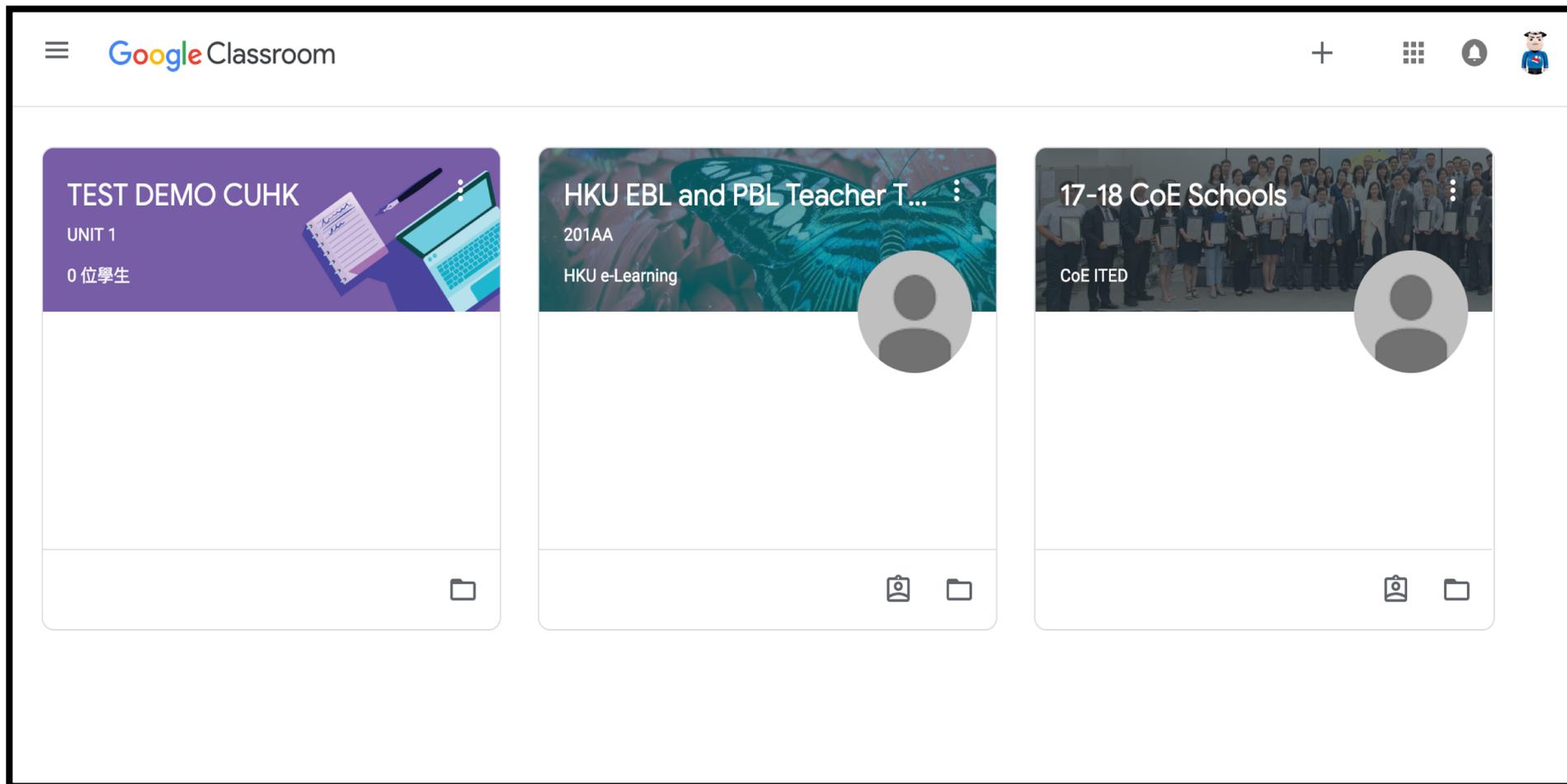
Manage teaching and learning with Classroom

Classroom helps students and teachers organize assignments, boost collaboration, and foster better communication.

Go to Classroom

運用Google Classroom促進電子學習

<https://classroom.google.com/>



The screenshot displays the Google Classroom interface. At the top, the Google Classroom logo is on the left, and navigation icons (plus, grid, bell, profile) are on the right. Below the header, three class cards are visible:

- TEST DEMO CUHK**: UNIT 1, 0 位學生. The card features a purple header with an illustration of a laptop and a notebook.
- HKU EBL and PBL Teacher T...**: 201AA, HKU e-Learning. The card features a teal header with a butterfly illustration.
- 17-18 CoE Schools**: CoE ITED. The card features a grey header with a group photo of people.

Each class card includes a profile picture placeholder and icons for a camera and a folder at the bottom.



運用Google Classroom促進電子學習

Quiz : Google Form

Blank Quiz

所有變更都已儲存到雲端硬碟

問題 回覆 總分： 0

Blank Quiz

表單說明

Untitled Question

選擇題

Option 1

新增選項 或 新增「其他」

答案 (0分)

必填



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 Docs

- 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>

The screenshot shows the Google Classroom support page in Chinese. At the top, there is a navigation bar with a hamburger menu icon, the text "Classroom說明", and icons for a grid, a bell, and a user profile. Below the navigation bar, there are two tabs: "說明中心" (Help Center) and "社群" (Community). To the right of the tabs, there is a "Classroom" link with an external link icon. A light blue banner below the tabs contains a lightbulb icon and the text: "Have questions about the new features in Classroom? Take a look at our [Back to School FAQ](#)." Below the banner, there is a large illustration of a school building with a search bar in the foreground. The search bar contains a magnifying glass icon and the text "請說明您的問題". Above the search bar, the text "請問您有什麼需求?" is displayed. At the bottom of the page, there is a section titled "探索 Classroom" with an upward-pointing arrow.

Classroom說明

說明中心 社群

Classroom

Have questions about the new features in Classroom? Take a look at our [Back to School FAQ](#).

請問您有什麼需求？

請說明您的問題

探索 Classroom

5. 運用HP Reveal通過擴增實境 (AR) 增強課堂體驗



<https://www.hpreveal.com/>

The image is a screenshot of the HP REVEAL website. The background is a high-angle, blue-tinted photograph of a city skyline, with the Empire State Building being a prominent feature. In the top right corner, there are two links: "Products" and "Contact Us". The HP logo is on the left, followed by the word "REVEAL" in large, spaced-out, white capital letters. Below this, the main headline reads "A new Extended Reality Platform from HP" in white. Underneath the headline is the tagline "Adding value to printed content through visual interactivity". In the bottom left, a smartphone is shown with a 3D architectural model of a city skyline rising from its screen. In the bottom right, there is a 3D rendering of a product box for "HeadPhones" with a circular blue icon containing a white fingerprint symbol overlaid on it.

Products Contact Us

hp REVEAL

A new Extended Reality Platform from HP

Adding value to printed content through visual interactivity

擴增實境 (Augmented Reality)



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



擴增實境 (Augmented Reality)



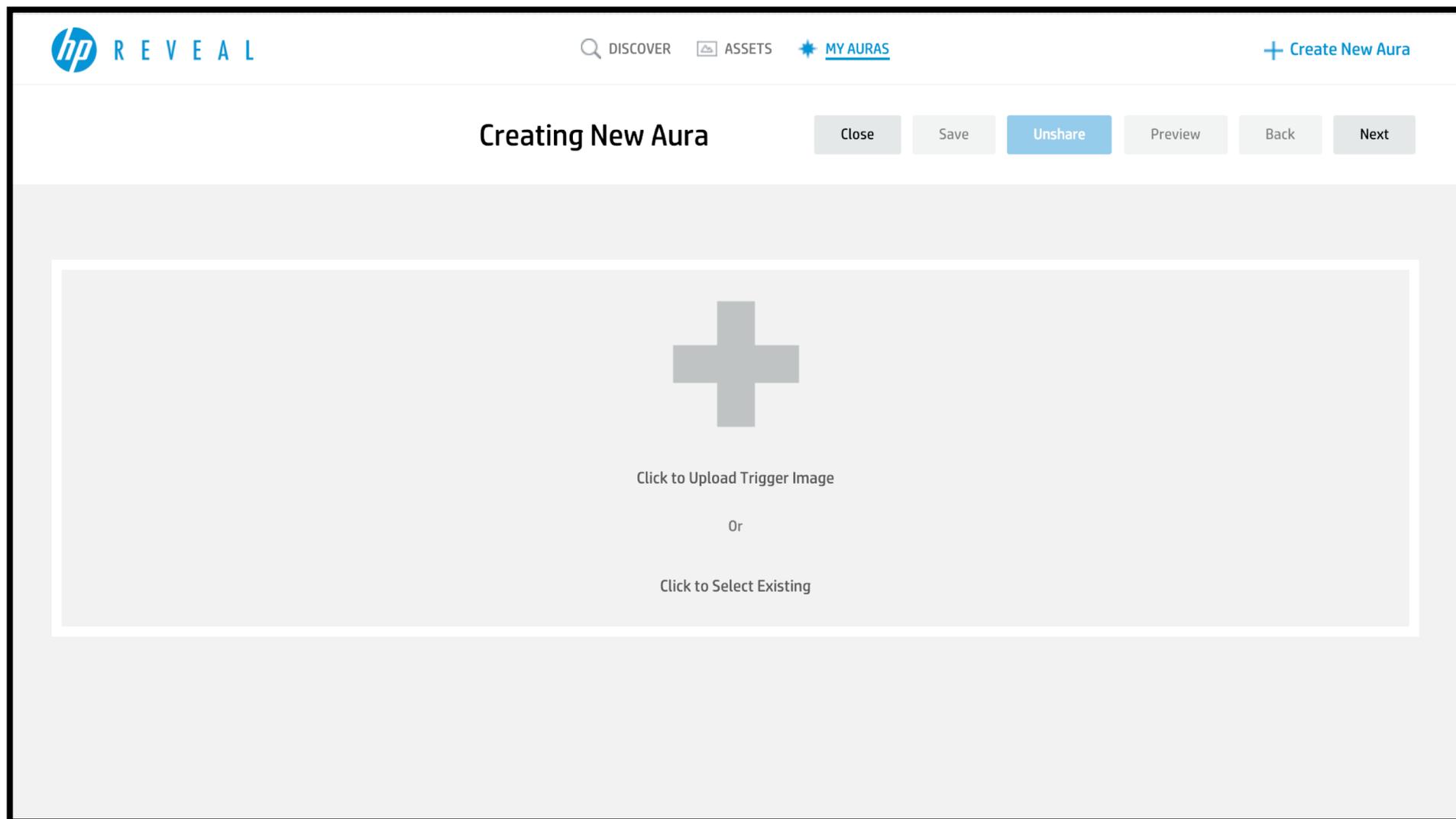
Centre for Learning Sciences and Technologies (CLST)
The Chinese University of Hong Kong



擴增實境 (Augmented Reality)

The screenshot displays the HP REVEAL web application interface. At the top, the navigation bar includes the HP logo, the word 'REVEAL', and menu items for 'DISCOVER', 'ASSETS', and 'MY AURAS'. A user greeting 'welcome, wallaceman.hk' and links for 'My Account', 'Help', and 'Log Out' are also present. The main content area is titled 'My Auras (0)' and features a 'Filter...' dropdown menu currently set to 'Alphabetical (A-Z)'. A large white button with a blue plus sign and the text 'Create New Aura' is prominently displayed in the center of the page.

擴增實境 (Augmented Reality)



The screenshot displays the HP REVEAL web application interface for creating a new augmented reality aura. The top navigation bar includes the HP REVEAL logo, search and navigation links for DISCOVER, ASSETS, and MY AURAS, and a '+ Create New Aura' button. The main heading is 'Creating New Aura', with a row of action buttons: Close, Save, Unshare (highlighted in blue), Preview, Back, and Next. The central content area features a large grey plus sign icon, followed by the text 'Click to Upload Trigger Image', 'Or', and 'Click to Select Existing'.

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 Expedition

<https://edu.google.com/products/vr-ar/expeditions/>



Google Expeditions



6. 運用EduVenture VR進行探究式學習



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.

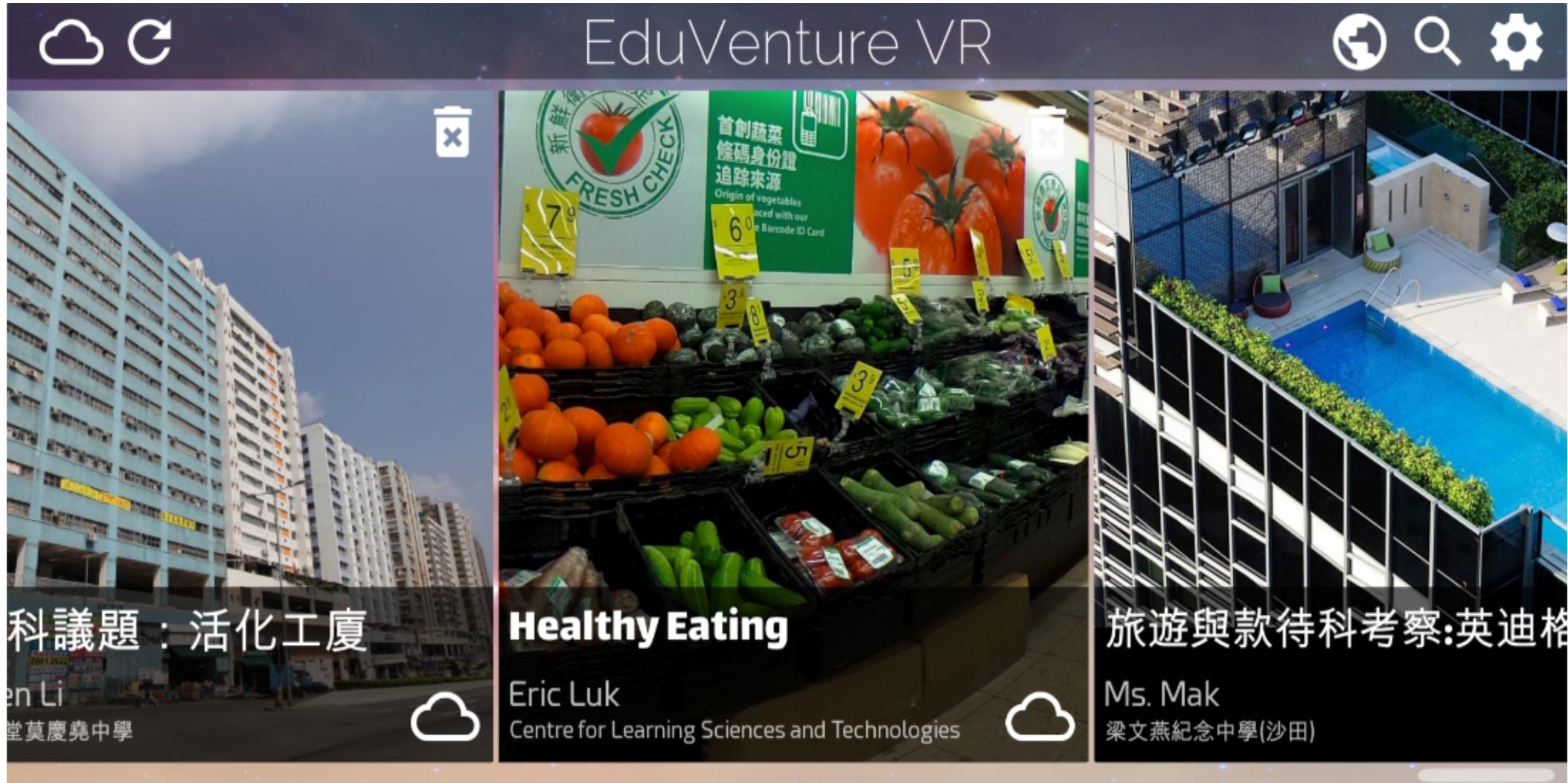


EduVenture VR

- 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

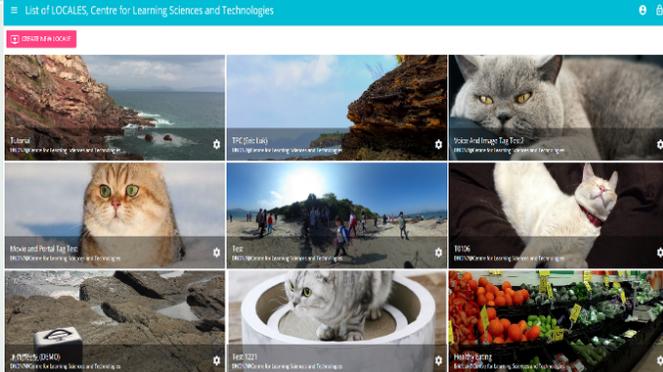
Open the browser and enter the URL: <http://vr.ev-cuhk.net>

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.

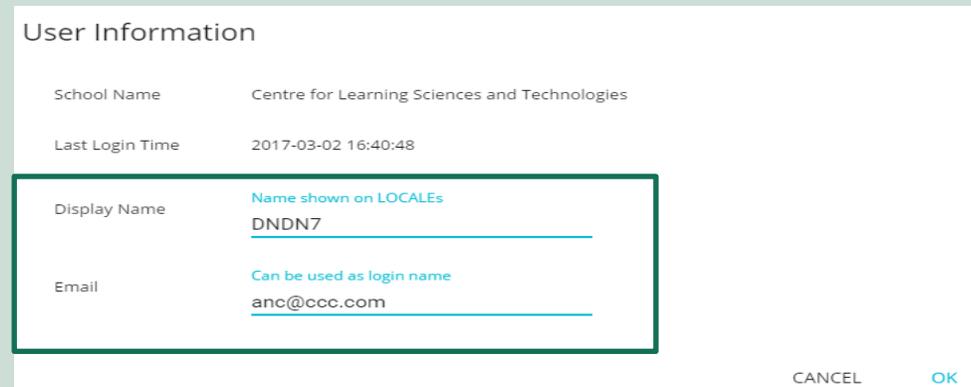
Step	Procedures	User Interface
1	Input username and password, then press "OK" .	
2	Upon successful login, teachers should be able to see a list of VR contents in the main menu.	

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



User Information

School Name Centre for Learning Sciences and Technologies

Last Login Time 2017-03-02 16:40:48

Display Name Name shown on LOCALEs
DNDN7

Email Can be used as login name
anc@ccc.com

CANCEL OK



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

Change Password

Old Password Your original password

New Password New password should contain letters and digits

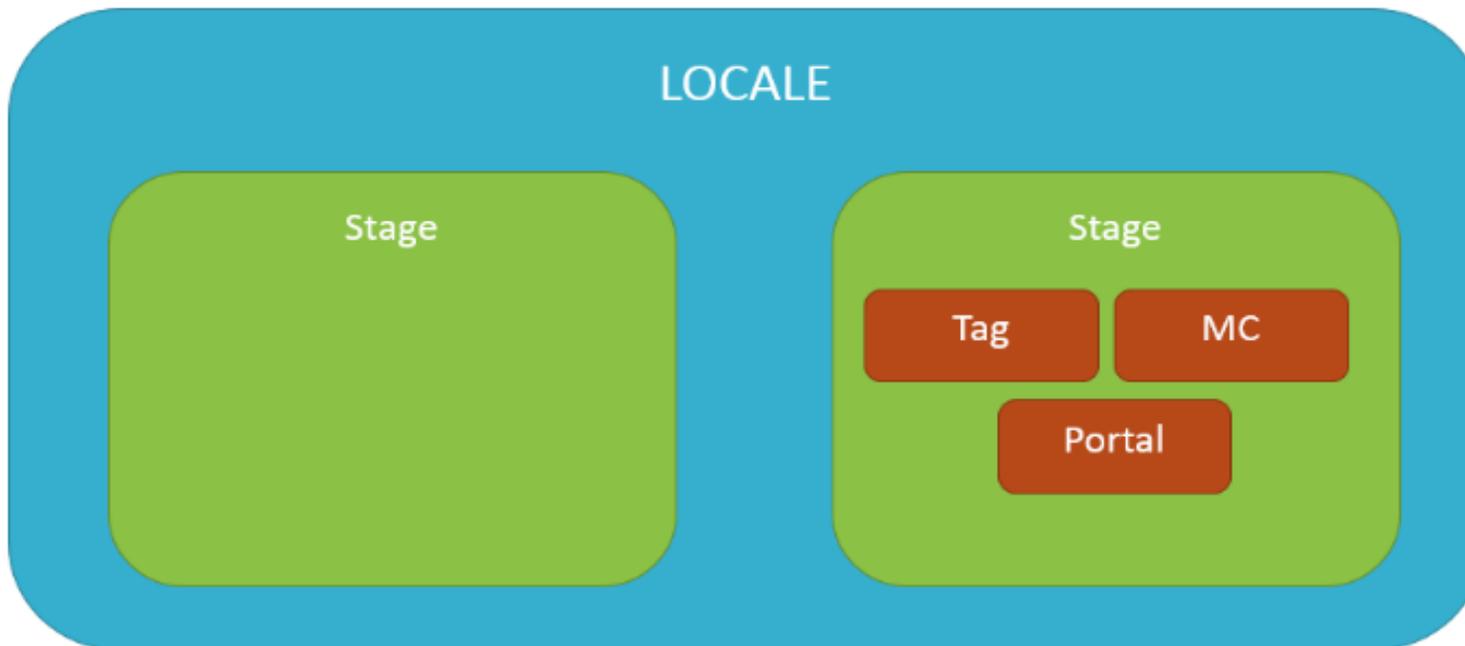
Re-enter New Password Re-enter the same password

CANCEL OK

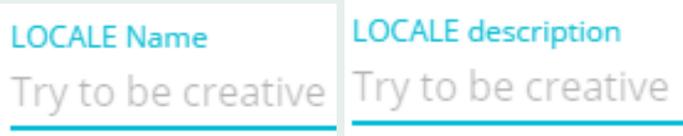
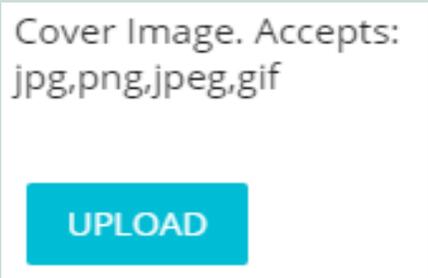


Locales

- “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).	

T)
ng



How to Create a Locale

4 Indicate these 2 settings.

“Open to Public”:
Can all users view the locale?

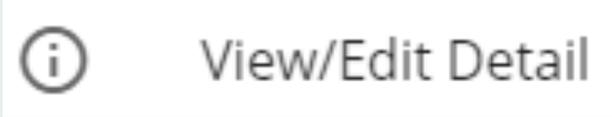
“Ready to Publish”:
Is the locale ready to be used by public?

Open to Public
Ready to Publish



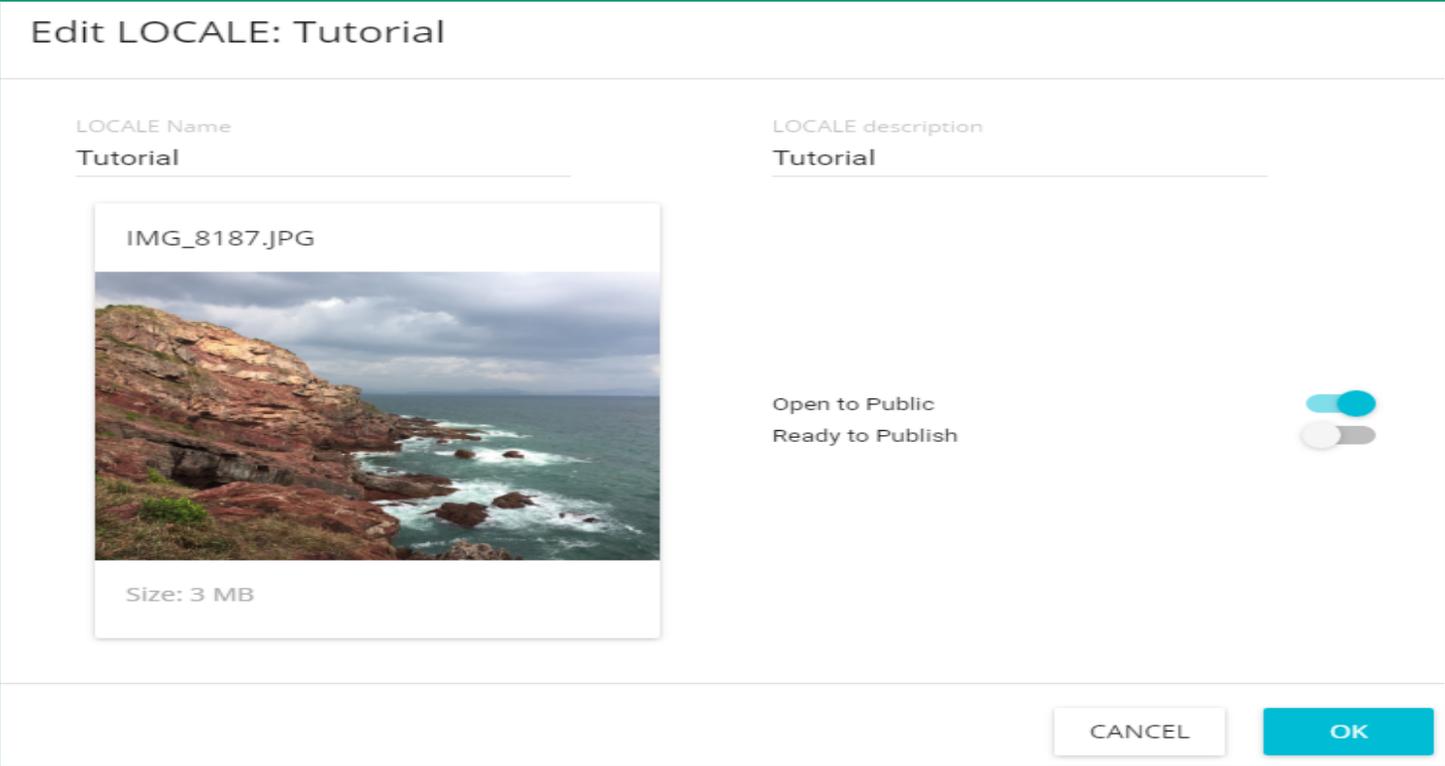
Upon successful creation of locale, a new locale (with the owner's name, the locale's name and the locale's cover image) should appear in the main menu.

How to Edit a Locale

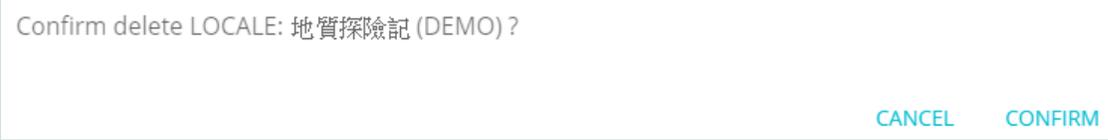
Step	Procedures	User Interface
1	Press the setting button  at the right bottom corner.	
2	Press "View/Edit Detail" .	
3	Edit the locale' s name, description, public and publish settings. Press "OK" to confirm and "Cancel" to return.	



How to Edit a Locale

Step	Procedures	User Interface
UI		

How to Delete a Locale

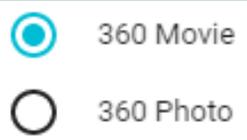
Step	Procedures	User Interface
1	Press the setting button at the right bottom corner. 	
2	Press "Delete".	
3	Press "Cancel" to return and "Confirm" to delete.	
UI		

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

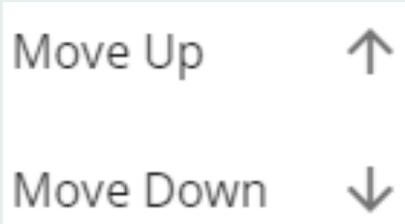
Icon	Meaning
 Stage 1 	360 Movie
 Stage 2 	360 Image

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

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

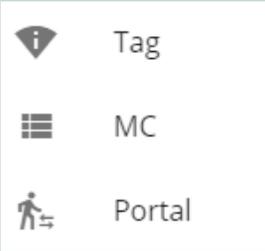
Step	Procedures	User Interface
1	Press the  button.	
2	Press "Move Up" / "Down".	

Delete a Stage

Step	Procedures	User Interface
	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.	

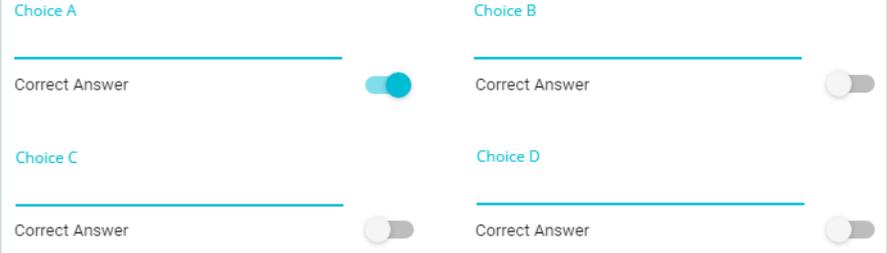
How to Create a Tag

- 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

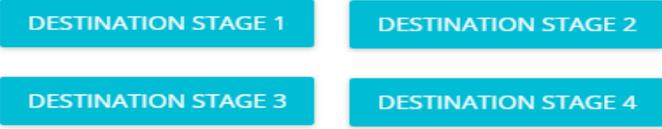
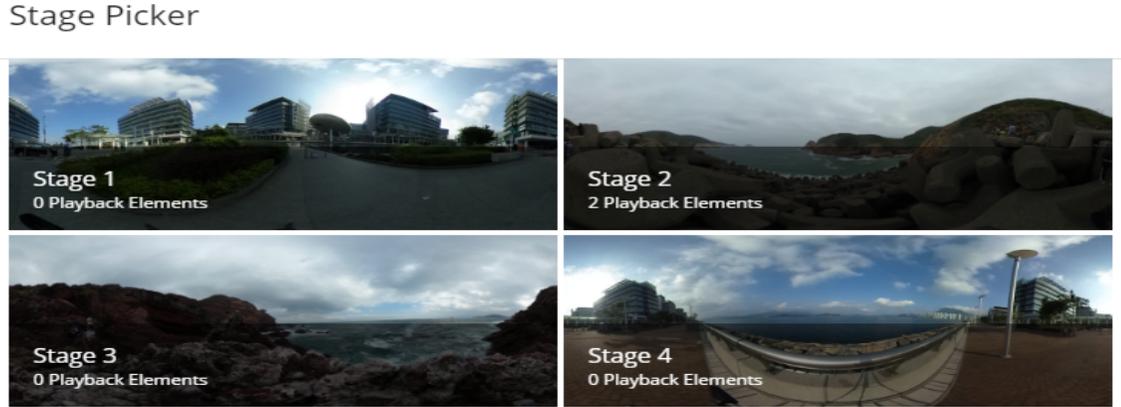
- Each MC has 4 choices and at least 1 correct answer.
- Teachers can limit how many times the students can attempt a MC.

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



Create a Portal

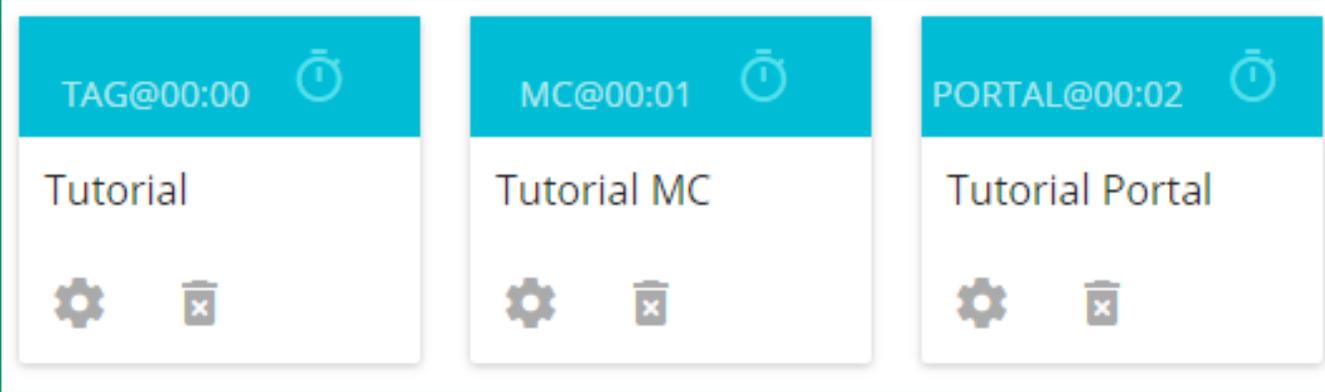
- Portal is the transfer gateway to other stages.
- Teachers can set at most select 4 destination stages for a portal.

Step	Procedures	User Interface
1	Enter the display text, e.g., “To Stage 2”	
2	Pick the destination stages.	
UI		



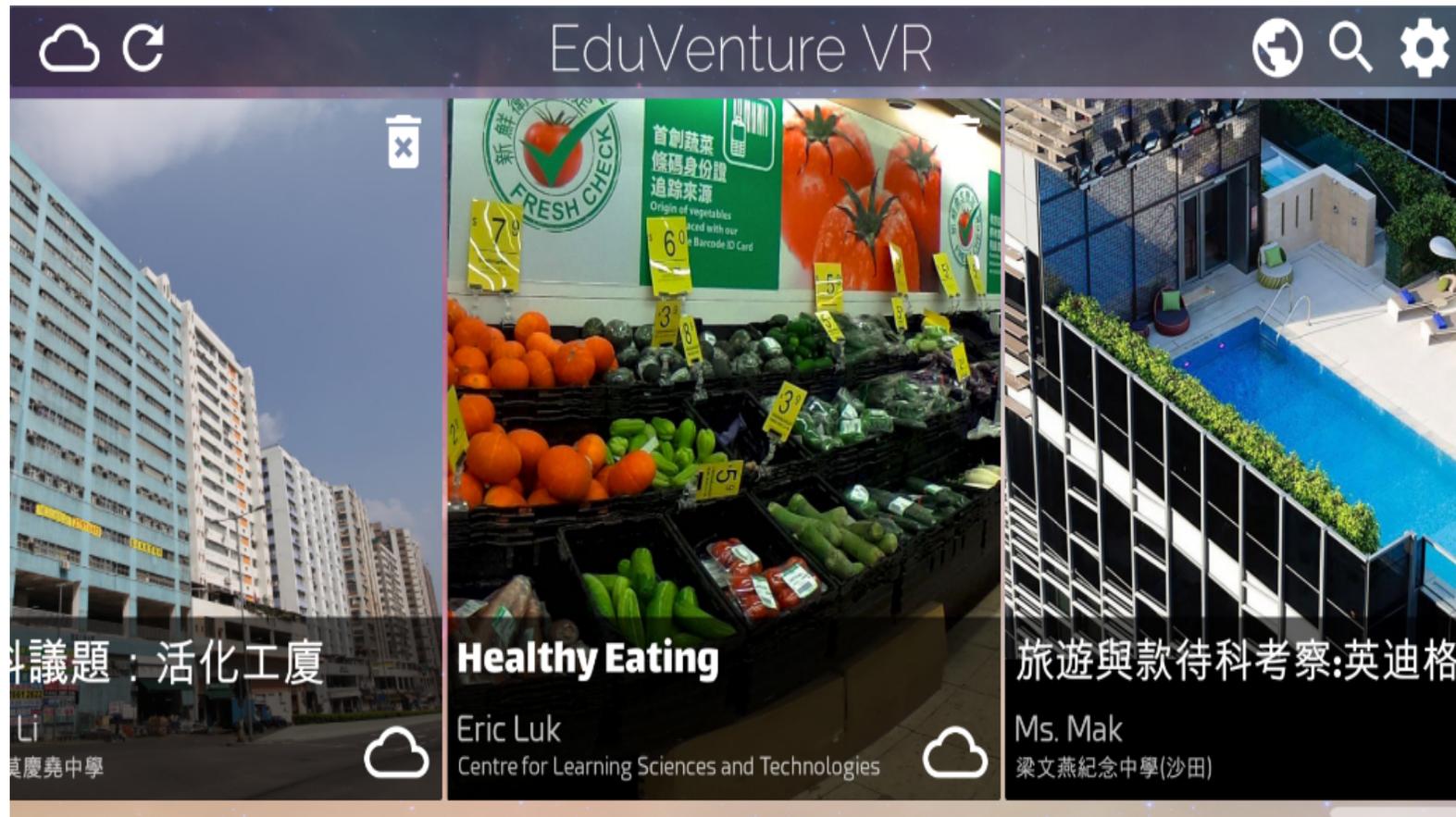
Review the Playback Elements

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

UI	
Step	Procedures
	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.



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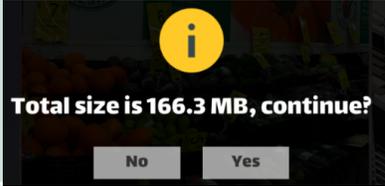
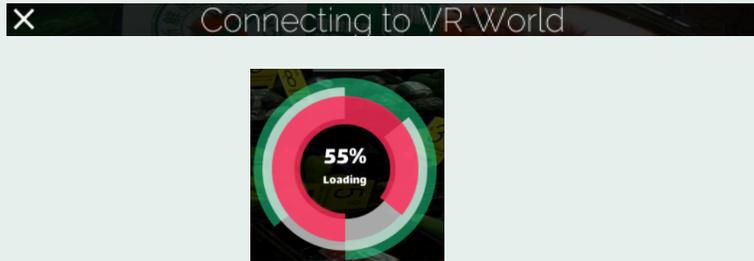
Control Panel



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 X 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

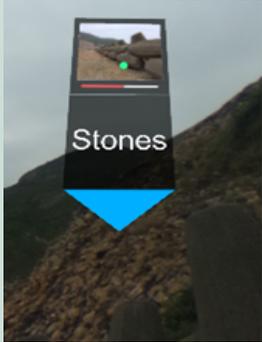
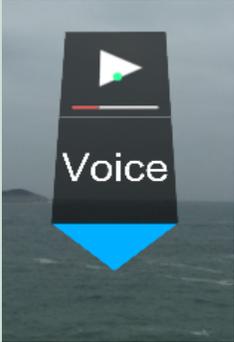
When the students look **downwards**, a control panel will pop up.



- 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

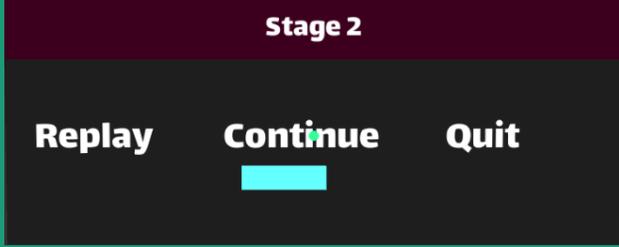
Students can teleport to other stages through portal. The portal title and destination stages will now be displayed (according to the composer's database).

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

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