

#### 4) 校本電子學習實施計劃的示例和個案

示例一：課前預習

示例二：學習管理系統

示例三：移動學習

示例四：運算思維及人工智能教育

示例五：遊戲化學習

示例六：虛擬實境(VR)及混合實境(MR)



# 示例一：課前預習 翻轉課堂 (Flipped Classroom)

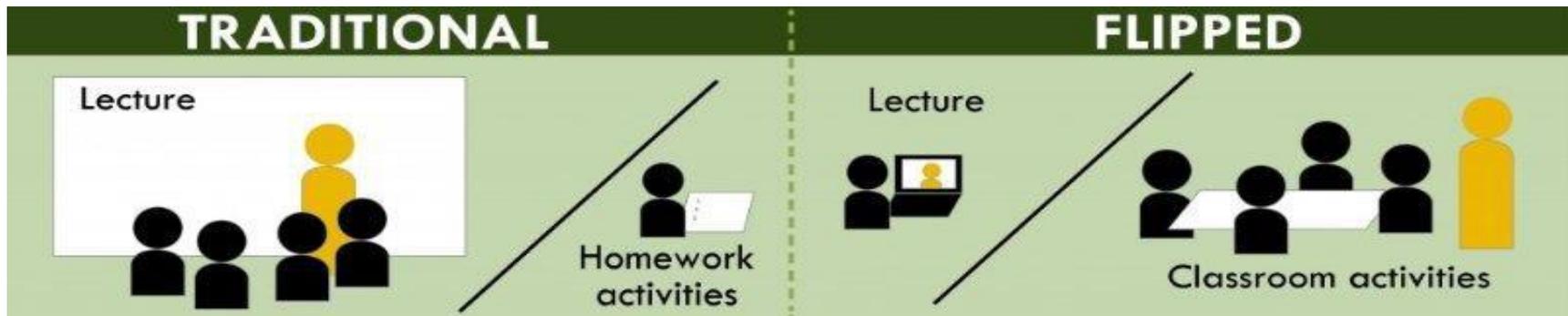
## 資訊科技學教策略：翻轉課堂 (Flipped Classroom)把傳統上課模式翻轉過來

步驟一：由老師將預先準備好的課程內容上載網絡

步驟二：讓學生先行在家中備課

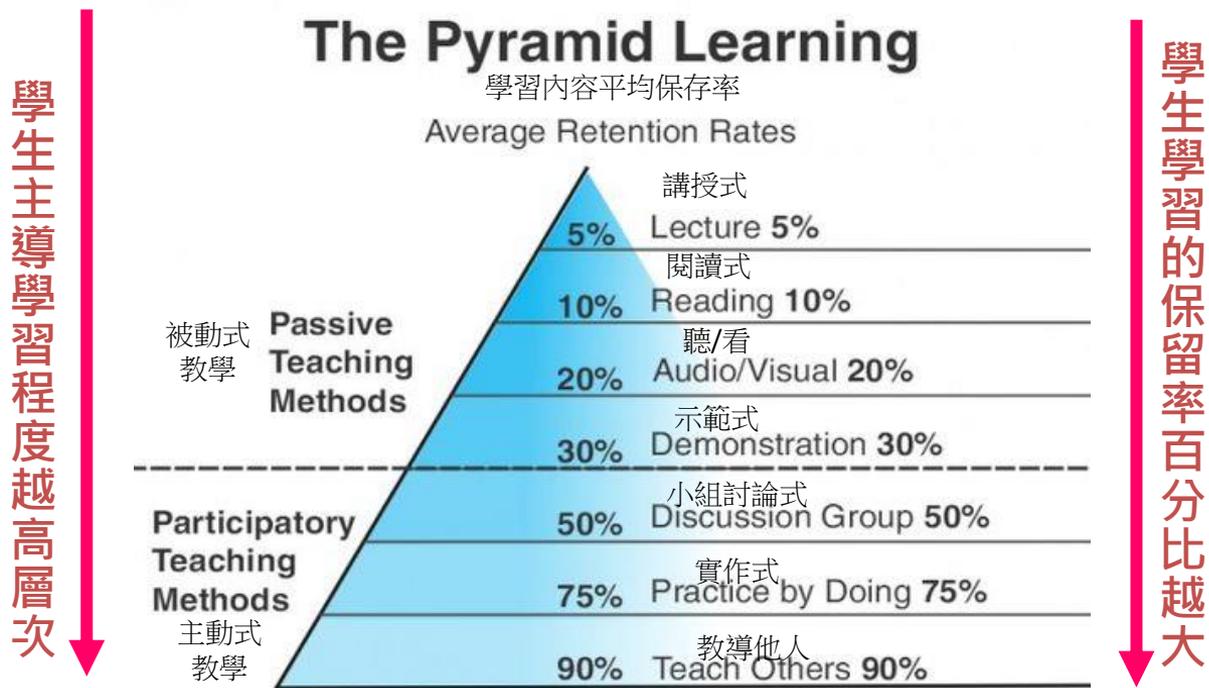
步驟三：在課堂上對議題發表意見、進行討論。

相對於傳統教學的講課模式，「翻轉課堂」讓老師在課堂上減少單向式講解，促進師生的課堂互動和溝通，提高學生的學習果效之餘，更能培養他們的自主學習。



# 資訊科技學教策略：翻轉課堂 (Flipped Classroom)

## 學習金字塔



Adapted from National Training Laboratories. Bethel, Maine

# Reboot

SALMAN KHAN'S YOUTUBE LESSONS HAVE ALREADY MADE HIM A GEEK CELEBRITY. NOW HE WANTS TO REINVENT HOMEWORK, BANISH CLASSROOM LECTURES—AND MAYBE SAVE EDUCATION

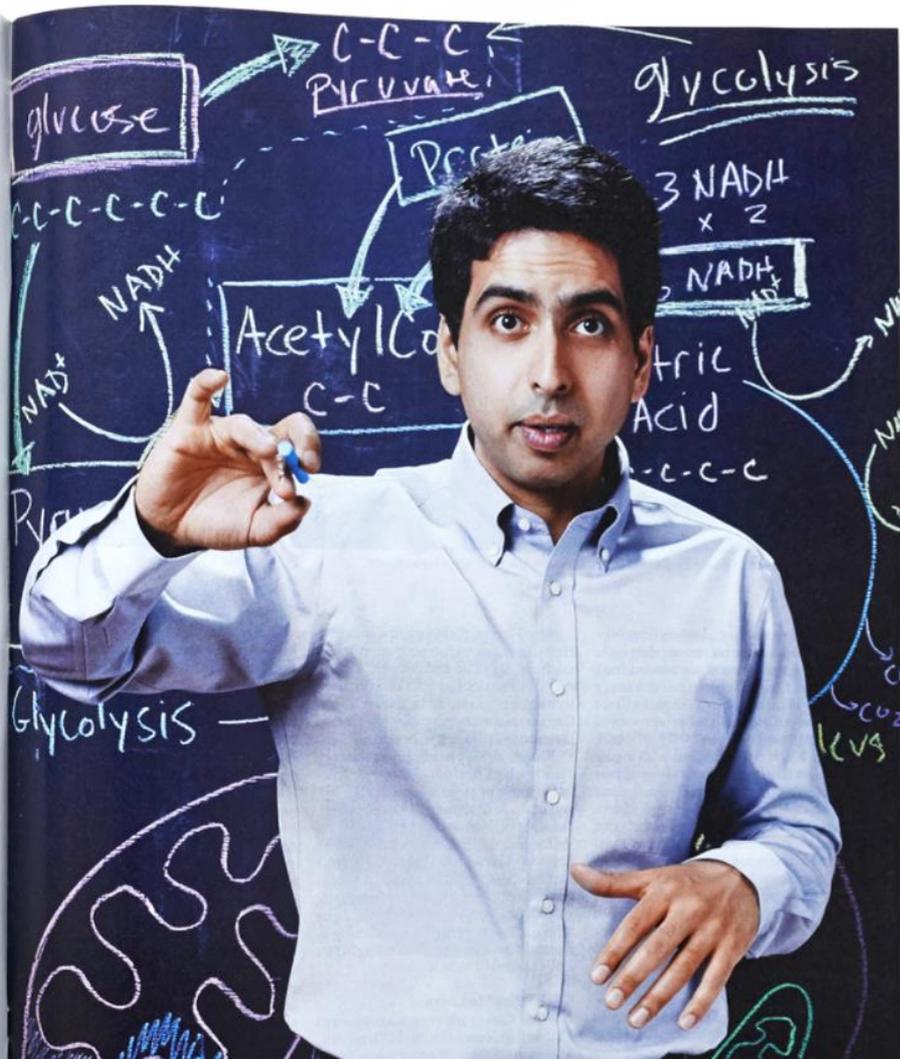
BY KAYLA WEBLEY

the

# School

**F**IFTH-GRADERS AT EASTSIDE College Preparatory School in East Palo Alto, Calif., sit at their desks with netbooks. They're in the middle of a math lesson, listening as a teacher explains how to convert percentages to decimals. "If we

of kids are learning by watching online videos. While the screen shows a march of equations and diagrams, the students never actually see the face of the lecturer. There's just a voice, deep, patient and unrehearsed—think NPR host crossed with Mister Peabody. "If we're going to





Salman Khan:

# Let's use video to reinvent education

TED2011 · 20:27 · Filmed Mar 2011

Subtitles available in 42 languages

View interactive transcript



Watch later



Favorite



Download



Rate

Share  
this idea



**3,377,859** Total  
views

Share this talk and  
track your influence!

Salman Khan talks about how and why he created the remarkable Khan Academy, a carefully structured series of educational videos offering complete curricula in math and, now, other subjects. He shows the power of interactive exercises, and calls for teachers to consider flipping

## Related playlists & talks





Student watch video to  
pre-learn  
(學生從短片中預習)

Teacher follow-up  
responses  
(老師延伸回應)

Active learning / e-Learning / Higher order activity  
(主動學習法/電子學習/高階思維活動)

20 mins

10 mins

30 mins

Flipping Classroom Framework (翻轉課堂框架)

## THE FOUR PILLARS OF FLIPPED LEARNING

<https://www.theedadvocate.org/the-four-pillars-of-flipped-learning/>

### 1. Flexible Environment (彈性時空、隨心所學)

Educators create flexible spaces where students choose when and where they learn. Additionally, educators who flip their classes are flexible in their expectations of **student timelines for learning (學)** and in their **assessments of student learning (評)**.

### 2. Learning Culture (知識建構、個人喜好)

In a Flipped Learning model, in-class time is dedicated to exploring topics in greater depth and creating rich learning opportunities. As a result, students are actively involved in **knowledge construction** as they participate in and **evaluate their learning** in a manner that is **personally meaningful**.

## 3. Intentional Content (學生為本、主動學習)

Flipped Learning Educators determine what they need to teach and what materials students should handle on their own. Educators use Intentional Content to maximize classroom time in order to adopt methods of **student-centered, active learning strategies**, depending on grade level and subject matter.

## 4. Professional Educator (適時識地、學習支援)

The role of a Professional Educator is even more important, and often more demanding, in a Flipped Classroom than in a traditional one. During class time, they need **to observe students**, providing them with **instant feedback** and an **assessment** their work. While Professional Educators take **on less visibly prominent roles** in a flipped classroom, they remain the essential part that enables Flipped Learning to occur successfully.

利用資訊科技發展  
翻轉教室及網上學與教材料

課前



拍攝預習短片  
設定評估題目

課時



高階學習活動  
分組協作學習  
學習過程紀錄

課後



課後學習成果  
知識技能鞏固  
課後延伸學習

流動學習裝置 + 無線網絡環境 + 學習管理系統 + 互動學教平台



## 示例二：學習管理系統 LEARNING MANAGEMENT SYSTEM



# 學習管理系統

1. 學習管理系統 ( LMS ) 是一種軟體應用程式或基於網路的使用進行規劃，實施和評估的具體學習過程的技術。通常一個學習管理系統提供了一個方法來創建和提供內容，監督學生的參與教員，並評估學生表現。一個學習管理系統還可以提供有能力使用諸如鏈式討論，視訊會議和論壇互動功能的學生。高級遠端教學小組，由美國國防部贊助已經形成了一套規範要求可共用內容物件參考模型 ( SCORM的 )，以鼓勵學習管理系統的標準化。
2. LMS ( 學習管理系統 ) 資訊管理系統，教師主導和電子學習課程和記錄學生的進步的軌道上來。他們使用的大型企業內部員工的LMS可以用來監測組織的教育和培訓的成效。也有利於確保國家和聯邦規定的課程及時交付。

3. LMS ( 學習管理系統 ) : 軟體 , 自動化管理的培訓。註冊使用者的LMS , 追蹤商品目錄 , 從課程的學員記錄的資料 , 並提供報告的管理。LMS是一個典型的用於處理多個出版商和供應商的課程。它通常不包括自己的創作能力 , 而是對管理的其他各種來源的課程重點是創造。
4. 學習管理系統 ( LMS )  
學習管理系統。的LMS通常是一個資料庫驅動的動態網站 , 提供教師和學生的環境測試和報告可。網站所有者通常有一個行政領域的內容 ( 圖片和文字 ) , 可更新和/或刪除。淬火熔化提供定制的LMS發展。

# 學習管理系統



常用的電子學習平台：

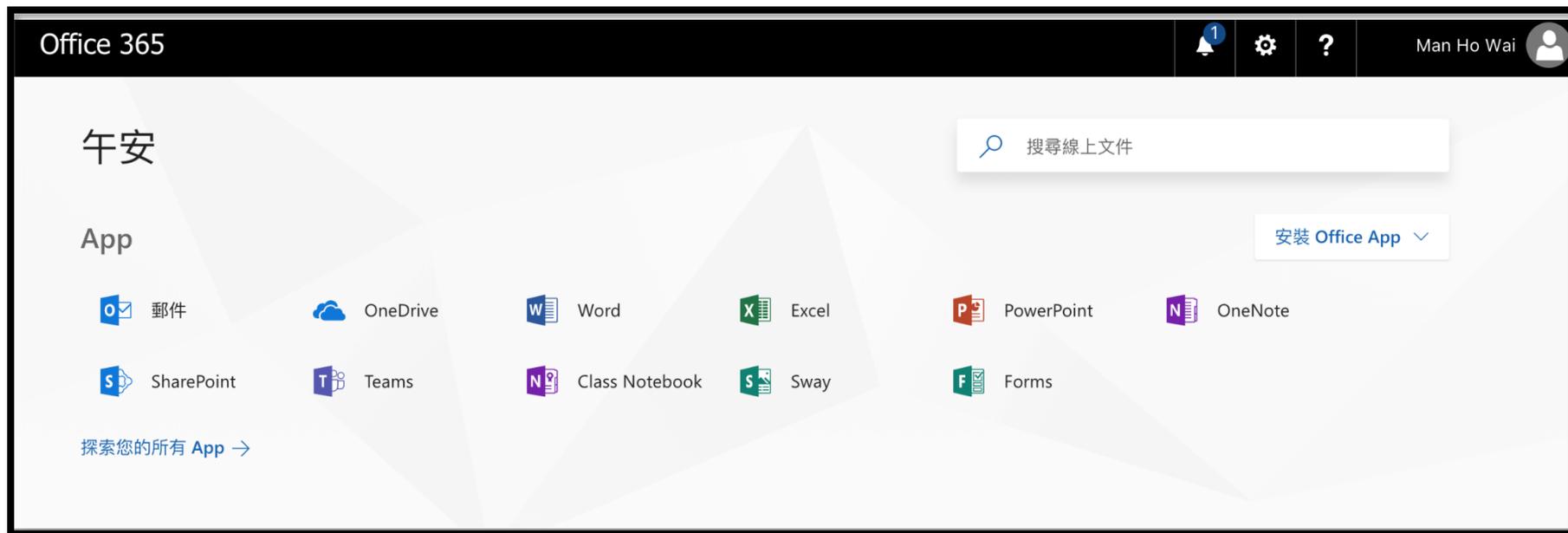
學習管理系統 LEARNING MANAGEMENT SYSTEM

- Google for Education
- Microsoft 365
- HKEdcity VLE



# 常用的電子學習平台： 學習管理系統 LEARNING MANAGEMENT SYSTEM

- Google for Education
- Microsoft 365
- HKEdcity VLE



## 常用的電子學習平台： 學習管理系統 LEARNING MANAGEMENT SYSTEM

- Google for Education
- Microsoft 365
- HKEdcity VLE



The screenshot shows the homepage of the HKEdcity Virtual Learning Environment (VLE). The header includes navigation links for '教師', '中學生', '小學生', '家長', and '企業', along with a search bar and '登入' (Login) and 'EN' buttons. The main banner features the title 'VLE 先導計劃' and a navigation menu with '關於計劃', '實行', '常見問題', '聯絡我們', and '前往VLE'. The main content area is titled '關於計劃' and contains the following text:

利用雲端、開放式標準的虛擬學習環境 (Virtual Learning Environment, VLE)，學校可融合並整全地管理教學、學習、評估、協作、回饋以至學習數據分析，深化電子學習。

**開放式標準學習管理系統**

- 專為學界設計的網上系統，助學校融合並整全地管理教學、學習、評估
- 學校可於系統建構課程和內容，系統化於全校推展電子學習
- 長遠而言，開放式VLE系統使教師不受平台限制，可靈活匯入／出多方教學資源（如校內外教師資源、第三方應用程式及教材）作教學用途
- 學生於系統內完成課業、評估、協作等學習活動並取得回饋，所有學習歷程和數據由系統完整記錄，供學校分析及參考

The URL <https://canvas.hkedcity.net> is visible in the bottom left corner.

# HKEdCity VLE

The screenshot displays the HKEdCity VLE dashboard. On the left is a vertical navigation menu with icons for: 帳戶 (Account), 管理員 (Administrator), 儀表板 (Dashboard), 課程 (Courses), 月曆 (Calendar), 收件箱 (Inbox), Commons, and 支援 Help (Support Help). The main content area is titled "儀表板" (Dashboard) and features a language selector (中, Eng) and a settings gear icon. The dashboard is organized into a grid of course cards. The top-left card is for "翻轉課堂測試課 FlipSC001" (Flipped Classroom Test Class FlipSC001). The top-right card is for "Course for Conferences CourseforConferences". The middle-left card is for "Pilot Schools Training Course PilotSchoolsTraining". The middle-right card is for "testing testing 2016-17". The bottom row contains two partially visible cards. On the right side, there is a "要進行" (To Do) section listing tasks with progress indicators and completion dates. Below this are sections for "即將推出" (Upcoming) and "近期回讀" (Recent Reads), both showing "現在什麼也沒有" (Nothing now). At the bottom of the right sidebar are two buttons: "開始新課程" (Start New Course) and "檢視成績" (View Grades).

儀表板

中 Eng

翻轉課堂測試課  
FlipSC001

Course for Conferences  
CourseforConferences

Pilot Schools Training Course  
PilotSchoolsTraining

testing  
testing  
2016-17

要進行

- 2 成績 Project 1 - proposal  
PilotSchoolsTraining  
20分數 • 日期 2016 7月 6 • 時間 23:59
- 2 成績 練習一  
FlipSC001  
4分數 • 日期 2016 12月 31 • 時間 23:59
- 6 成績 Pre-class Exercise  
PilotSchoolsTraining  
14分數 • 無截止日期
- 2 成績 Unnamed quiz  
PilotSchoolsTraining  
15分數 • 無截止日期
- 46 成績 Assignment 1  
PilotSchoolsTraining  
10分數 • 多個截止日期

即將推出 [檢視月曆](#)  
下一週什麼也沒有

近期回讀  
現在什麼也沒有

開始新課程

檢視成績



## 示例三：移動學習

# 多元化資訊科技教學示例

## 移動學習

香港中文大學- EduVenture



# 多元化資訊科技教學示例

## 移動學習

### 香港中文大學- EduVenture



EduVenture® Composer

需要登入才能使用這功能

EduVenture® Composer 是創建戶外學習教材的平台，操作簡易，登入後可於瀏覽器上進行教材編輯。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的戶外學習教材。平台題供包括選擇、問答、填充、錄音、數據收集、影相、概念圖等多種題型。多元化的題型能滿足教材設計者的各需求。教材數據將自動儲存至伺服器，並支持在 Windows PC和MAC上編輯。



EduVenture® eXplorer

下載 iPad 版 下載 iPhone 版

EduVenture® eXplorer 是一款在iPad或iPhone上運行的應用程式 (App)，在沒連接互聯網時仍可使用。學生先將指定教材下載至應用程式中，通過全球定位系統 (GPS) 的幫助在教材中的不同地點開展探究活動，回答相關問題及任務。答案會被自動儲存於應用程式中。借道使用此應用程式，學生可親身體驗真實環境，實踐自主學生，並強化以學生為中心的學習模式。



EduVenture® Retriever

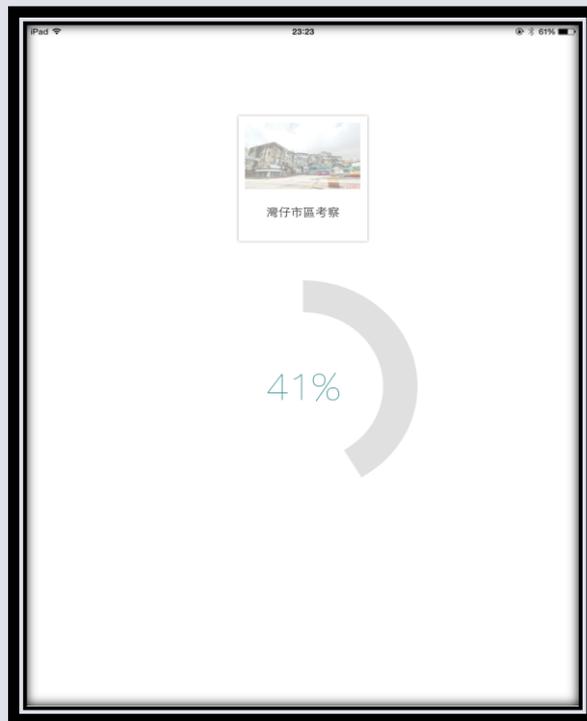
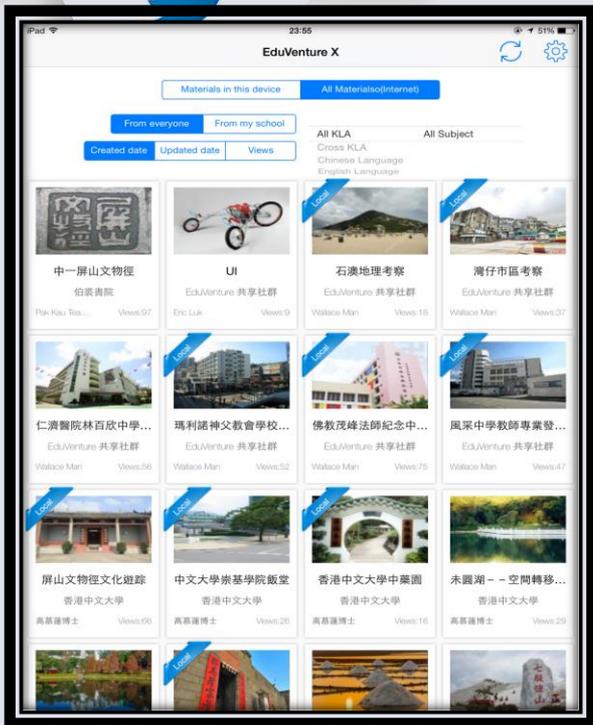
需要登入才能使用這功能

EduVenture® Retriever 是檢視及管理學生戶外學習成果的平台。教材設計者教師可閱讀、批改、檢索學習者的學習成果或相關的討論和分享，當中包括相片，錄音，統計資料等。該平台也可以幫助評估學習者的表現，教師可以基於學習成果給予學生反饋，幫助他們總結和反思學習過程。

# 多元化資訊科技教學示例

## 移動學習

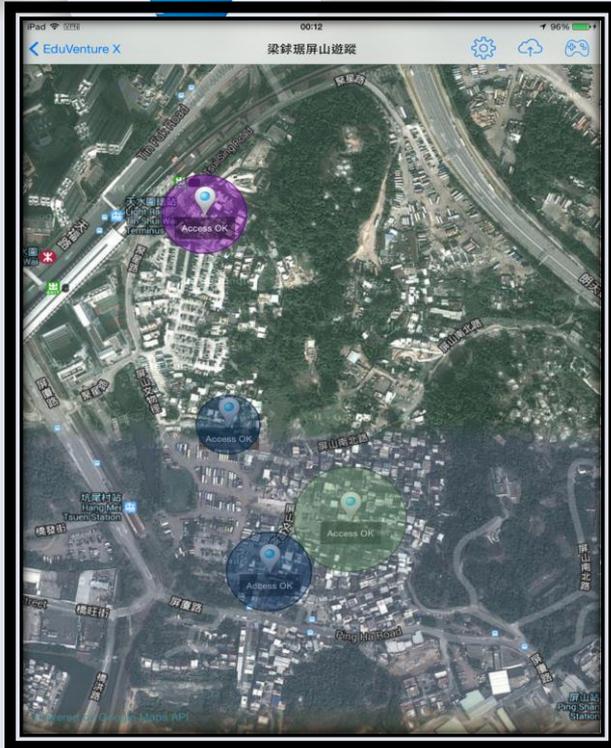
香港中文大學 - EduVenture



# 多元化資訊科技教學示例

## 移動學習

香港中文大學 - EduVenture





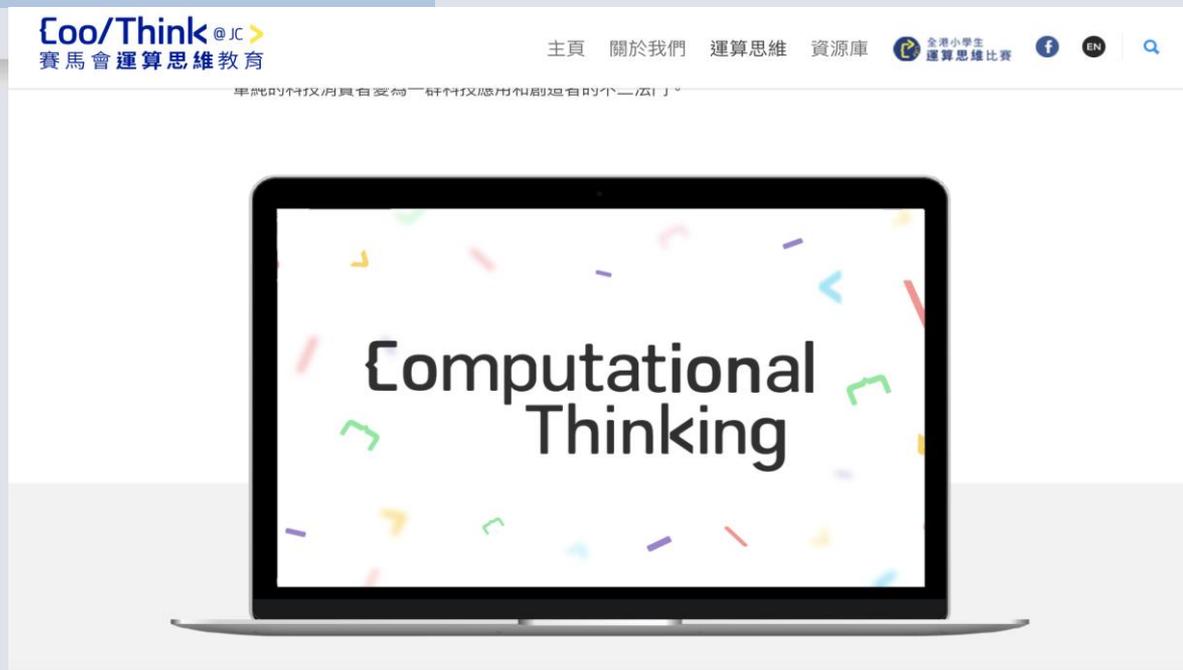
## 示例四：運算思維

# 多元化資訊科技教學示例

## 運算思維

「賽馬會運算思維教育」

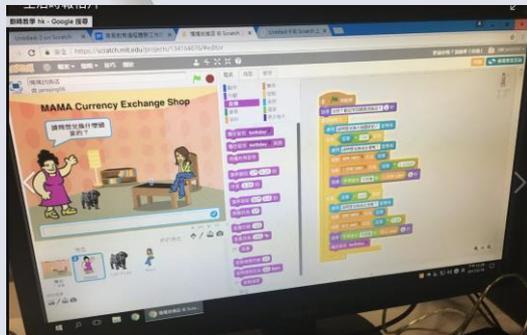
<https://www.coolthink.hk/ct/>



# 多元化資訊科技教學示例 運算思維

「賽馬會運算思維教育」

<https://www.coolthink.hk/ct/>



## 運算思維 Computational Thinking



1/ 拆解問題



3/ 歸納重點



2/ 找出規律



4/ 設計方法

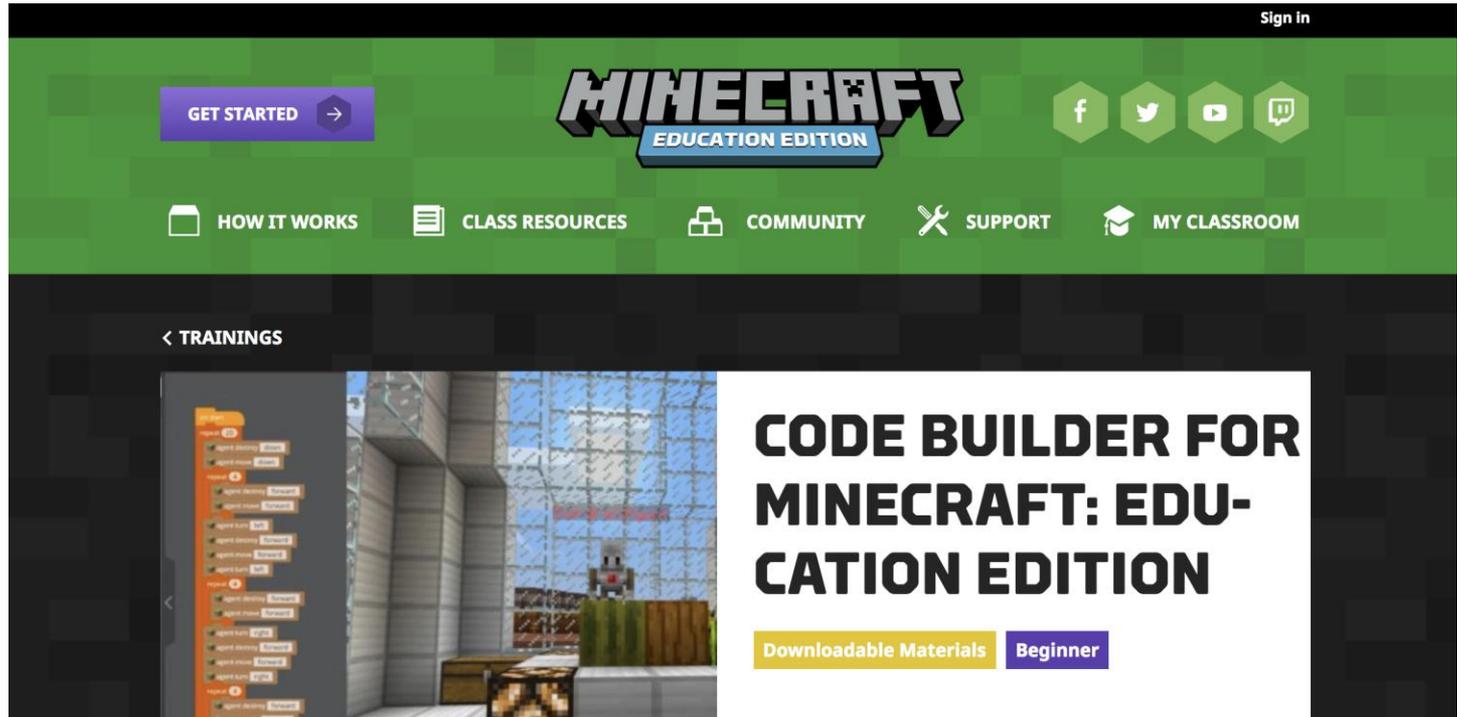


## 示例五：遊戲化學習 (MineCraft)

# 遊戲化學習 (Minecraft)

## Code Builder for Minecraft

<https://education.minecraft.net/trainings/code-builder-for-minecraft-education-edition/>



Sign In

GET STARTED →

**MINECRAFT**  
EDUCATION EDITION

f t y

HOW IT WORKS CLASS RESOURCES COMMUNITY SUPPORT MY CLASSROOM

< TRAININGS

**CODE BUILDER FOR  
MINECRAFT: EDU-  
CATION EDITION**

Downloadable Materials Beginner

# 了解電子學習的不同策略模式

不同工具及系統：<https://www.hkedcity.net/goelearning/>

The screenshot displays the Go eLearning website interface. At the top, there are navigation links for '教師' (Teachers), '中學生' (Secondary Students), '小學生' (Primary Students), '家長' (Parents), and '企業' (Business). A search bar is present with the placeholder text '輸入關鍵字'. On the right side of the top navigation, there are links for '登入 | 註冊' (Login | Register) and 'EN'. The Go eLearning logo is prominently displayed on the left. A green navigation bar contains the text '系列' (Series) and '關於Go eLearning' (About Go eLearning). Below this, there are icons for '234' and '2', and font size adjustment icons (A A A). The main content area features several featured articles and categories:

- 虛擬實境 (VR)**: A large blue banner with the text '虛擬實境 (VR)'. Below it is a photo of students using VR headsets. The article title is '虛擬實境 (VR)：進行單車訓練' (Virtual Reality (VR): Bicycling Training). The author is listed as '作者：梅志文助理校長 | 梁正彥老師 | 譚智聰老師'.
- Award Scheme for eLearning**: A section with a photo of a tablet and the text '配合網上工具教授靜態描寫' (Using online tools to teach static description).
- PlayPosit**: A section with a blue header and a video thumbnail showing a red horse. The text reads 'PlayPosit把題目嵌入影片內' (PlayPosit embeds questions in the video). The author is '作者：莊振沖老師'.
- Classcraft**: A purple header section with the text 'Classcraft 提升參與度的遊戲平台' (Classcraft: A game platform to increase participation).
- 21st Century Classroom**: A green header section with the text '透過聖經述事培育品格 (遊戲學習)' (Cultivating character through biblical narratives (game-based learning)).
- 運用平板電腦提升中文科學與教**: A purple header section with the text '運用EDpuzzle和Schoology教授《西' (Using EDpuzzle and Schoology to teach 'West').
- Socrative + Google Form**: A purple header section with the text 'Form+Socrative：即時分析中文科閱讀理解的答' (Form+Socrative: Real-time analysis of Chinese reading comprehension answers).



## 示例六：虛擬實境 (VR) 及混合實境 (MR)

# 虛擬實境 (VR)於教學應用

EduVenture VR : <http://vr.ev-cuhk.net/>

The screenshot shows the homepage of the EduVenture VR website. At the top, there is a navigation bar with the text "學習科學與科技中心 CLST | 香港中文大學 CUHK" and a search icon. Below this is a header with the CUHK logo, the EduVenture VR logo, and a navigation menu with links for "主頁", "VR學與教資源", "VR/AR 簡介", "先導學校", "活動回顧", and "聯絡我們". The main content area features a large image of a child wearing a VR headset. To the left of the image, the text reads "EduVenture®VR" followed by a description: "協助教師輕易製作低成本、具互動功能的360度全景虛擬實境戶外考察學習視頻，及結合真實場景的擴增實境教學". At the bottom, there is a footer with "Version 1.3.0", a logo for "Composer", and a section for "Mobile Apps 手機應用程式" with a smartphone icon.

學習科學與科技中心 CLST | 香港中文大學 CUHK | 🔍

  EduVenture®VR

[主頁](#) | [VR學與教資源](#) | [VR/AR 簡介](#) | [先導學校](#) | [活動回顧](#) | [聯絡我們](#)

## EduVenture®VR

協助教師輕易製作低成本、具互動功能的360度全景虛擬實境戶外考察學習視頻，及結合真實場景的擴增實境教學

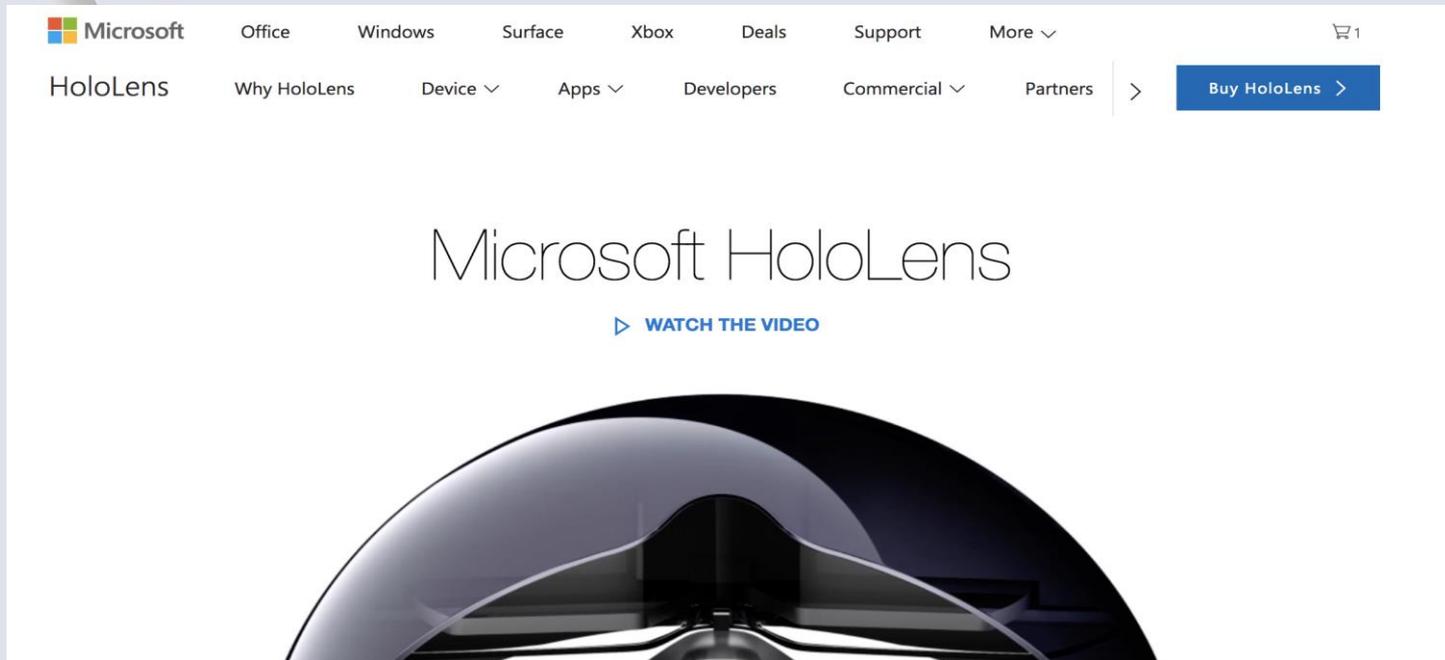
Version 1.3.0

 **Composer**

**Mobile Apps**  
手機應用程式 

# 虛擬實境 (VR)於教學應用

Microsoft HoloLens |  
<https://www.microsoft.com/en-us/hololens>



The image shows a screenshot of the Microsoft HoloLens website homepage. At the top, there is a navigation bar with the Microsoft logo and links for Office, Windows, Surface, Xbox, Deals, Support, and More. Below this, there is a secondary navigation bar with links for HoloLens, Why HoloLens, Device, Apps, Developers, Commercial, and Partners. A prominent blue button labeled "Buy HoloLens" is visible on the right side of the navigation bar. The main content area features the text "Microsoft HoloLens" in a large, clean font, followed by a blue play button icon and the text "WATCH THE VIDEO". At the bottom of the screenshot, the top portion of a Microsoft HoloLens headset is visible, showing its curved design and lens area.