To Enhance Students Interaction and Collaboration by Computer-supported Collaborative Learning Systems
SECTION 1

Centre for the Advancement of Information Technology in Education, The Chinese University of Hong Kong http://caite.fed.cuhk.edu.hk/

導師簡介

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  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**

Objectives

SESSION 1

- Familiarize with the theories, strategies and applications of CSCL;
- Understand the learning opportunities, features, strengths and limitations of CSCL
- Using cloud-based platforms to facilitate peer interaction and collaboration;

Schedule

1. The Definition and Importance of Collaborative Learning (CL)
2. Overview of Computer-supported Collaborative Learning System (CSCL)
3. Adapting CSCL Mobile Apps/Platforms under Wi-Fi Supported Network Environment and Cloud-based Technology to Enhance Collaborative Learning
4. Advantages and Examples of Using CSCL Apps/ Platforms to Facilitate Collaborative Learning (Google for Education / Microsoft 365)
5. Discussion on Assignment

Objectives

SESSION 2

- To identify and make appropriate use of quality CSCL systems or tools to facilitate peer interaction and collaboration;
- Design CSCL activities to facilitate peer interaction and collaboration as well as to monitor and measure the learning outcome

Schedule

1. Feedback and discussion on Participants' Assignments
2. Introduction and hands-on practices on free CSCL Apps/Platforms
3. Case Studies for Good Practice Cases for CSCL in Different KLAs
4. Common CSCL Pitfalls - Their Causes, Phenomenon and the Ways to Fix Them
5. Introduction of the Learning Villages System as an Example CSCL
6. Conclusion

Schedule

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1. The Definition and Importance of Collaborative Learning

- Collaborative learning refers to an instructional method whereby students are encouraged or required to work together on problem-solving or learning tasks.

- In its ideal form the collaboration involves the mutual engagement of learners in a coordinated effort to solve a problem together or to acquire together new knowledge (Lehtinen et al., 1998).

1. The Definition and Importance of Collaborative Learning

- Collaborative learning is a method that is in line with the new conceptions of learning and opposed to the traditional 'direct transmission' model

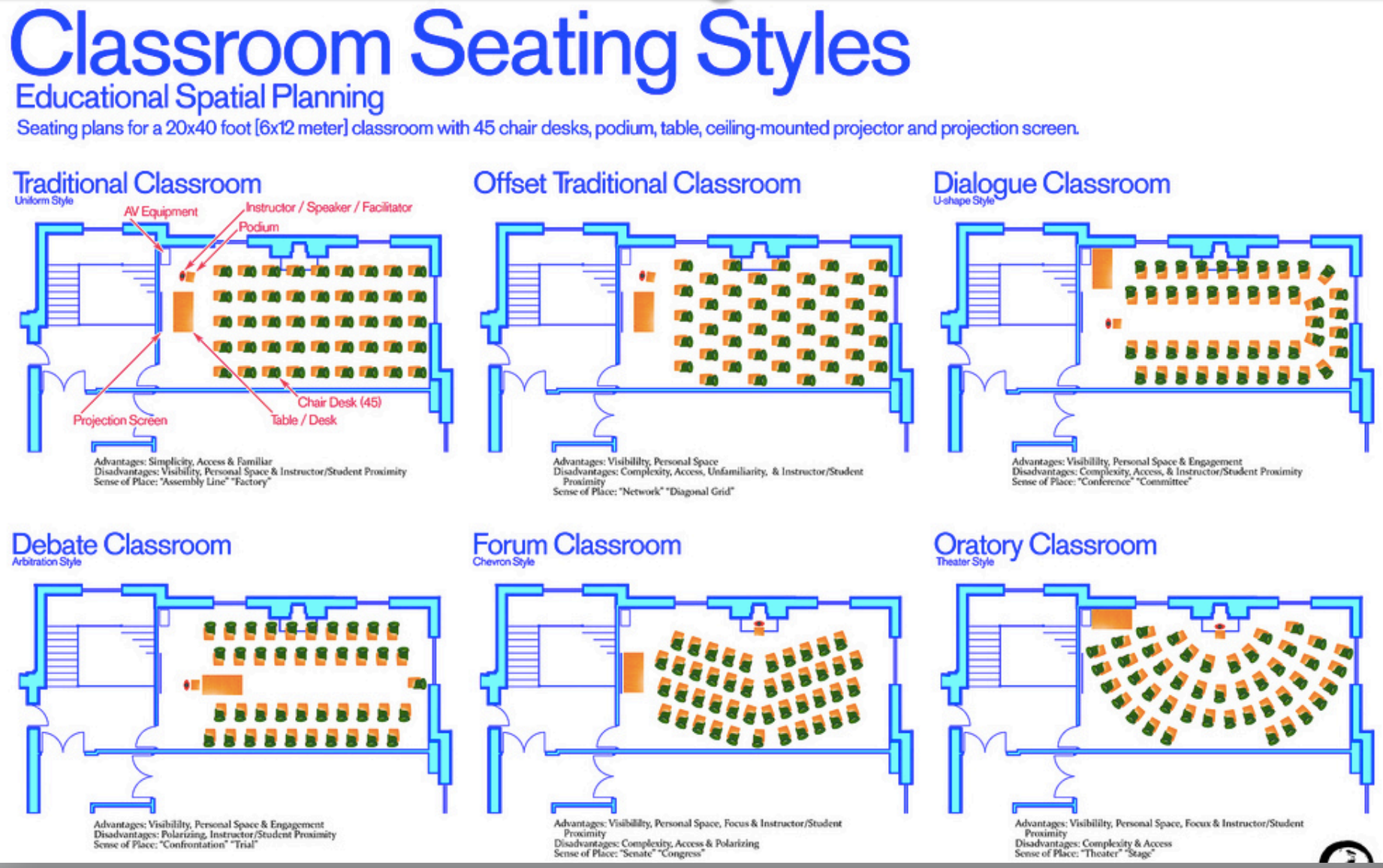
- learners are assumed to be passive, receptive, isolated receivers of knowledge and skills delivered by an external source (De Corte, 1996; Verschaffel et al., 1998).

1. The Definition and Importance of Collaborative Learning

- Collaborative learning is not a method because of the low predictability of specific types of interactions.

- Basically, collaborative learning takes the form of instructions to subjects (e.g. "You have to work together"), a physical setting (e.g. "Team mates work on the same table") and other institutional constraints (e.g. "Each group member will receive the mark given to the group project").

1. The Definition and Importance of Collaborative Learning



1. The Definition and Importance of Collaborative Learning

- Hence, the 'collaborative' situation is a kind of social contract, either between the peers or between the peers and the teacher (then it is a didactic contract).

- This contract specifies conditions under which some types of interactions may occur, there is no guarantee they will occur.

1. The Definition and Importance of Collaborative Learning

- For instance, the 'collaboration' contract implicitly implies that both learner contribute to the solution, but this is often not the case.

- Conversely, reciprocal tutoring (Palincsar and Brown, 1984) could be called 'a method', because subjects follow a scenario in which they have to perform particular types of interaction at particular times. (Dillenbourg (1999:5))

Collaborative Learning

- Qualitative learning method
- Student centered
- Respects and highlights team abilities and contributions
- Focused on the process of working together
- Student talk is stressed as a means of working together, sharing of authority, and group consensus

Cooperative Learning

- Quantitative learning method
- End product is content specific
- Teacher controlled and centered
- Tasks are divided and students are only responsible for his or her own piece
- Involves competition, usually between team members
- An “I” mentality instead of “we”

Panitz, T. (1996). A definition of collaborative vs cooperative learning. Retrieved January 24, 2007, from Deliberations Web site: http://www.londonmet.ac.uk/deliberations/collaborative-learning/panitz-paper.cfm

Differences and Similarities between Cooperation and Collaboration

Similarities

- Both are used as a learning tool in today's society to facilitate learning
- Both acquire knowledge and social skills.
- These methods involve the placing of individuals into teams

Differences

- Cooperative learning is more teacher oriented
- In collaborative learning the students are in control of their own learning
- Cooperative learning tends to facilitate competition between members

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2. Overview of Computer-supported Collaborative Learning System (CSCL)

- CSCL: Computer Supported Collaborative Learning

- CSCL is focused on how collaborative learning supported by technology can enhance peer interaction and work in groups, and how collaboration and technology facilitate sharing and distributing of knowledge and expertise among community members." (Lipponen, 2002)

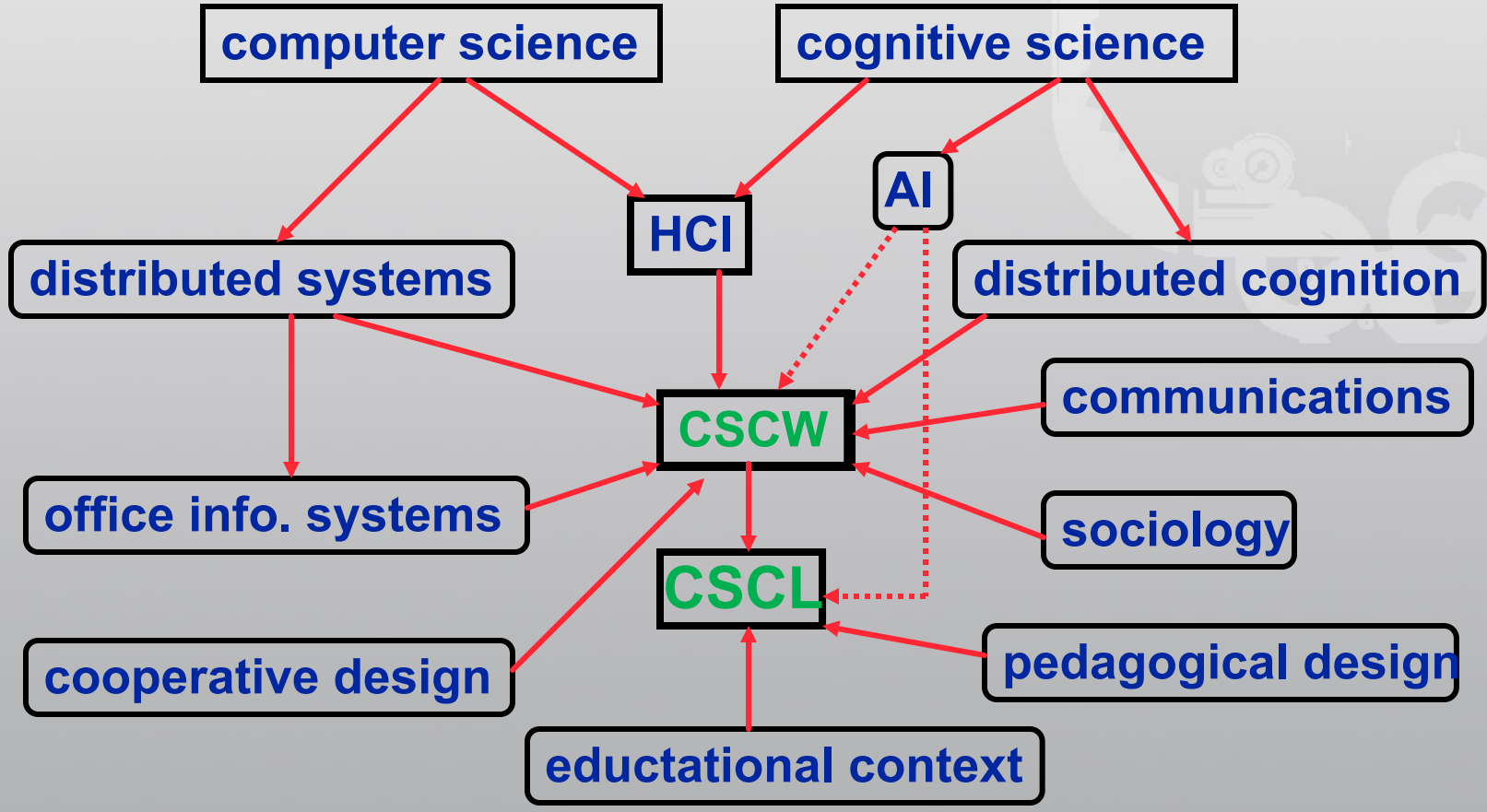
2. Overview of Computer-supported Collaborative Learning System (CSCL)

2. Overview of Computer-supported Collaborative Learning System (CSCL)

- CSCW: Computer Supported Cooperative Work
- Introduced by Irene Greif and Paul Cashman in 1984, meaning
- “A set of concerns about supporting multiple individuals working together with computer systems”
- Can be divided into two main areas, associated with 1) *CS* and 2) *CW*, respectively

2. Overview of Computer-supported Collaborative Learning System (CSCL)

Relationships between HCI, CSCW, and CSCL



2. Overview of Computer-supported Collaborative Learning System (CSCL)

Groupware

- Associated with the CS part of CSCW
- Defined by Ellis et al. In following way:
- “computer-based systems that support groups of people engaged in a common task (or goal) and that provide an interface to a shared environment”
- This creates a need for concepts to describe the various aspects of groupware

2. Overview of Computer-supported Collaborative Learning System (CSCL)

- Common task / goal
- Interface to a shared environment
- In addition, because there are more than one users:
  - Division of labor, explicit role assignment
  - Awareness of the others who are interacting with the shared environment (often not directly visible)

2. Overview of Computer-supported Collaborative Learning System (CSCL)

EXAMPLES

- Message systems (e.g. email)
- Multi-user editors
- Group decision support systems (e.g. discussion forums)
- Computer conferencing systems
- Intelligent information sharing systems
- Workflow coordination systems
- Cloud Based Platform

2. Overview of Computer-supported Collaborative Learning System (CSCL)

- Developments in ICT offer increasing possibilities for collaborative learning. E.g. technology enhanced learning environments can provide advanced means for the production of knowledge and constructive communication, and interactive and collaborative learning in (and between) classrooms and between teachers and learners.

2. Overview of Computer-supported Collaborative Learning System (CSCL)

- Computer-supported collaborative learning (CSCL) is considered as one of the most promising innovations to improve teaching and learning with the help of modern information and communication technology (De Corte, 1996; Lehtinen, Hakkarainen & Lipponen, 1998; Verschaffel, Lowyck, De Corte, Dhert & Vandeput, 1998).

2. Overview of Computer-supported Collaborative Learning System (CSCL)

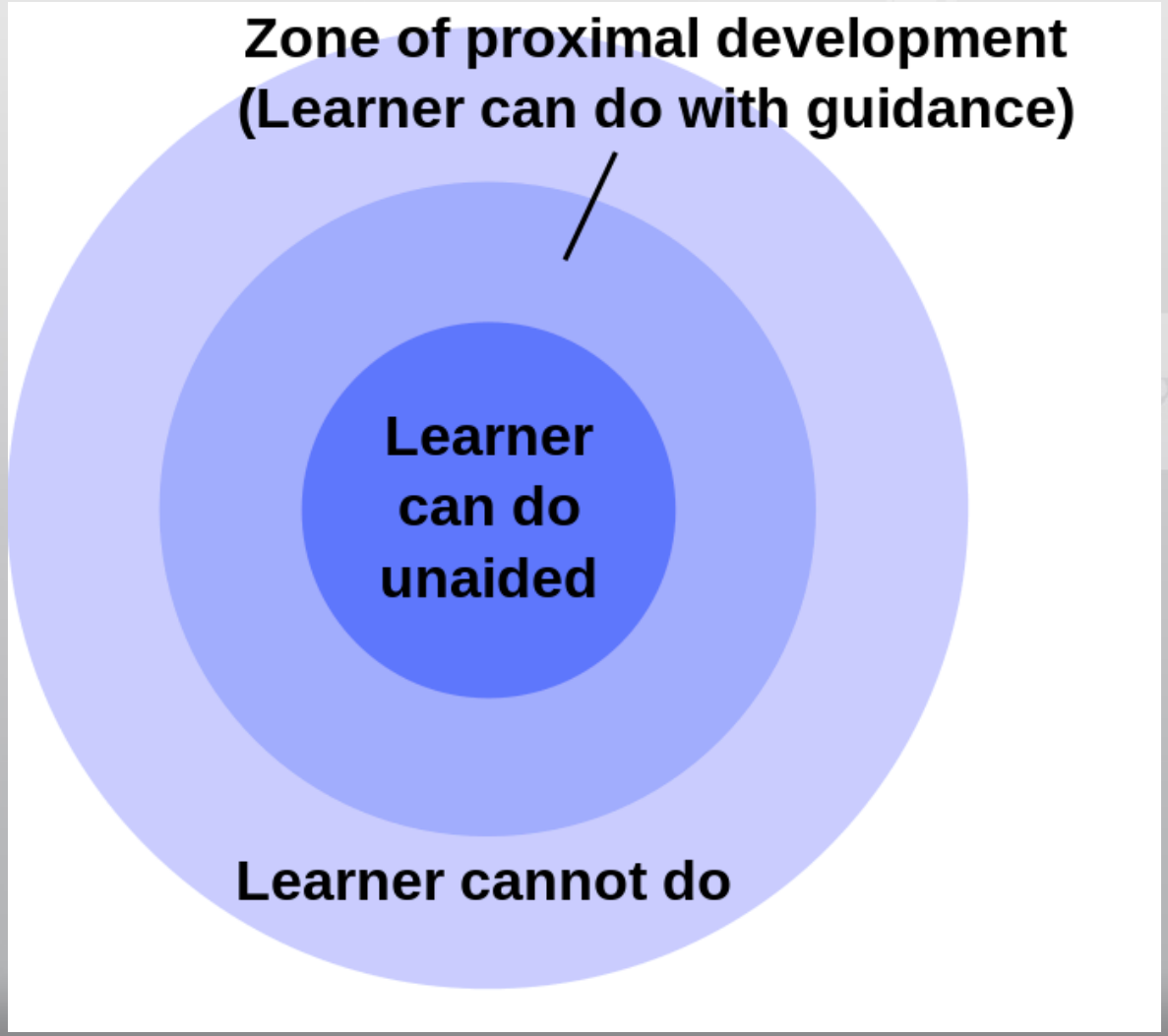
Bannon's deconstruction of CSCL

- *L*: What do people mean by Learning?
- *CL*: What do people mean by Collaborative Learning?
- *SCL*: What do people mean by Support for Collaborative Learning?
- *CSCL*: What do people mean by Computer Support for Collaborative Learning?

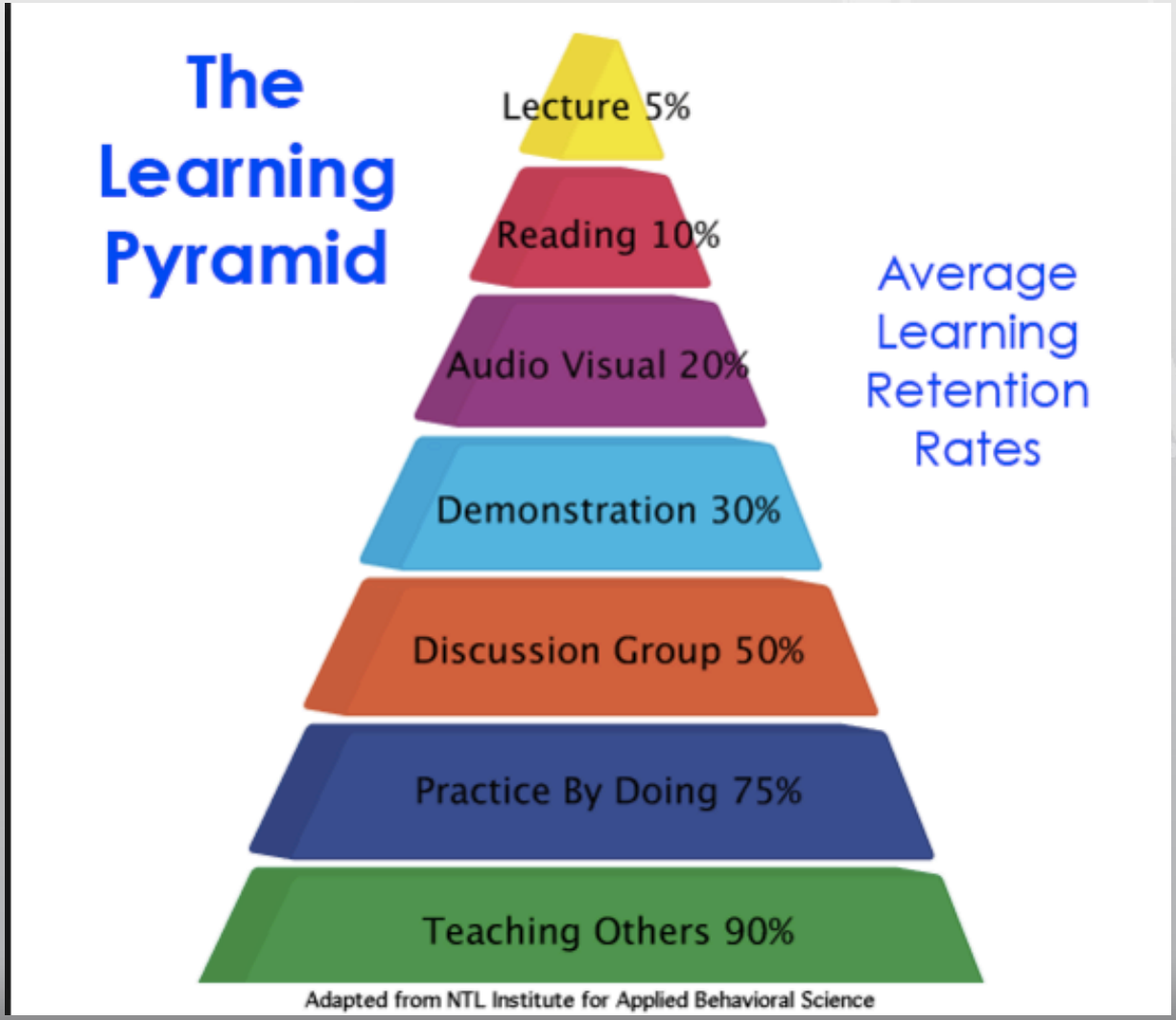
2. Overview of Computer-supported Collaborative Learning System (CSCL)

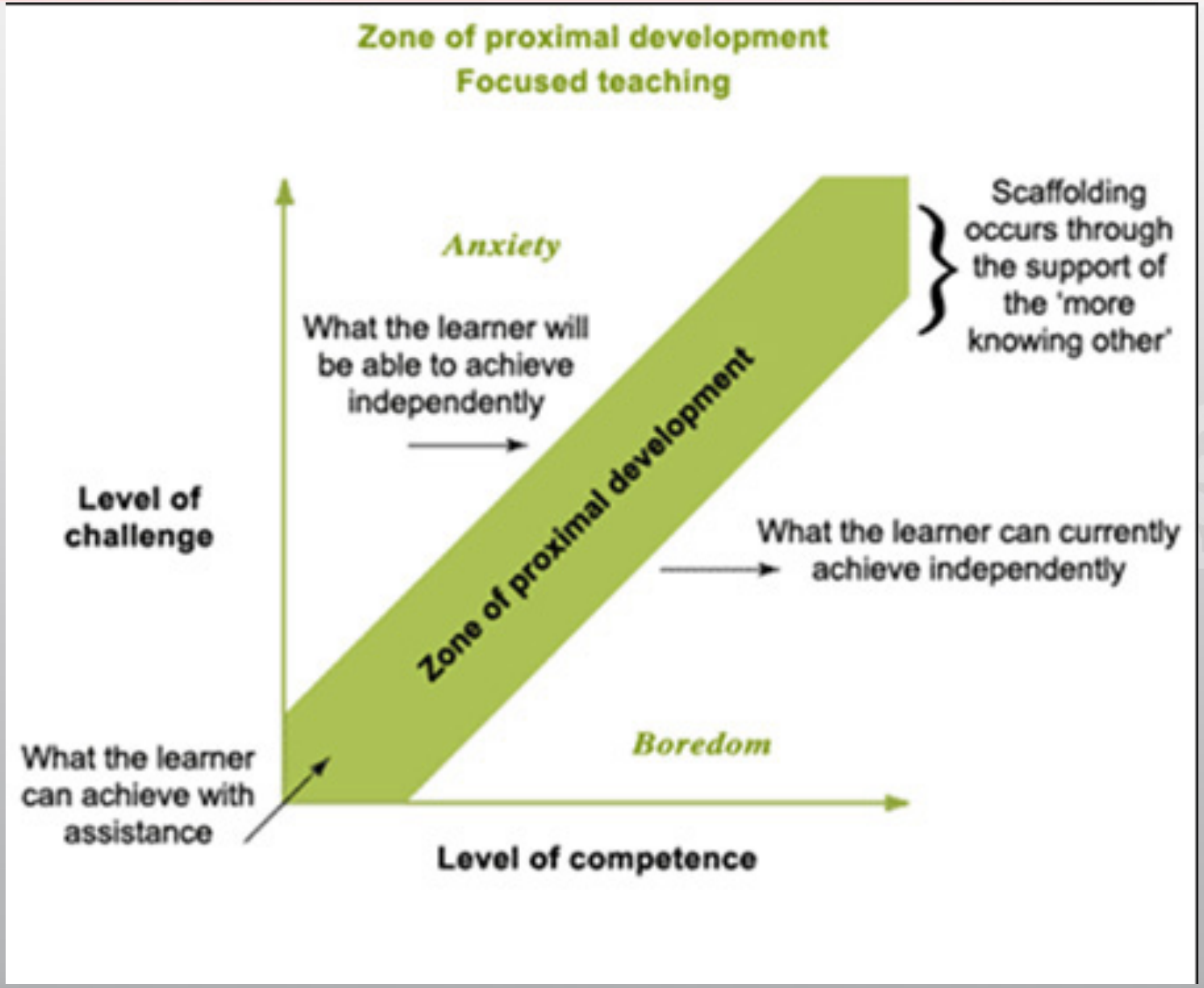
- New Knowledge
- Knowledge Building Principles
- Scardamalia (2002) identifies twelve interrelated principles of Knowledge building

Zone of Proximal Development Vygotsky (1978)



The learning pyramid relates to Vygotsky's theories of learning through social interactions




Zone of proximal development
Focused teaching
Anxiety
What the learner will be able to achieve independently
Level of challenge
Zone of proximal development
Scaffolding occurs through the support of the 'more knowing other'
What the learner can currently achieve independently
Boredom
What the learner can achieve with assistance
Level of competence

Knowledge Building Principles (1)

Real ideas and authentic problems

Unlike textbook problems, authentic problems in real life are ones that students really care about. In the knowledge building community, students gain understanding by producing real ideas based on authentic problems.

認識從生活中真實的問題出發

真正能引起學生關注的是生活中的真實問題，而不單是課本中的問題。在知識建構的群 體當中，學生透過處理真實的問題，建立深刻的想法和概念，以達至建構新知。

Knowledge Building Principles (2)

Improvable ideas All ideas from students are treated as improvable.

Students work continuously to improve the quality, coherence, and utility of ideas. The learning culture must make students feel safe and comfortable to take risks in revealing ignorance, voicing half-baked notions, giving and receiving criticism.

所有的概念與想法皆可改進

- 學生的概念和想法皆被視為可改進的。學生需要持續改進他們的想法和概念，以提升這些想 法和概念的質素。在這樣的學習過程中，學生 要經歷一些挑戰，包括要勇於發表未完善的意 見、要面對別人對自己的意見的批判。因此， 學習的文化必須讓學生感到安全，能自在地表達自己。

Knowledge Building Principles (3)

Idea diversity

- The diversity of ideas raised by students is essential to the development of knowledge advancement. To understand an idea is to understand the ideas that surround it, including those that stand in contrast to it. Idea diversity creates a rich environment for ideas to evolve into new and more refined forms.

多元化的意念與想法

- 學生提出多元化的意念和想法，正是知識進深 的必要過程。我們要了解一個概念，就必須了 解所有與之相關的概念，當中也包括與之相反的概念。一個充滿多元化的意念和想法的學習 環境，能有效促進概念的進化，達至更新和更 高的層次。

Knowledge Building Principles (4)

Rise above

- Through working with growingly diverse and complex problems, students sustainably improve their ideas and understanding. They eventually achieve new syntheses, more inclusive principles and higher level concepts.

自覺提昇討論層次，開展更深入的討論方向

- 通過愈來愈多元化和複雜的討論，學生持續改進他們的想法及對知識的理解，逐漸能綜合知識，創建出新的理論，學習到更廣泛的原則和更高層次的概念。

Knowledge Building Principles (5)

Epistemic agency

- Students themselves actively find their way to knowledge advancement. They fully consider the various ideas given by the learning community and negotiate a fit between each others' ideas. They set their own learning goals and plans, be self-motivated and engage in evaluation by themselves.

自覺參與主導知識建構的過程

- 學生主動尋找提升知識的方法。他們充分考慮 知識建構群體提出的各種意念和觀點，並互相 協商，尋求適切的結論。他們自主地訂立學習 目標和計劃，主動參與，並作出自我評估。

Knowledge Building Principles (6)

Community knowledge, collective responsibility

- Students' contributions to shared goals of the learning community are prized and rewarded as much as individual achievements. Team members produce ideas of value to others and share responsibility for the overall advancement of knowledge in the community.

共有的知識，集體對認知負責

- 學生對群體的共同學習目標作出貢獻。個人對 群體的貢獻會如個人的學習成就一樣，得到同 等的重視和表揚。作為知識建構群體的成員, 學生提供對群體的學習有價值的意見，並共同 承擔令群體知識進升的責任。

Knowledge Building Principles (7)

Democratizing knowledge

- All individuals are invited to contribute to the knowledge advancement in the classroom and take pride in the achievement.

創建新知民主化

- 所有學生不論成績能力參差都能參與知識提 升的過程，並因為參與創建新知而值得驕傲。

Knowledge Building Principles (8)

Symmetric knowledge advancement

- Expertise is distributed within and between communities. Symmetry in knowledge advancement results from knowledge exchange and from the fact that to give knowledge is to get knowledge.

知識上的共同增長

- 一個知識建構群體內的各成員或各個不同的 群體都擁有各自的專門知識。當他們將自己的 知識分享和交換，就能得著共同的知識增長。

Knowledge Building Principles (9)

Pervasive Knowledge building

- Knowledge building is not confined to particular occasions or subjects but pervades mental life— in and out of school.

不受時空限制建構新知

- 知識建構不受特定的情況或科目所局限。無論 在校內或校外，知識的建構滲透在日常生活 中。

Knowledge Building Principles (10)

Constructive uses of authoritative sources

- To support their learning, learners need to respect and understand authoritative sources to get in touch with the present state and growing-edge of knowledge with a critical attitude.

有建設性而不盲目地利用權威文獻

- 學生需要以批判性的角度，關注和理解具權威性的文獻，從中接觸一些知識的現狀及它們的最新發展

Knowledge Building Principles (11)

Knowledge building discourse

- Students are engaged in discourse to share, refine and transform knowledge to reach for the goal of knowledge advancement.

以建構新知為目的的討論

- 學生參與討論不單為了分享交流，他們還要改 善和革新他們的想法，達至建構新知的目的。

Knowledge Building Principles (12)

Embedded and transformative assessment

- Assessment is part of the effort to advance knowledge— it is embedded in the day-to-day learning process and used to identify problems as the learning proceeds. The community creates and engages in its own internal assessment, which is more fine-tuned and rigorous than external assessment.

Knowledge Building Principles (12)

<u>評估嵌進知識建構的過程中，以提升和改進群 體為目標的</u>

- 評估是促進知識增長的重要元素。評估應包含 在每天的學習過程中，用以識別出學習進行期 間出現的問題。
- 學習群體自主地設計和參與內 部評估。這樣的評估比外界的評估更加適切和準確。

Schedule

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5. Discussion on Assignment

3. Adapting CSCL Mobile Apps/Platforms under Wi-Fi Supported Network Environment

Overview of Mobile Apps/Platforms for CSCL

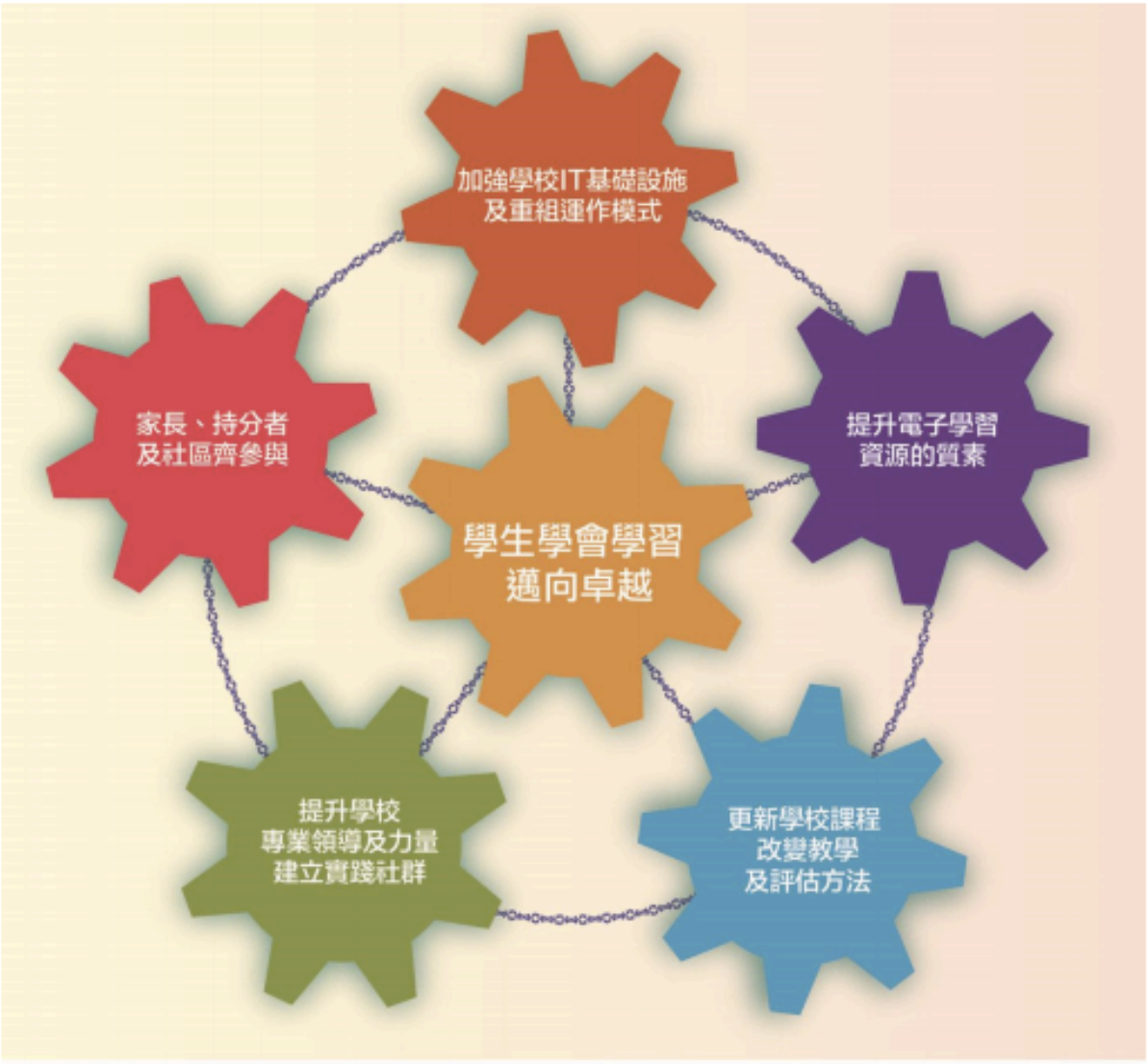
- Introduction on different platforms and their pros/ cons
- School network infrastructure and hardware initialization:
  - The current situation (in Hong Kong) and the best practice;
  - Discussion on available choices and measures;
  - Discussion on the future trend and how school and teacher could prepare

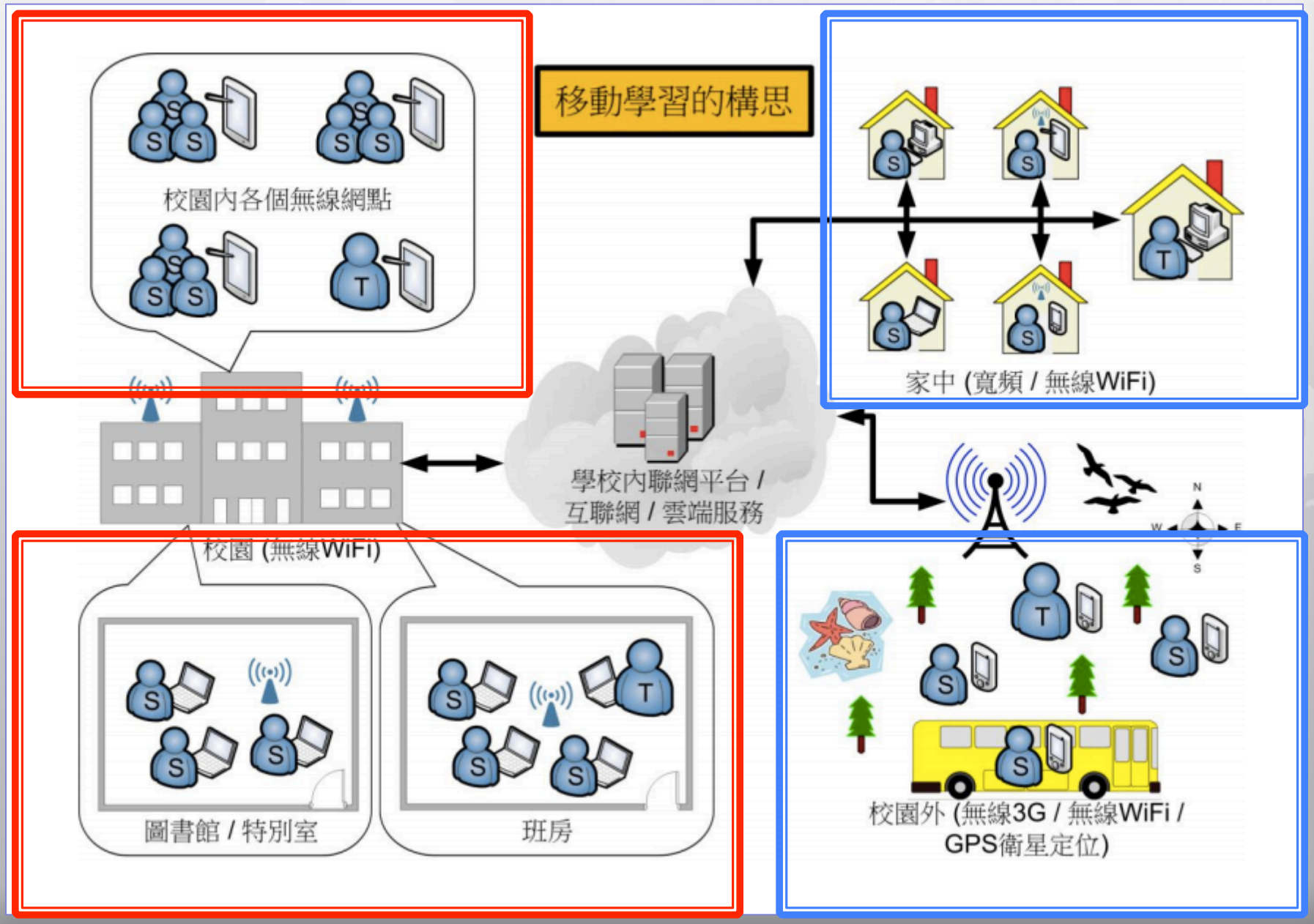
XXX XXX XXX 學校 201?

第四個資訊科技教育策略

https://www.edb.gov.hk/attachment/tc/edu-system/primary-secondary/applicable-to-primary-secondary/it-in-edu/Policies/4th_consultation_chi.pdf

第四個資訊科技教育策略




移動學習的構思
校園內各個無線網點
家中 (寬頻 / 無線WiFi)
學校內聯網平台 /
互聯網 / 雲端服務
校園 (無線WiFi)
圖書館 / 特別室
班房
校園外 (無線3G / 無線WiFi /
GPS衛星定位)

OFCA

重新開始

Get connected now

Welcome to Free Wi-Fi

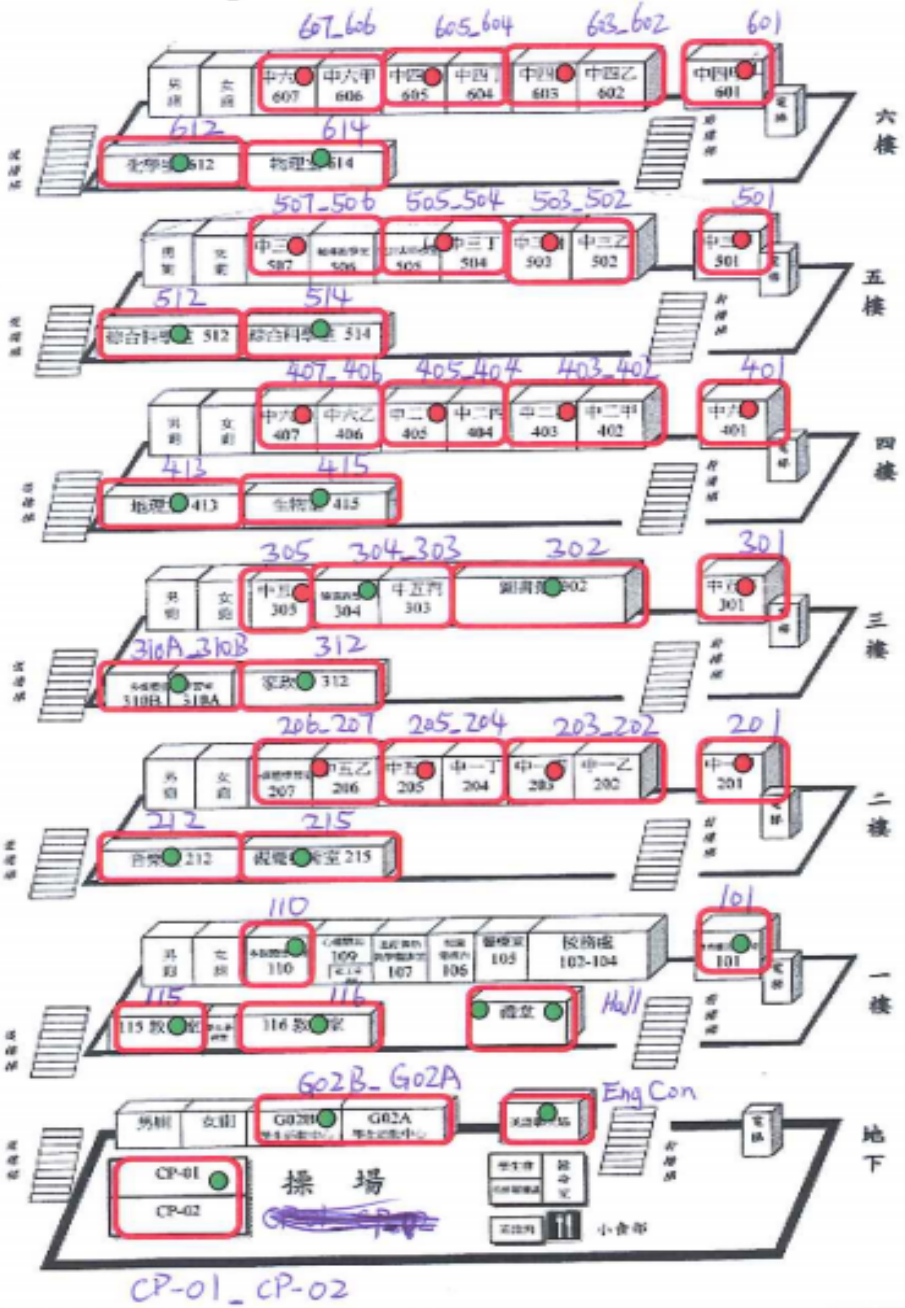
Passcode

Connect

下載速度: 100% 完成	219.77 Mbps
上載速度: 100% 完成	46.04 Mbps
網絡時延: 100% 完成	7 ms

Centre for
資訊科

Proposed AP Location



- Standard AP
- Add-On AP

電子學習學校支援計劃
以租賃模式為學校建立無線網絡基礎設施及提供相關服務

	Standard Provision	Add-on Service
每月	$5,040	$5,880
每月總額	$10,920	
每年	$60,480	$70,560
每年總額	$131,040	
三年總額	$393,120	

3. Adapting CSCL Mobile Apps/Platforms under Wi-Fi Supported Network Environment

Common hurdles in conducting traditional Collaborative Learning:

- Students' perspective;
- Teachers' perspective.

3. Adapting CSCL Mobile Apps/Platforms under Wi-Fi Supported Network Environment

Adopting mobile Apps/ Platforms in the process of Collaborative Learning and how it resolves the hurdles;

The following aspects would be stressed:

- Curriculum design;
- Lesson planning;
- Implementation;
- Students assessment.

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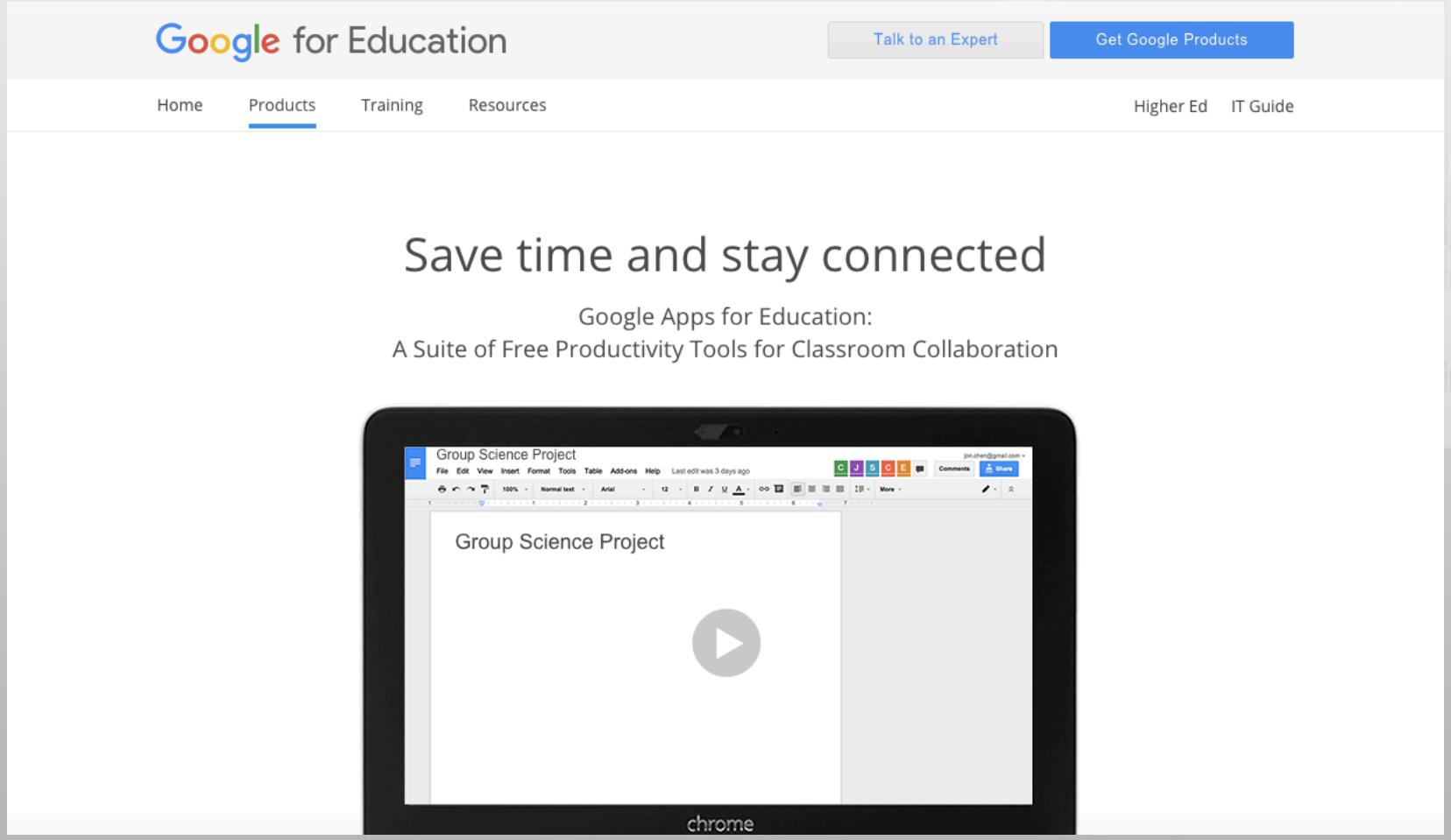
4. Advantages and Examples of Using CSCL Apps/Platforms to Facilitate Collaborative Learning

- Discussion on the roles of teachers and students.
- Introduction to the pedagogical approaches to integrate Mobile Free Apps/Platforms with the curriculum that foster collaborative learning.
- Introduction to Using Google for Education, for facilitating the design and implementation of collaborative learning:

Google for Education



Google for Education

Google Drive:

- Teaching material sharing;
- Document management;
- Cloud-based access.

Google Docs:

- Discussion;
- Co-authoring and co-construction;
- Knowledge building;
- Peer review/assessment.

Google for Education

Google Forms:

- Data collection;
- Data analysis;

Google Draw:

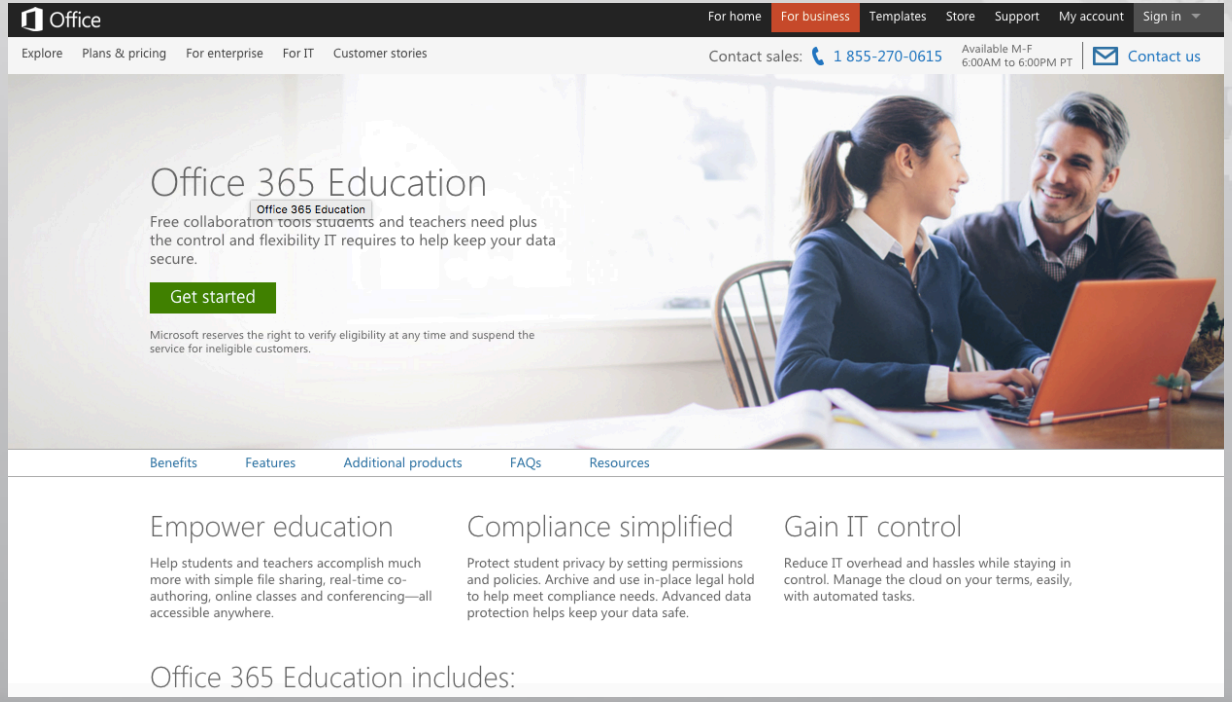
- Mind-mapping;
- Illustration of ideas;
- Knowledge Building with non-verbal elements

Microsoft 365

Introduction to Using Microsoft 365, for facilitating the design and implementation of collaborative learning.

Microsoft 365

- Here is the URL for application on Office 365
- https://products.office.com/en-us/academic/office-365-education-plan



Microsoft 365

1. Click the green Get started button to begin a FREE trial.
2. Complete the form to create an account and verify that you are affiliated with your organization.
3. During the trial, follow the steps in the Office 365 admin portal to verify that your organization is a qualified academic institution. If you are nearing the end of your 30 day trial and have not received your eligibility verification notice from Office 365, please contact customer support.

Microsoft 365

4. If eligibility is confirmed, Office 365 Education offers will become available in the Office 365 admin portal.
5. Go to the License Management tab in the admin portal to reassign your trial users to the Office 365 Education offer.

Microsoft 365

Microsoft One Drive/Share Point:

- Teaching material sharing;
- Document management;
- Cloud-based access.

Microsoft One Note:

- Sharing ideas/messages;

Microsoft Task/Calendar

- Communication among team members;
- Project and time management.

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5. Discussion on Assignment

- to design a lesson plan that utilizes the advantages of any CSCL Apps/Platforms.

- They have to prepare the preliminary ideas/ elements and complete their assignment on a word (template) file.

5. Discussion on Assignment

- The requirements of this assignment includes:
  - Choose a subject or KLA that they teach based on the curriculum in Hong Kong;
  - Design a lesson plan on either Google for Education or Microsoft 365 and state the corresponding features.

5. Discussion on Assignment

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  - Choose a subject or KLA that they teach based on the curriculum in Hong Kong;
  - Design a lesson plan on either Google for Education or Microsoft 365 and state the corresponding features.

5. Discussion on Assignment

OR

- Design a Shared Document or Shared Google Form with Collaborative Learning Design
- Shared the File with cuhkcscl2015@gmail.com

5. Discussion on Assignment

- Email: cuhkcscl2015@gmail.com
- Deadline: on or before 2 days before next lesson

- Mobile: 6112 2400 (Mr. MAN)
- Email: wallace_mhw@alumni.cuhk.net