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Student collaboration and engagement – is it more than flipping a classroom?

Dr Susan Bridges

Associate Professor

Centre for the Enhancement of Teaching and Learning/ Faculty of Education

Assistant Dean (Curriculum Innovation)

Faculty of Education The University of Hong Kong

Adjunct Professor of Australian Catholic University

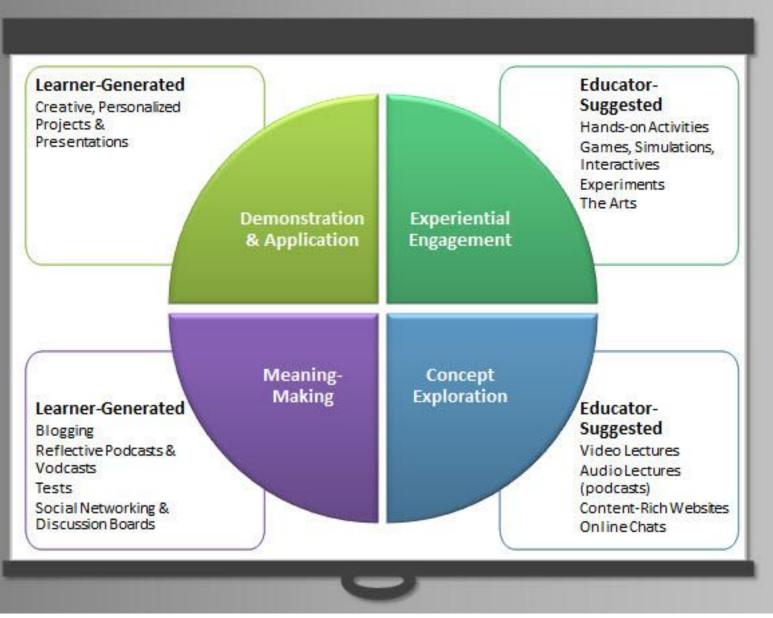
A flipped classroom



Flipping the Classroom - Simply Speaking

PennState's View of the Flipped Classroom

Rethinking higher education designs



http://ileighanne.files.wordpress.com/2013/01/flipped-classroom-learning-cycles.jpg

Accessed 7/4/2014

The flipped classroom – fallacies & opportunities

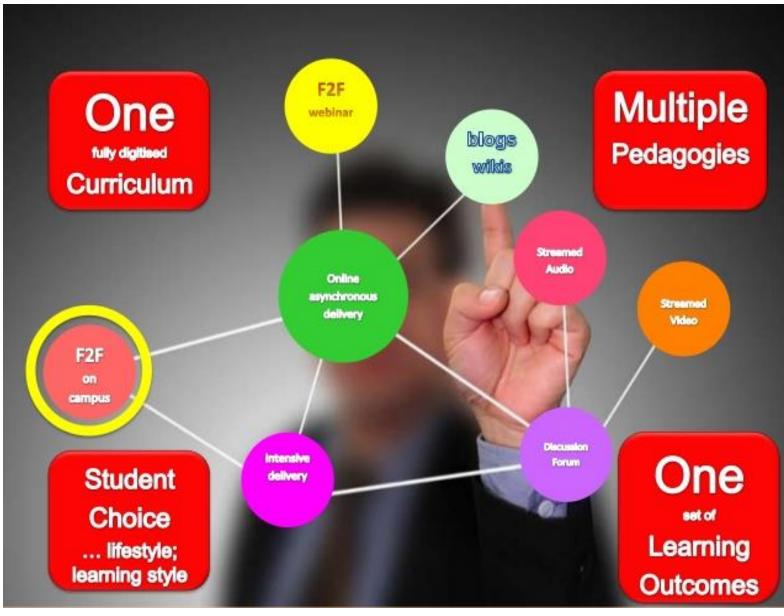
Fallacies

- Content is still owned by the lecturer
- 'Learning by doing' is an add-on to presentation modes
- Lectures are converted to homework
- Using new 'free' class time for more direct instruction

Opportunities

- Active learning
 - Inquiry
 - Research and knowledge building
- Task design for deep learning
- Differentiated learning > own pace
- Constructive, Socratic conversations

- Participatory learnercentric; student as consumer and producer of knowledge
- Authentic learning: experiences grounded in the real world; outcomedriven; lasts beyond the test
- Flexible: multi-modal format; catering to different learning styles and different lifestyles



Dr Jeremy Williams, Griffith University

http://www.slideshare.net/jembwilliams/courting-the-future-student-adjusting-to-disruptive-innovation-in-the-higher-education-sector Accessed 7/4/2014

Building new spaces for student collaboration

The Centennial Campus

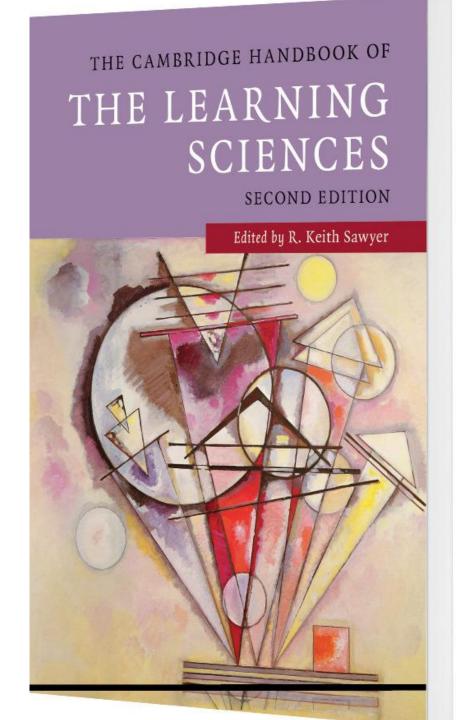
- Varied, new spaces for student learning
- Shopping mall meets library...

The Chi Wah Learning Commons

The Learning Sciences and Flipped Classrooms

Cambridge Handbook of the Learning Sciences (CHLS)

- R. Keith Sawyer, Editor
- 1st edition (2006)
 - By December 2011, 5,000 copies sold
 - translated into Japanese and Chinese.
- 2nd edition (August 2014)
 - total number of chapters has only grown by two—from 34 to 36
 - new outline reflects the changes and development of a vibrant and rapidly growing field
 - contributors to the first edition were almost exclusively from the USA; in contrast, contributors to the second edition represent the many countries with active ongoing research in the learning sciences.



Contents

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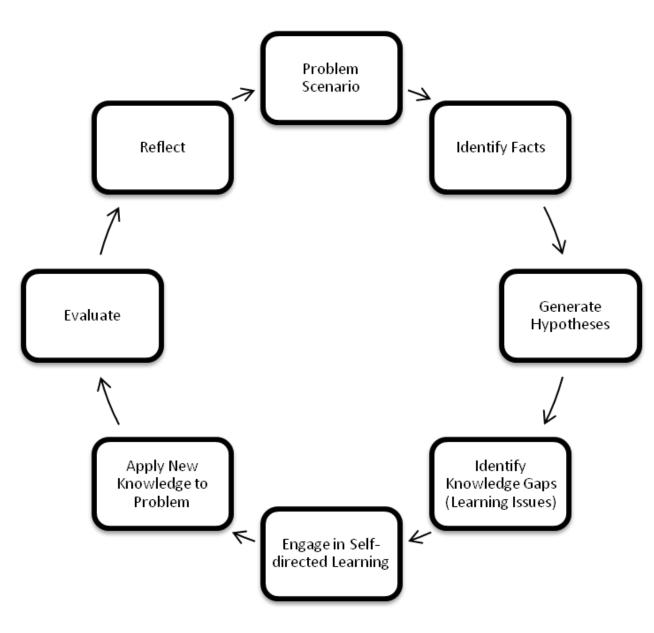
Ch15 Problem-based learning

Jingyan Lu Susan Bridges *The University of Hong Kong, China*

Cindy E. Hmelo-Silver *Rutgers University, USA*

Introduction

- Problem-based Learning (PBL) is an active approach to learning in which learners collaborate in understanding and solving complex, ill-structured problems
- Because of their complex and ill-structured nature, these problems require learners to share their current knowledge, negotiate among alternative ideas, search for information, and to construct principled arguments to support their proposed solutions
- The goals of PBL address a large range of cognitive and affective dimensions with studies indicating that PBL students are productively engaged in deep approaches to learning and problem-solving
- As students engage with ill-structured problems, they develop skills in reasoning and selfdirected learning, and construct flexible knowledge
- Compared to traditional forms of instruction, PBL enhances students' ability to transfer knowledge to new problems, and to achieve more coherent understandings



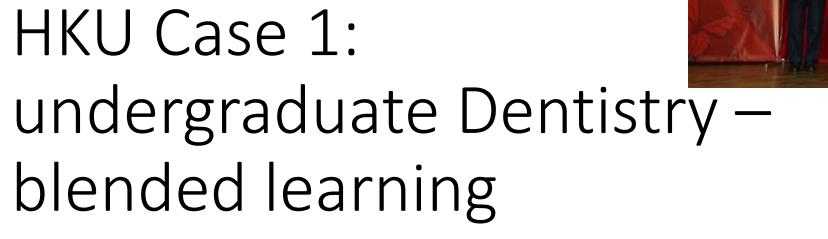
Dolmans & Schmidt's (2006) synthesis of studies on cognitive and motivational effects of small-group learning in PBL > engagement in the following aspects of the PBL process was consequential to stimulating students' "intrinsic interest in the subject matter":

- activation of prior knowledge;
- recall of information;
- cumulative reasoning;
- theory building;
- cognitive conflicts leading to conceptual change; and
- collaborative learning construction (p.333).

The problem cycle (Hmelo-Silver, 2004)

PBL as curriculum design

- a curriculum-level pedagogical strategy NOT one component of a curriculum that is otherwise didactic and instructionist
- Requires careful mapping of content and organization of problems aligned to learning outcomes across the years of the curriculum
 - becomes both the driver and link across disciplines
- Characteristics of successful PBL environments include:
 - content integration across a range of disciplines;
 - collaboration and teamwork;
 - application and synthesis of new knowledge towards greater understanding of the dimensions of the problem at hand;
 - reflection on the learning process with self and peer assessment;
 - engagement with 'real-world' problems and issues; and
 - examination processes measuring progress towards the goals of PBL.



Infusing educational technologies within traditional PBL (PBL2.0)

Excellence Teaching, Research & Knowledge

Exchange 2012 邞

Goals of PBL achieved at <u>a macro level</u> through full implementation of an overarching, integrated curriculum design and at <u>a micro level</u> in the complex interactions that occur in small-group, student-led and educator facilitated discussions

PBL2.0: E-learning for Problem-based Learning (PBL) @Faculty of Dentistry: The Team

Team member	Profile	Team member	Profile	
	 Dr Susan Bridges Assistant Professor, Dental Education & elearning Assistant Dean (Curriculum Development) (2010- 11) Undergraduate Education (2012) Curriculum development, including e-learning initiatives, to enhance student learning outcomes and to support territory-wide curriculum reform measures. FYE Coordinator (2011-now) 		 Prof Cynthia Yiu Professor in Paediatric Dentistry Associate Dean (Undergraduate Education) & Chair FCDC, BUS (2010-12) 2009 Outstanding Teacher Award by the HKU Faculty of Dentistry. Actively involved in PBL and development of the new 6-year dental curriculum in the Faculty of Dentistry. 	Junior Junior Faculty Adjunct Faculty Faculty Educational Image: Constraint of the second seco
	 Dr Michael Botelho Clinical Associate Professor in Oral Rehabilitation Year Director for BDS 5 for over a decade Assistant Dean (Undergraduate Education) (2010-11) Member, Faculty Task Force for the development and implementation of the BDS PBL Curriculum since its inception in 1998. 		 Prof Edward Lo Professor in Dental Public Health Full-time teacher of the University of Hong Kong for 23 years. Undergraduate Programme Director in 1997-2002 Chair, PBL review Group 	Senior Faculty
F	 Dr Rory Watt Assistant Professor in Oral Bioscioences Chair Problem Development Group (BDS1b) Development, delivery and review of the brandnew 6-year BDSI curriculum and syllabus 		 Dr Yanqi Yang Clinical Assistant Professor in Orthodontics Undergraduate Programme Director in Orthodontics (2010-now) Actively involving in Problem Based Learning ever 	Curriculum Consultant Blended Learning Advisor



Dr Peter Tsang

Clinical Assistant Professor in Oral Rehabilitation

- PBL for more than a decade.
- BDS I Year Director and past Chairman of the BDS I Problem Development Group
- PBL facilitator

e-Learning Officer • Supporting the faculty e-Learning development and managing web learning courses (Moodle & WebCT) for the undergraduate and postgraduate

- Actively involving in Problem Based Learning ever since she was appointed to the Faculty of Dentistry

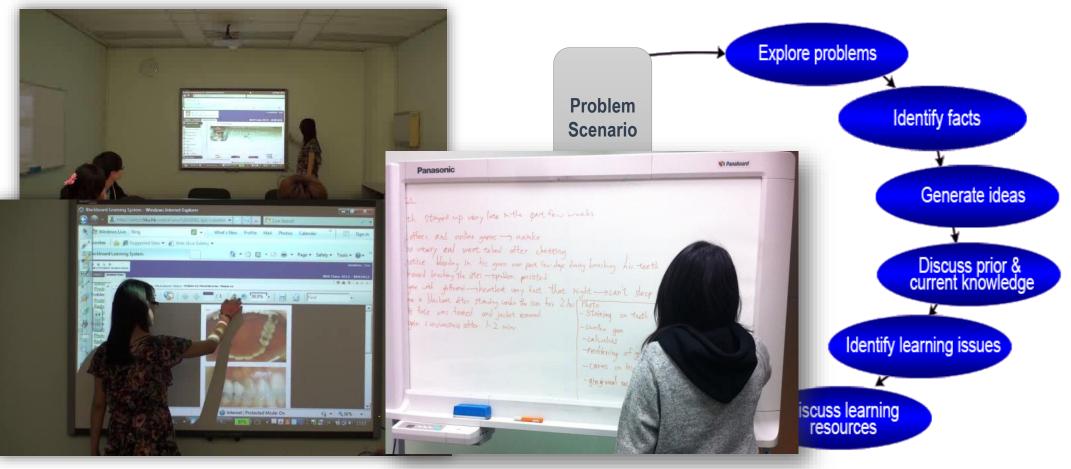
Ms Jessica Wong

curriculum.

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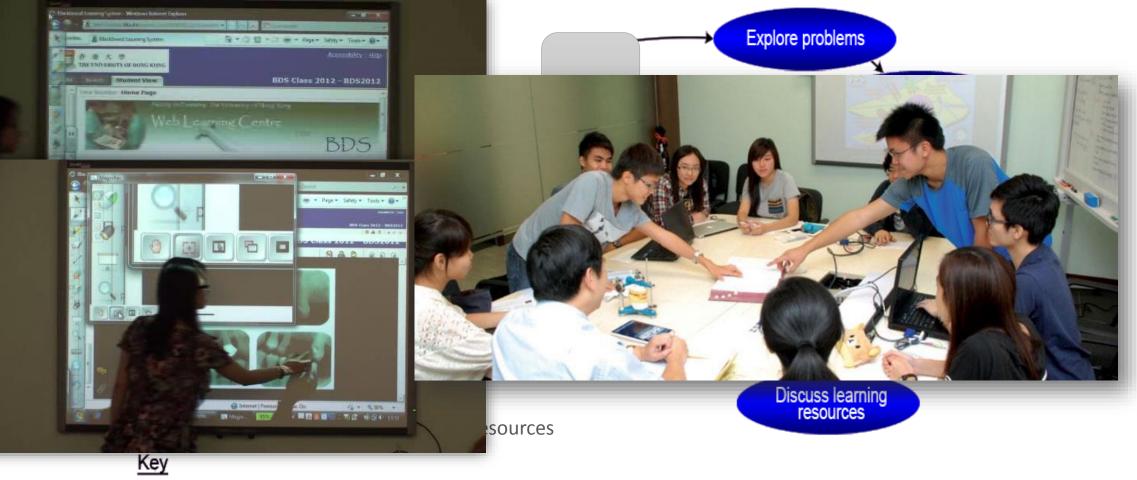
Librarian

"The problem comes 1st"



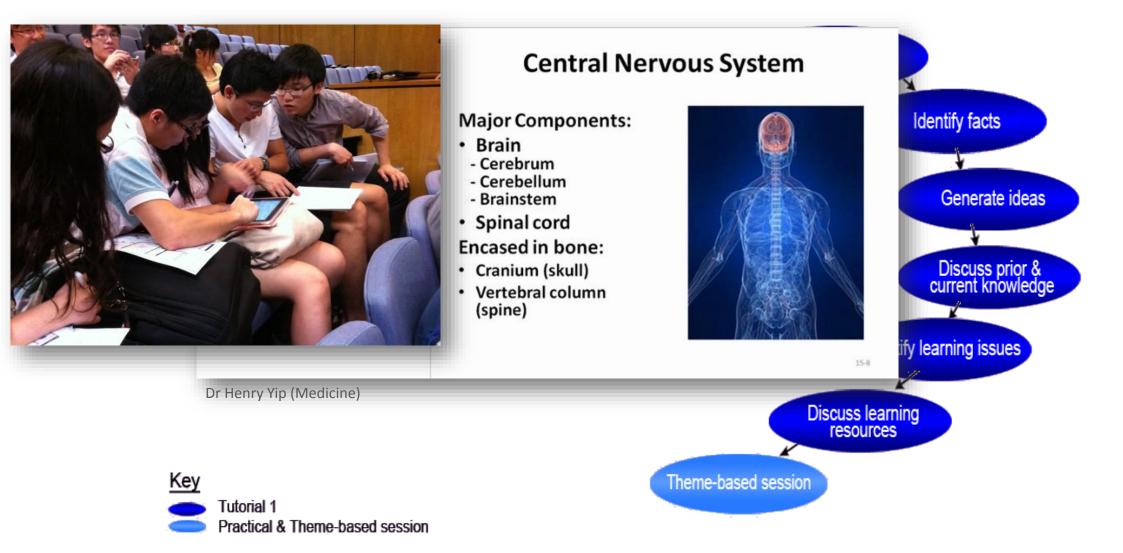


Large screen visualisation to enhance collaboration



Tutorial 1

In-house digital resource building



Students providing instant responses by iPad (iClass)

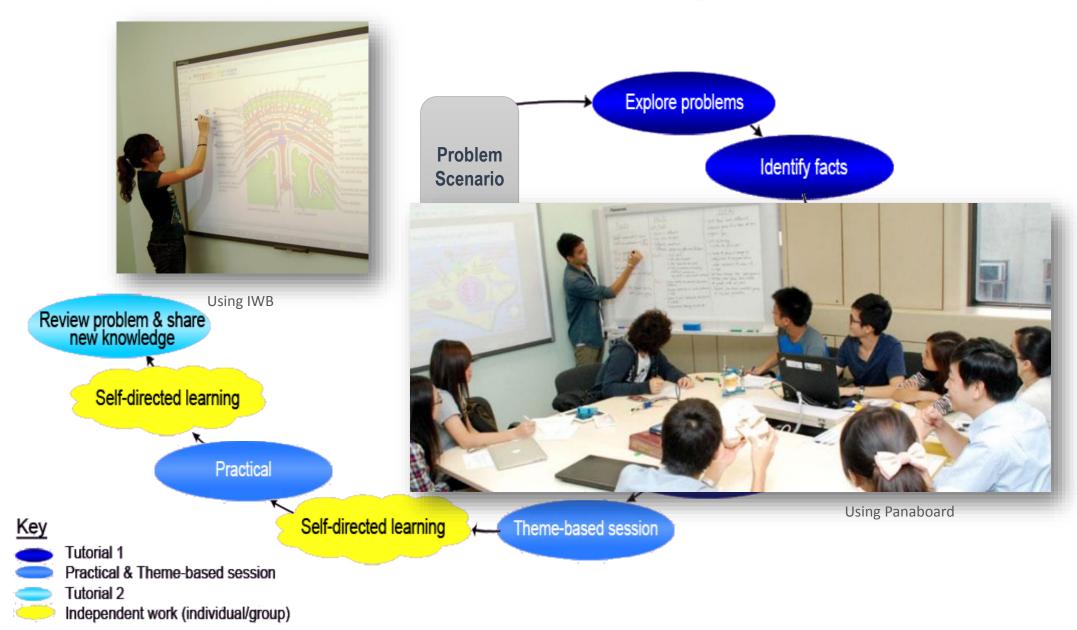
Knowledge building in online communities

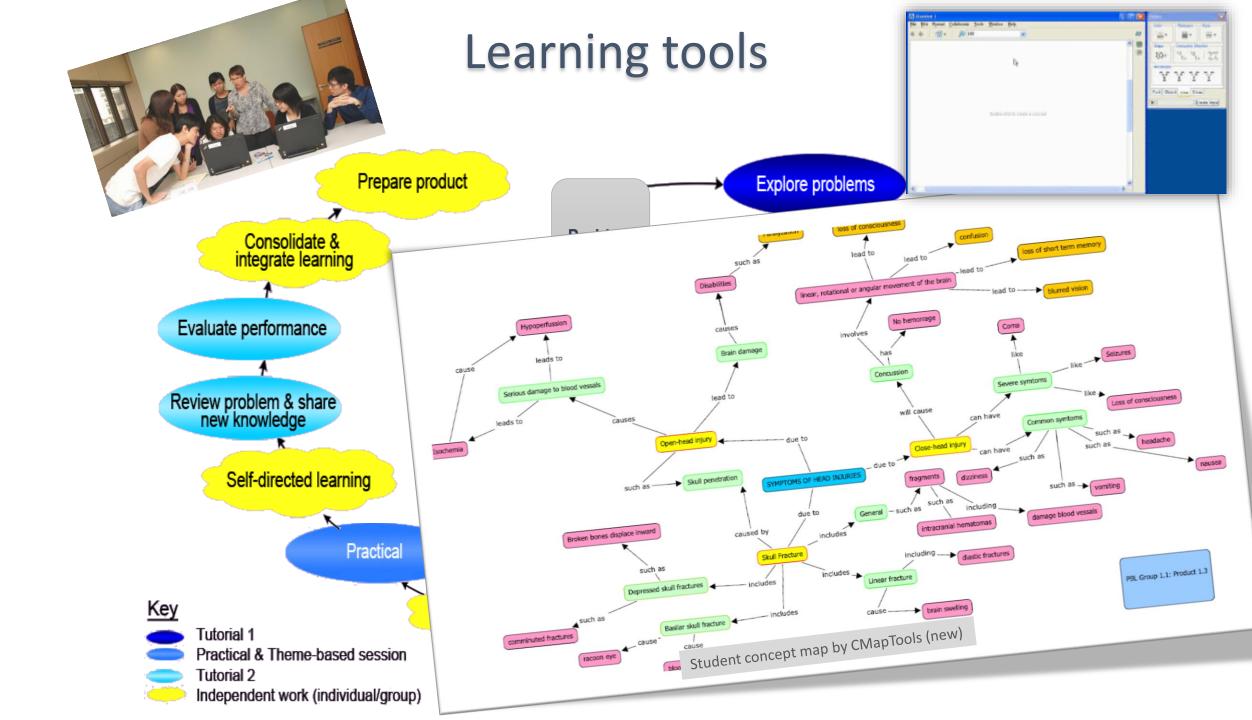


Dr Winnie Choi (Clinical Assistant Professor - 1st batch of PBL Graduates)

Independent work (individual/group)

(inter)Active learning





Re-designing Learning Spaces

