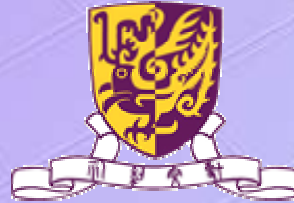


What, Why, Who & How of designing for effective online learning

Carmel McNaught
carmel.mcnaught@cuhk.edu.hk



Centre for
Learning
Enhancement
And
Research

Questions

- **What** is educational design?
- **Why** is it essential?
- **Who** develops online courses?
- **How** can it all come together?

What is educational design?

- a *planned process* of making *curriculum decisions* about how best to support *student learning* in some *defined area*

What is educational design?

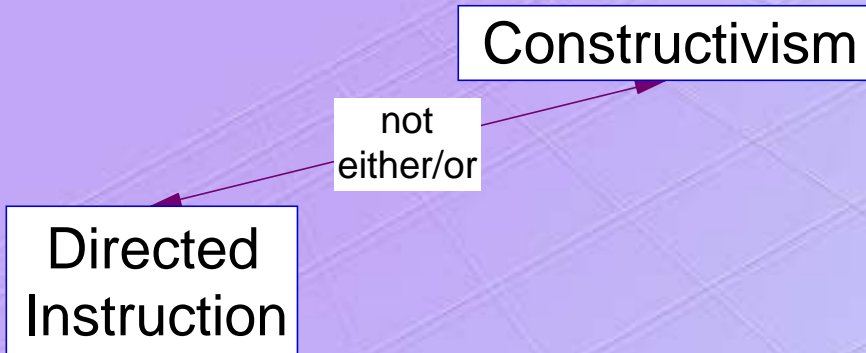
1. a *planned process* of making
2. *curriculum decisions* about how best to support
3. *student learning* in some
4. *defined area*

What is educational design?

Focus on

- *curriculum decisions*
- *student learning*

Student learning

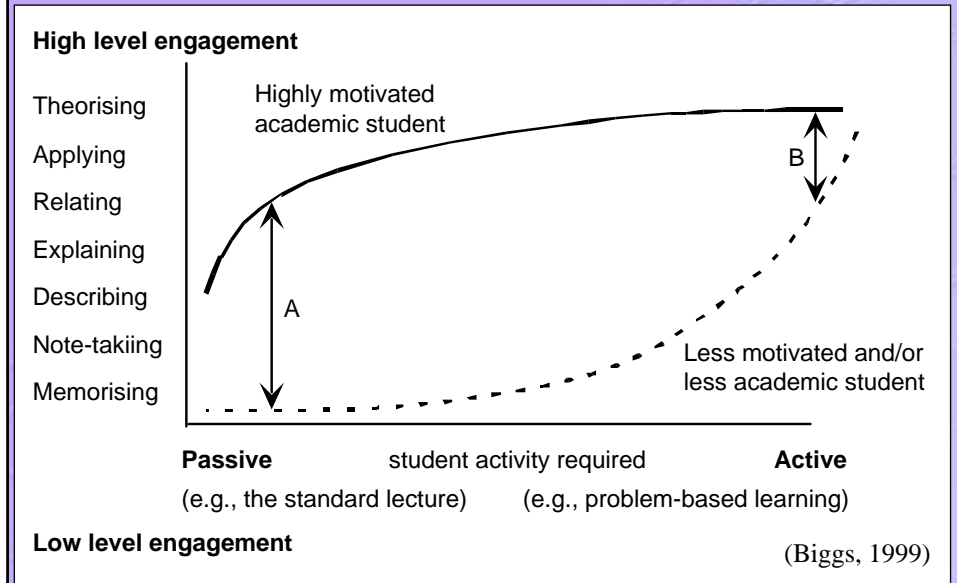


Student learning

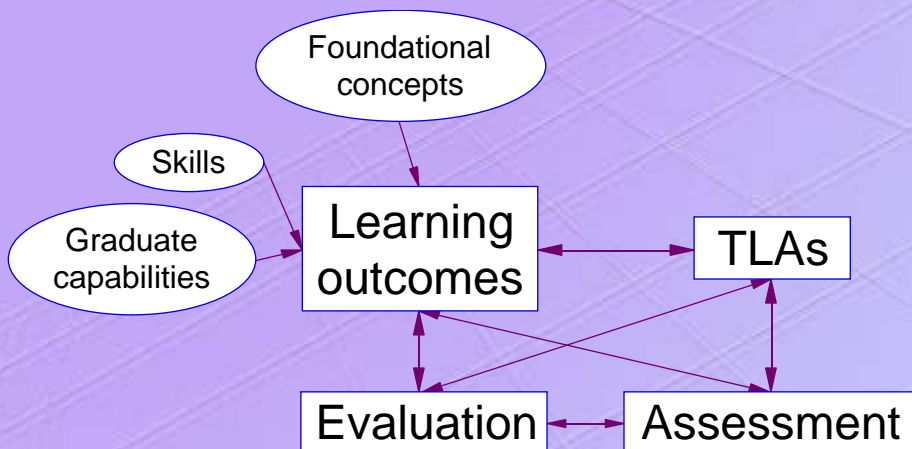
Graduate capabilities, e.g.

- thinking critically and making judgments
- solving problems and developing plans
- performing procedures and demonstrating techniques
- managing and developing oneself
- accessing and managing information
- demonstrating knowledge and understanding
- designing, creating, performing
- communicating

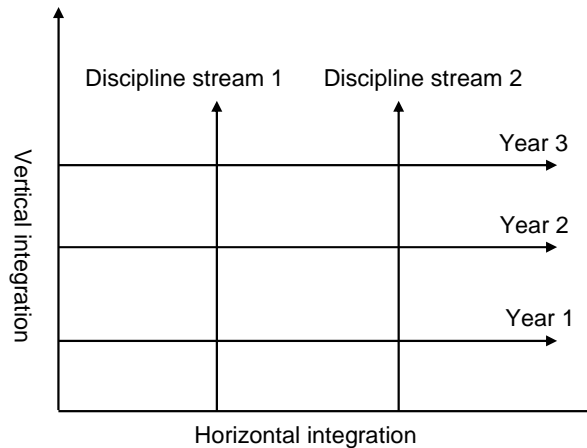
Types of students (Biggs)



Designing effective & coherent programs



Programs & courses



Example: PBL veterinary microbiology course ~ 1993

- 8 weeks long
- few formal lectures
- multimedia databases
- 40 case studies (6 in labs)
- essays
- seminars
- literature review
- 'open computer' examination

Bovine pericarditis



1. Depressed cow
2. Penetrating wire
3. Purulent pericarditis

History

A 6-year-old Friesian cow was noticed to be dull and depressed, reluctant to walk, and breathing shallowly with some difficulty (1). The cow had been observed off her food two weeks earlier. No other animals in the herd were affected.

On clinical examination, the cow had oedema of the brisket (1) and engorged jugular veins with an exaggerated jugular pulse. Her temperature was 39.8°C (normal range $39.5\text{--}39.5^{\circ}\text{C}$). Her heart sounds were muffled and heart rate was 95 beats/min (normal range 60–80). Needle aspiration of the pericardial sac revealed turbid fluid which clotted in the syringe. The syringe was forwarded to the laboratory for bacteriological examination.

No treatment was attempted and the cow was sent to the knackery. A piece of wire was found penetrating the anterior reticulum, diaphragm and pericardial sac (2). The pericardial sac was full of pus (3) which had a foul odour.

Patient Data

Case Data

Specimen

Request Tests

Go to the Lab



Save Session

Exit the Case Report

Bacto Mycology Lab

Exit the Case Report

go to the Lab

Save Case

Learning goals

Test Questions

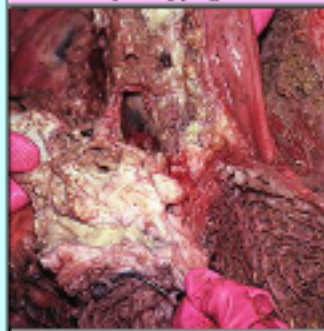
Actinomyces

Actinomyces

Topics

Library

Actinomyces pyogenes



Traumatic reticulitis and pericarditis

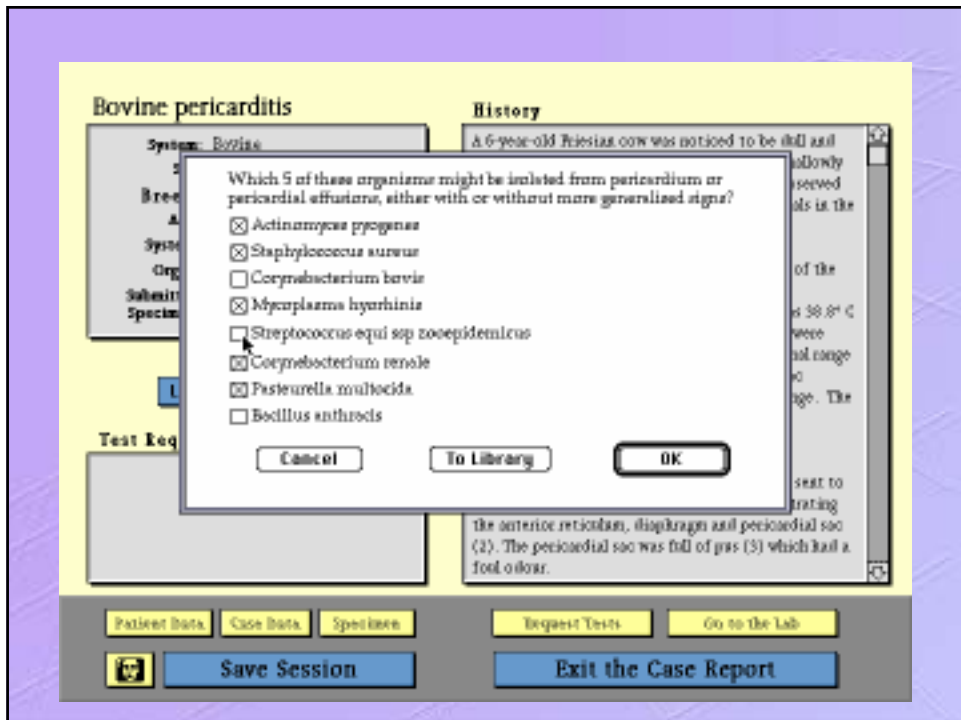
suppurative lesions in cattle

Wire penetration of the anterior reticulum, with purulent local peritonitis and extension to pericarditis.

go Library

Current score: 2/3 or 67%

OK



Short-term evaluation 1

- Students took more responsibility for their own learning.
- There was no requirement to learn by rote.
- Higher order cognitive skills were sought and demonstrated in written work.
- More collaborative learning
- More opportunity for written and oral communication skills

Short-term evaluation 2

- Better feedback to students
- Increased awareness of, and interest in, the subject
- Improved practical skills
- Better computer skills

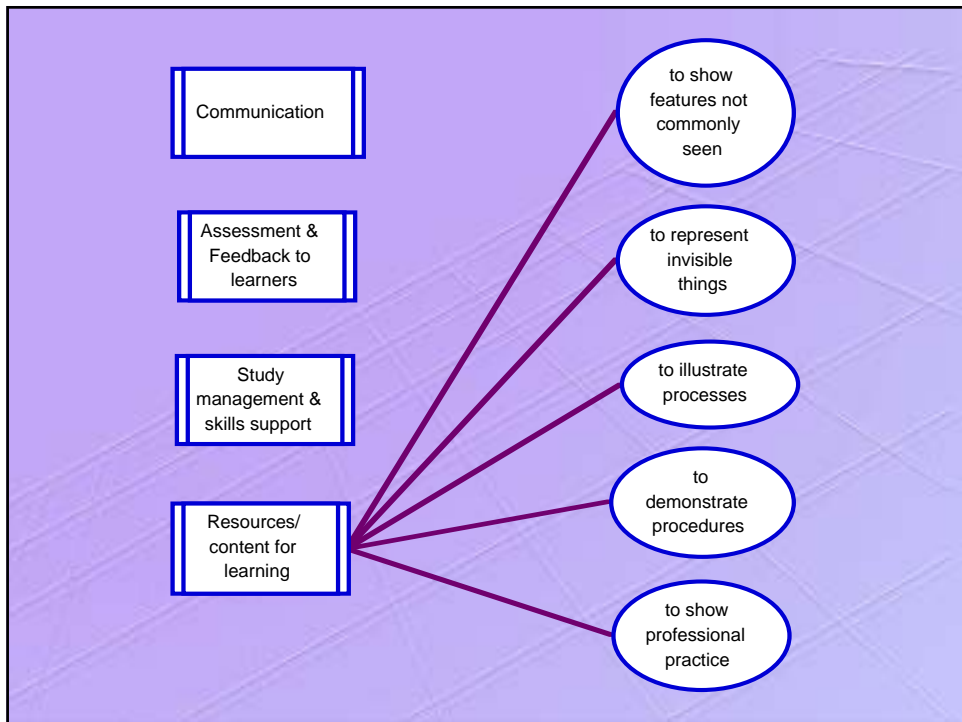
But ... in clinical years

- Ts did not think Ss better at clinical diagnosis.
- Ss remember the experience as 'a fond memory'.
- It had been an isolated experience.
- Need to think about Ss' overall experience.
- So, think about programs rather than courses or even small units.

Why is educational design essential?

Why is educational design essential?

Matching functions of
technology to
student learning needs



Example: Virtual midwifery room

- Threaded discussion for issues in decision making
- Chat for timed decision making
- Kill virtual babies, not real ones!

Who develops online courses?

Skill set

- Experience in teaching and educational design
- Extensive knowledge of the content domain
- Media skills
- Programming skills
- Interface and graphical design
- Formative and summative evaluation
- Project management

Building interacting &
engaging content takes
time, effort & money.

Time, effort & money = Money

Example

- ChemCAL
- <http://chemical.chemistry.unimelb.edu.au/about/sampPreLab7/sampPreLab7.html>

How can it all come together?

Operationalizing complexity

- Embed in a context
- Articulate the program outcome capabilities
- Sort out team processes
- Vert./ horiz. curriculum alignment matrix
- Curric. alignment in each bit (LO, TLAs, A)
- Meaningful tasks for Ss
- Multiple modes of support
- Opportunities for students to discuss learning
- Mastery or flexible standards of assessment
- Formative evaluation checkpoints
- Enjoy the adventure!