

Learning Theory and Practice: Design of Online Learning Environments

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Goals of this presentation

- How should we think about learning?
- What are the implications for instructional design and assessment?
- What are some designs of online instruction?

Basic Framework

- Learning
 - Making sense of the world
- Instruction
 - Supporting that sense making

Factors that determine learning

- Resources available
 - Materials
 - Ability to test understanding
 - Instructor, fellow students, “doing”
- Constraints
 - Time
- Goals of the learner
 - What they bring and what our design promotes
 - Discuss; Apply; Define
 - Pass a test; Use outside of class

The importance of goals: Different learning from the same resource

- Nurse and physician
- Accountant and Financial Planner
- Student in a class, manager, and line person

How we design instruction (what we demand) impacts the students goals and hence learning.

- What do you want your students to learn?
 - Know About (learn the text)
 - Know How (follow instructions)
 - Know Why (learn by doing; problem solving)
 - Care Why (take ownership of the problem/issue)

Instructional Designs for “Care Why” and “Know Why”

- Design to support the goals of the learner
 - Just in time learning
 - Action Learning
- Develop the goals of the learner
 - Problem Based Learning
 - Case based learning

Side Note

- The theory and the designs do not preclude the learner from:
 - Memorizing in order to automate
 - Going to lectures
- The issue is why the learner is memorizing or attending the lecture.

Implications for Designing Instruction

1. Design inquiry (learning activity) to support “course” goals

- The design of the inquiry must be driven by:
 - learning outcomes (performance objectives)
 - Authenticity
- The case of Cardean Univ.
 - What should the learner be able to do
 - Where/why will they be doing that outside of class

2. Focus on learner

- The design success is not in the materials, e.g., presenting the problem.
- The success is in engaging the students in the problem and sustaining their inquiry and problem solving

(Putting a course online is not a matter of putting materials online.)

3. Provide a structure within which the student can work

- Learner Centered does not mean “leave the learner alone”
- Difficult balance between:
 - Learner owning the problem
 - Providing structure so learner does not flounder and become too discouraged.

4. Support the learners in testing their understanding/ability

- Instructor asks questions “on the cutting edge of the students understanding”
- Promote student interaction and collaboration.
- And of course, “Learning by doing”

5. Provide authentic assessment

- Performance based
- Assessment is integral to the learning activity – examination of progress and ability to reflect on what one is doing.
- Transfer to new situations
 - Bransford: “Preparing For Future Learning”

Issues in Distance Learning

- Providing structure is even more critical
 - Less informal/out of class discourse
 - No easy comparison to other students
 - Asynchronous means there are delays in notification
- Support student identifying with class
 - Lack of affiliation => drop out

Notes on student interaction

- Online learning is in the interaction among people not in the material online
- Faculty often surprised by and later excited by their role in web based classes.
- Facilitation is a critical and difficult skill
- Collaboration tools are essential
 - Synchronous most effective for building community (social) and for decision making
 - Asynchronous most effective for analysis
- Collaboration must be integral to the class

Four Examples of online learning

- Cardean University
 - Problem Based Learning
- Cardean University
 - Just in time learning
- Ohio University
 - Problem Based Learning
- Learning Community
 - Just in time learning

Focus in the review

- Design of the inquiry and relation to course goals
- Providing Structure
- Collaboration (testing understanding)
- Assessment

Cardean University “for credit” courses

- MBA program
- 1 credit (30-40 hours work within six weeks)
- Problem centered design
- Start any time; self paced
- Classes are up to 20 students who started at about the same time
 - Share instructor
 - Share discussion forum (asynchronous)

Ohio University

- MBA program
- Cohort of 25; work in teams of five
- 8 problems over two years
- Whole business problems
- Blended approach
 - Begin and finish problem on campus
 - Work is online (at a distance)

Cardean University not for credit courses

- Not for credit
- Just in time learning
- 2-3 hours work within two weeks
- Start at any time; self paced
- No cohort

Learning Communities

- Technology support for what we do naturally
- A continuous learning environment
- Composed of:
 - Learning objects (imported and community generated)
 - Discussion (about objects; collaboration)
- Evolution is community determined
- Facilitation/moderating is an essential component of the community

Examples

- Technologies
 - Communispace
 - Intraspect
 - Eureka (Xerox PARC)
- Texts
 - J. Botkin (2000) "Smart Business"
 - J.S. Brown and P. Duguid (2000) "The Social Life of Information"
 - E. Wenger (1999) "Communities of Practice"
 - C. Werry and M. Mowbray (2001) Online Communities: Commerce, Community Action, and the Virtual University

