Integrative paths in the social construction of understanding

Kathy Takayama
Harriet W. Sheridan Center for Teaching & Learning
Brown University

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Themes

• Disciplinary thinking: how expertise gets in the way

• Interdisciplinary entry points for the construction of understanding

• Deeper understanding through iterative experimentation
What is most challenging about teaching in my discipline?

- Some students restrict themselves from total engagement.
- Students are not prepared to apply conceptual understanding.
- Students are reluctant or unprepared to dive into unfamiliar territory.
Deep engagement: Learning to be a full participant in the field

John Seely Brown
How do I know when I’ve been effective?

• Taking ownership of one’s learning

• Application through incremental, experiential learning

• Being comfortable with uncertainty

• Integrate insight from across the disciplines to solve problems

• Develop adaptive expertise
Themes

- Disciplinary thinking: how expertise gets in the way
- Interdisciplinary entry points for the construction of understanding
- Deeper understanding through iterative experimentation
Expert thinking
“Chunking”
Themes

- Disciplinary thinking: how expertise gets in the way
- Interdisciplinary entry points for the construction of understanding
- Deeper understanding through iterative experimentation
Visual Literacy

Shape  Direction
Motion  Scale
Texture Dimension
Color  Position
Angle  Pattern

Scientific Literacy

Hypothesis
Experimental plan
Data collection
Interpretation, analysis
Communication

integration and iteration
Hypothesise
Design
Ask Questions
Perform Experiment
Predict
Ananalyse Interpret
Communicate, Discuss
Learning from technology-enabled visualizations

- 2D vs. 3D
- Spatial ability
38 students
5 professors
24 universities
10 countries
4 continents
Socialization 22%
Planning 10%
Sharing or Comparing 3%
Clarification 3%
Negotiation or Co-construction 3%
Testing and Modification 6%
Application 49%
Blended Courses or Flipped Classrooms
Intermediate Microeconomics:
Students as engaged collaborators
Intermediate Microeconomics - ECON1110
Professor Pedro dal Bó

- 450 students
- Large lectures
- 3 lectures/week
- Weekly review sessions
Collaborative, social construction of knowledge
1/3 of the traditional lectures replaced with “Microlectures”
Building the teaching assistant (tutor) community well before the course launch

Weekly team training meetings at the Sheridan Center:

- Student feedback on Microlectures.
- Practice peer facilitation.
- Deconstructing thinking processes.
Model collaborative problem-solving; practice peer facilitation.

Saturday, May 25, 2013
Instructor presence is important: virtual + physical continuum

Professor Pedro Dal Bó
e.g. “Dal Bó-isms”
Deep engagement:
Learning to be a full participant in the field

John Seely Brown
Thank you