Current State of Learning Resources: Group 1

- In principle, there is a huge interplay between pedagogy and resources, but not widespread
- X-based learning and the fading of the textbook
- Pedagogy should be driving technology
- Evaluation criteria for promotion and tenure has not changed; innovation in curriculum/pedagogy not valued
- Research Question: : Are there differences in learning and usage when using a printed text versus an electronic text?

The Manduca Group

- Need to have multiple teaching materials to teach same concept (different modalities of learning)
  - Clay, textbook, simulations, animations, LEGO bricks
- Need to combine multiple paths
- Textbooks can (and are) being used successfully in active learning
- Electronic book
  - Can vary difficulty
  - Can build in discovery process
  - Can simulate while reading

Manduca sexta

Group 3
RESEARCHABLE QUESTIONS

To what extent does convergence of student-teacher perception of the role of the textbook improve educational outcomes?

What resources are enhancing learning outcomes?

In the decentralization of the teacher and the textbook as the ultimate authority, what are the implications for teaching?

4

- Use follows engagement
  - Relevance, "local" to individual students
  - Motivation and engagement – from intellectual engagement to cash
  - Technology doesn't replace textbook (paper still wins)
- Role: One-stop sequenced bundle for teacher
- Design
  - Semantic Web
  - Textbook should be small:|a scaffold, but content should come online (currency, adaptability vs. accuracy, authority)
  - Interoperability, implies standards, how is this accomplished?
  - Need for publishers to transfer into different technical environment – traditional publishers evolving or new publishers coming to the fore
  - Will educators become "publishers"?
  - Textbooks need to be reconfigurable. "Take the songs rather than the album."

TESTABLE HYPOTHESES
- Critical thinking can be assessed in a cost-effective way
- Curricular structure and content are separable
  - Students learn better if they have a variety of ways to interact with content than linear narrative of traditional textbook

Breakout group 5 -- nuggets

What are key features of technology that work alongside textbooks and allow students to deepen their knowledge.

Educators are aware that there are rich number of resources to use in teaching and use them in a synergistic fashion with an awareness of student learning are more effective.

Teachers that are aware of this and have learned about these technologies are more effective as teachers.

Technologies that allow learners to create materials and try them out are more powerful than the materials themselves. Ditto for faculty creating modules.

Group 6 Break out 1

- It does not matter what the materials are, if you have a learner centered course.
- Materials can help a teacher develop a learner centered classroom.
- Knowledge probing exercise can tell the student and teacher where have the learners been and what their starting point is for new learning.
- Materials should help students take responsibility for their own learning
- Faculty drive the textbook market.

Group 7

Textbook as *scalable* guidebook. Analogies:
1)   travel guide analogy: start with outline
2)   Museum, horticultural guide, zoo

Question: Can a guidebook outperform a traditional textbook?
Methodologies:
- Final exam
- Marketplace: will it propagate? What are the factors driving successful dissemination?
    1. Economics
    2. Measurable success
    3. Overcoming pedagogical inertia – finding acceptable pathways to change
    4. student reaction