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MIT celebrated its 150th birthday in 2011 – it’s also when we announced MITx
It’s a great time to be at MIT – there’s lots going on with education technology
It’s more than MOOCs
We’ve already heard some of the cool MIT educational technology projects as part of
LINC 2013: BLOSSOMS, others
I’ll describe a few more!
“Other” EdTech “Stuff” at MIT

Modularity Experiments
Concept-based Approaches
Embedded Assessment
MIT Office of Educational Innovation and Technology

- Partners with faculty across MIT
- Leads experiments in innovative approaches to learning and teaching
- Scales up projects from individual faculty to departments and the university
- Partners with other campus entities to sustain innovations long-term
MIT Council on Educational Technology

- MITCET’s “mission...is to enhance the quality of MIT education by encouraging the appropriate application of technology, both on and off campus.”
- Representation from across campus
Modularity Experiments

- **Experiments to explore:**
  - *Deeper learning experiences*
  - *Flexibility* in time (not always organized into one-semester chunks) and *geography* (not always on campus)

- **Call for participation**
  - Aero/Astro, Chemistry, Mechanical Engineering
i2.002 in Mechanical Engineering

- The department is interested in experimenting with its curriculum, perfect candidate

- 2.002 Mechanics and Materials II is a typical MIT engineering class:
  - Traditional lectures, lots of equations using blackboards *gasp*
  - Problem sets, labs
  - “MIT Hard”

- Set of experiments beginning in Spring 2012
i2.002

Mechanics & Materials II

Department of Mechanical Engineering
Office of Educational Innovation and Technology
Teaching & Learning Laboratory
(with funds from MIT Council on Education Technology, Class of 1960 and the Office of Digital Learning)
Divide the course into: Trunk = 3-D Continuum Mechanics and Linear Elasticity and Branches = Original concept that students could take the branches in any order Describes the modularity of the course
i2.002 Spring 2012 Experiment

- MIT students took i2.002 online and at a distance. Online and In-Person Students Performed the Same
  - Students in Spain, Puerto Rico and California
  - Same course, same lectures, same p-sets (homework), same labs and same exams

- Lecture videos
  - Traditional classroom videos
  - But... we had a TA divide the video into segments by concepts

  Added about 10 minutes per lecture, that’s it!
i2.002 Spring 2013 Experiment

- Linked “typical” online course content with concept-based tools
  - Video browsable by concepts

- Virtual TA’s
  - Help students get started with p-sets, similar to the help they’d get in office hours

On-going Experiments
Continuous Innovation
- Flipped classroom with embedded assessment
  - Students review materials ahead of time
  - Including answering questions embedded in content
  - Quick feedback loop allowing faculty to address items in class, with examples
Open Embedded Assessment

- edX presents content and embedded assessment tightly linked
  - Quick feedback loops
  - Lots of opportunity to practice/apply

- OEIT New Project: Embed formative assessment in any web-based content
  - Overcome limitations of current approaches
Open Embedded Assessment

Powerfully simple idea
“More” EdTech Stuff in OEIT

- Collaborations in Online Teacher Education and Professional Development
  - MIT-Haiti Initiative & EDC-Pakistan
- Interactive software, visualizations
  - StarGenetics, StarBiochem
- Infrastructure software development
  - MIT Core Concept Catalog & Repositories
- Collaborations with Community Colleges
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