Innovative Online Strategies at MIT

Brandon Muramatsu, mura@mit.edu
MIT Office of Digital Learning

Mission

The Office of Digital Learning works to transform teaching and learning at MIT and around the globe through the innovative use of digital technologies.

Established November 2012

Key Area: Strategic Initiatives

- Realize mission through collaborations at K-12, Community College, Higher Education and Corporate levels
UNLOCKING KNOWLEDGE, EMPOWERING MINDS
UNLOCKING KNOWLEDGE > DUAL MISSION

• Publish core teaching materials—including syllabi, lecture notes, assignments and exams—from virtually all of MIT’s courses

• Extend the reach and impact of OCW and the OpenCourseWare concept
UNLOCKING KNOWLEDGE > 2,180 COURSES

- 2,180 Syllabi & reading lists
- 18,000+ lecture notes
- 10,000+ assignments
- 1,000+ exams
- 700+ projects

Many include:
- Audio/video (~100)
- Complete texts (~30)
- Simulations/animations
MIT’s Educational Outreach

- Long history, deeply ingrained
- MIT’s sharing benefits the world, and we believe, enhances MIT

- Course Materials
  - MIT OpenCourseWare (2001)
- Courses & Teaching
  - MITx (2011), then edX (2012)
- The Experience
  - The “special sauce”, in and around Cambridge, MA; with peers, faculty, researchers, alumni, startups
Online Teacher Education

- **Project Details**
  - Grant funded by Education Development Center (EDC) with US Agency for International Development funds
  - 4 month project: May – September 2013

- **Deliverables**
  - 3 Online Courses
  - 2+2+6 BLOSSOMS Modules
  - 5 Workshops
  - Concept Tools
  - Online Course Design Guide
3 Online Video-Based Courses

**Best Practices for Teaching and Learning**

- *Instructors*
  - Dr. Lourdes Alemán and Dr. Alison Brauneis

**Games and Learning**

- 5 Weeks

**Mathlets: An Introduction**

- 4 Hours

Unless otherwise specified this work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License.
2+2 BLOSSOMS Modules

+6 Translations to Urdu

Monty Hall

Kite Flying

Tragedy of the Commons

From Psychology to Logic

Unless otherwise specified this work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License.
5 Workshops

4 Day Visualization Workshop

1 Day Online Course Design Workshop

Administrative and Infrastructure Issues for Online Courses

M.S. Vijay Kumar
Brandon Muramatsu

September 15, 2013

Contemporary Educational Technologies: A Perspective from MIT

M.S. Vijay Kumar
Brandon Muramatsu

September 14, 2013

MIT Core Concept Catalog (MC3)

Jeff Merriman, Brandon Muramatsu
Office of Educational Education and Technology
Massachusetts Institution of Technology

½ Day Admin & Infrastructure Workshop

½ Day EdTech Workshop

½ Day Concept Tools Workshop

Unless otherwise specified this work is licensed under a Creative Commons Attribution 3.0 License.
Concept Tools

Concept Map Authoring Tool

MC3 Browser Extension (Assign Resources to Concepts)

Concept-Driven Repository Tool
CC/MIT: Community College Collaborations

- **Massachusetts Transformation Agenda**
  - Advanced Manufacturing Case Studies and Online Learning Modules—building/sharing MIT’s strengths

- **Guided Pathways to Success**
  - Nascent collaboration
  - Tools and infrastructure to link learning outcomes with courses, student information systems and real-time labor market information

- (Experiments around MITx courses)
MITx / edX

- **MITx: many meanings, many interests**
  - MOOC courses
  - Residential experiments utilizing MOOCs for blended learning
  - SPOC (“Small Private Online Course”, aka Online Course)

- **edX: Standalone non-profit organization**
  - Major funding from MIT and Harvard
  - Consortium of universities publishing MOOC courses

- **Impact beyond MOOC courses**
  - New organizational models, opportunity for discussion
Initial MITx & HarvardX Research

Released on Tuesday, January 21, 2014

[Links to related websites]

unless otherwise specified this work is licensed under a creative commons attribution 3.0 license.
Next Gen Science Standards MOOC

Goal

*Prepare K-12 educators to implement Next Gen Science Standards with their students.*

Let’s look at research / observations that might influence design…
Engagement

What’s in a number?
- Only registered
- Only viewed
- Explored (accessed half or more of chapters)
- Certified

Figure 3: Participants separated into four mutually exclusive and exhaustive categories (not to scale).

Intent & Outcomes

7.00x Introduction to Biology: The Secret of Life, Spring 2013

- What are the learners’ intent?
- What do we want the outcomes to be?

Support to Completion

- Persistence beyond the first week is key
- Given our goals, how can we support learners to completion?

Figure 12. Average percentage of active registrants whose last action in a course is in a particular week.

Series and Duration

University of California, Irvine
Virtual Teacher Program
A Specialization on Coursera: Your Pathway to Expertise

The Virtual Teacher series consists of online training and development for instructors and others who want to learn to teach in an online or blended classroom environment. The Specialization concludes with a Capstone ...

www.coursera.org/specialization/virtualteacher/10/courses
Innovative Online Strategies at MIT

Brandon Muramatsu, mura@mit.edu
MIT Office of Digital Learning