The Developing World of MOOCs

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edX.org
A Non-Profit Venture

~1M Learners from 192 Countries

MIT and Harvard have committed $60M to the venture

- Increase access to learning worldwide
- Improve on-campus education
- Open source platform
- Learning pedagogy research

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155,000 Students Enrolled in First Course

- 8,240 Took the Final
- 10,547 Made it the Mid-Term
- 7,157 Certified
- 9,318 Passed the Mid-Term
- 26,349 Tried the First Problem Set

Registered for 6.002x: Circuits and Electronics

"Active Learners"

Same staff resources as 150 person on-campus class
The New Classroom

Where is this?
FALL 2012 COMPARED TO SPRING 2012

COURSE retake rates dropped from 41% to 9%

Source: San Jose State University Davidson College of Engineering
Learning and retention is related to depth of mental processing.
- Craik and Lockhart, 1972
Another dependent source example

And you have the output port here. So what I'm going to do is in this particular circuit, I'm going to connect a voltage source at the input, an independent voltage source at the input, $V_i$.

And I'm going to connect the output as follows. I'm going to connect a resistor to the output as follows. I'm going to call it RL for load resistor. This terminal is going to be connected to ground. And then I'm going to connect the RL.

Download video here.

More information given in the text.

Lecture Slides Handout [Clean] [Annotated]
Students who were able to press a continue button to go on to the next segment performed better…

- Mayer 2003
  J. Educational Computing Research
H1P2: DECOMPOSITION OF AMMONIUM NITRATE

Solid NH₄NO₃ (ammonium nitrate) decomposes on heating to 400°C, forming N₂O gas and water vapor, H₂O.

(a) Write a balanced chemical equation.

(b) Calculate the number of grams of H₂O that will form on decomposition of 0.10 mole of ammonium nitrate.
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Oh... u... :{~

Rapid feedback has a significant and positive effect on student performance when compared to no rapid feedback.
- Chen, Whittinghill, Kadlowec 2010
Virtual Game-Like Laboratory
Tell me and I forget.
Teach me and I remember.
Engage me and I learn.

- Benjamin Franklin
Welcome!

Welcome! I am from Brazil and I hope a great and exciting course. Let's go!

Post a response:
### Feedback from Our Campus Students

<table>
<thead>
<tr>
<th>Campus Students Identified Three Key Components of the Online Course that they Particularly Liked</th>
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<tbody>
<tr>
<td>Ability to stop and pause video lectures</td>
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What do Students Visit First?

Homeworks

Videos
Hours spent on homework in relation to total points in course

This project is supported by NSF grant No. DRL-1258448
What Resources are Learners Accessing

(A) Homework
- Discussion
- Lab
- Lecture Video
- Book
- Lecture Problem
- Tutorial
- Wiki

(B) Midterm Exam
- Homework
- Discussion
- Lab
- Book
- Lecture Video
- Lecture Problem
- Wiki
- Tutorial

(C) Final Exam
- Homework
- Lab
- Lecture Video
- Book
- Lecture Problem
- Wiki
- Tutorial

Resource area ~ time spent
Learner Activity Profile – Deadlines Work!