

Residential Education meets Online Technology

Azer Bestavros

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Society of College and University Planning
2014 North Atlantic Regional Conference

March 2014



An Architect in Disguise...

Architectures...

Computer Science @ Boston University

Form meets Function

Plenty of tradeoffs!

- Cost
- Aesthetics
- Energy efficiency

Architects of a New World

Any Reluctance or Concessions?

Computer Scientists:
Architects of a New World

April 2008

Azer Bestavros
Professor

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Music Stage: Past & Present

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Sage on Stage: Past & Present

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Game Changer: MOOCs



Massive – enrolment numbers
Open – no mandatory qualifications
Online – fully web-based
Course - structured, temporal

Characteristics

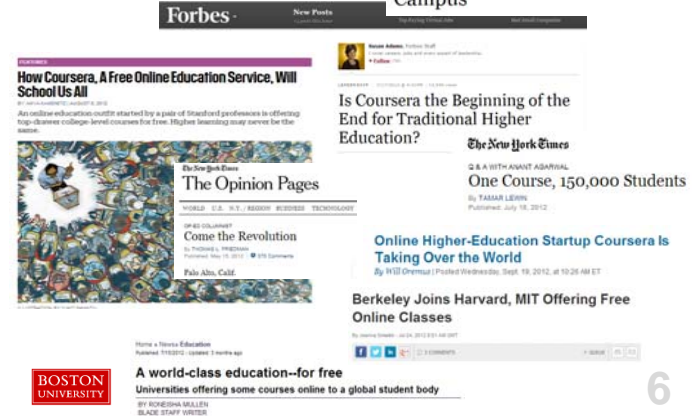
- High quality; offered by top academics
- Web-based lectures and assessments
- Self-paced; some synchronous
- On-line forums, locale/city hangouts
- Mostly free; testing/certificates for a fee
- Increasingly accepted for credit



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Year of the MOOC

So Long Stuffy Lecture Halls:
Coursera Just Tripled Its Digital Campus



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Boston University MOOCs

<p>SABR101x: Sabermetrics 101: Introduction to Baseball Analytics An introduction to sabermetrics, baseball analytics, data science, the R Language, and SQL.</p> <p>STARTS: 8 May 2014 INSTRUCTORS: Andy Andres BUX</p>	<p>learn more</p>
<p>INTL301x: War for the Greater Middle East Military historian Andrew Bacevich recounts the failed U.S. military effort over several decades to "fix" the Islamic world, explaining what went wrong and why.</p> <p>STARTS: 24 Sep 2014 INSTRUCTORS: Andrew Bacevich BUX</p>	<p>learn more</p>
<p>ARPO222x: The Art of Poetry The art of poetry gives pleasure and invites knowledge. This course is based on a conviction that the more you know about an art, the more pleasure you will find in it.</p> <p>STARTS: September 2014 INSTRUCTORS: Robert Pinsky BUX</p>	<p>learn more</p>
<p>ASTR105x: Alien Worlds: The Science of Exoplanet Discovery and... Alien Worlds will explore the techniques that are used to discover and characterize the thousands of planets (called exoplanets) known outside of our solar system.</p> <p>STARTS: October 2014 INSTRUCTORS: Andrew West BUX</p>	<p>learn more</p>



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Online Technology & Higher Ed

Beyond the professorial "sage on the stage"

"Institutions of higher learning must move from a model of 'time served' to a model of 'stuff learned.' Because increasingly the world does not care what you know. Everything is on Google. The world only cares, and will only pay for, what you can do with what you know. And therefore it will not pay for a C+ in chemistry, just because your college considers that a passing grade and was willing to give you a diploma that says so.

"We're moving to a more competency-based world where there will be less interest in how you acquired the competency — in an online course, at a four-year college or in a company-administered class — and more demand to prove that you mastered the competency.

"We have to get beyond the current system of information and delivery — the professorial 'sage on the stage' and students taking notes, followed by a superficial assessment — to one in which students master more basic material online at their own pace, and the classroom becomes a place where the application of that knowledge can be honed through lab experiments and discussions with the professor.



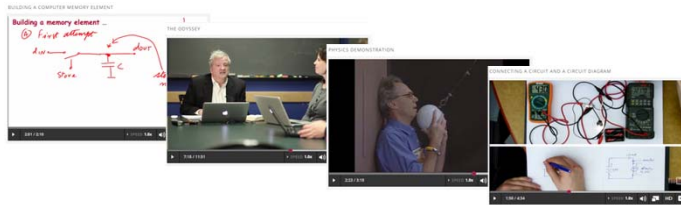
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MOOC ≠ Distance Learning

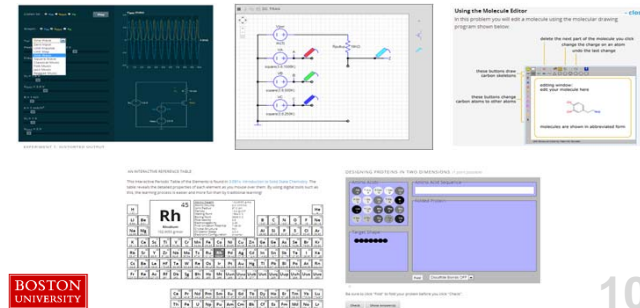
It's the classroom experience when you take the bricks-and-mortar constraints out of it!

- Enabled by web 2.0 and convergence of hyper and social media
- Made possible by the ubiquity of high-speed Internet

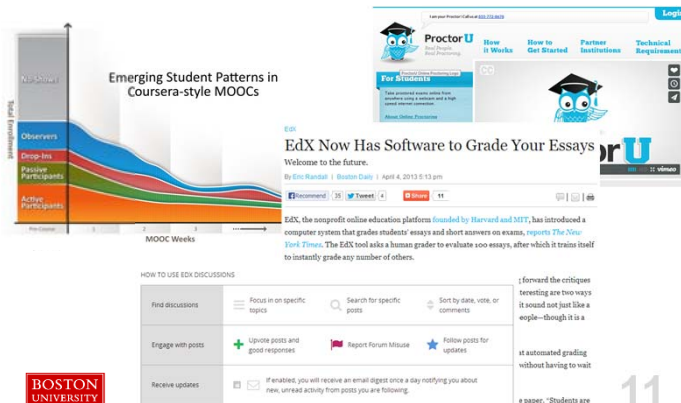


A (Good) MOOC is a Production

Not "one size fits all" – every course has a character and uses technology as befitting the content.



Massive = Challenges & Opportunities



The MOOC Platform Landscape

	edX	coursera	UDACITY	2U
Software Platform	Open Source	Proprietary	Proprietary	Proprietary
Business Model	Not-for profit	For profit	For Profit	For Profit
University Role	Consortium (Inclusive)	Members (Inclusive)	None	Consortium (Exclusive)
Associated Institutions	Harvard/MIT +10 Others	66 Universities	None	Duke, Emory, Northwestern, WUSTL
Scale and Scope	30 Courses Broad Coverage High Quality	300+ Courses Broad Coverage Variable Quality	30+ Courses Tech/Business Industry Driven	30+ Courses Undergraduate Exchange Credit

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Bending Cost of Higher Ed Degrees ...

UDACITY

Udacity, Georgia Tech, and AT&T Partnership

Online Master of Science in Computer Science

Georgia Tech College of Computing

at&t

UDACITY

Master's Degree Is New Frontier of Study Online

By TAMAR LEVIN

Published August 17, 2013 218 Comments

Next January, the Georgia Institute of Technology plans to offer a master's degree in computer science through massive open online courses for a fraction of the on-campus cost, a first for an elite institution. If it even approaches its goal of drawing thousands of students, it could signal a change to the landscape of higher education.

FACEBOOK

TWITTER

GOOGLE+

SAVE

EMAIL

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Badging and Credentialing

Project Achievement Badge

Average score of 75% or higher on peer assessment

Statement of Accomplishment

Project Mastery Badge

Top 1% of all student scores on project

Invitation to collaborate with instructor on a revised textbook

Quiz Achievement Badge

How It's Earned

For those who prefer a traditional method of completing this course, you can demonstrate learning by earning a satisfactory score on quizzes. After careful study of the reading lectures each week, you will be given 2 computer-graded quizzes. You will have 1 ch complete each quiz. To earn the Quiz Achievement Badge, you must earn a cumulative 70% on all the quiz questions in the course. This track is ideal for those who prefer it as, unlike all of the other badges, it is in no way influenced by the actions of others.

What You Get

A Statement of Accomplishment indicating

Quiz Mastery Badge

How It's Earned

I want to recognize those who do exceptional work. To earn the Quiz Mastery Badge, your total quiz score must be 100%.

What You Get

Those who earn this badge and grant us permission to do so will have their names listed in the "Introduction to Sustainability Quiz Mastery Hall of Fame."

BADGES FOR LIFELONG LEARNING

HASTAC

MacArthur Foundation

mozilla

BILL & MELINDA GATES FOUNDATION

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... and Credits

straighterline

Start College for \$99 a Month

Online courses. Easy credit transfer. Save up to 90% on college. [Learn more](#)

MOOCs for Credit

January 23, 2013 - 3:19am

By Scott Jaschik

Two announcements this week suggest that MOOCs -- massive open online courses -- will increasingly include a route for students to receive academic credit.

Georgia State University announced Tuesday that it will start to review MOOCs for credit much like it reviews courses students have taken at

"MOOCs" for Credit Come to California

by AUDREY WATTERS on 15 JAN, 2013

February 7, 2013

American Council on Education Recommends 5 MOOCs for Credit

By Steve Kolowich

In what could be a major step toward bridging the gap between massive open online courses and the credentialing system that they are supposed to "disrupt," the American Council on Education on Thursday endorsed five MOOCs for credit.

San José State UNIVERSITY

Two of the approved courses are: Quantitative Approach, and Student Aid Can Be Awarded for 'Competencies,' Not Just Credit Hours, U.S. Says

By Kelly Field

Washington

It's official: Colleges can now award federal student aid based on measured "competencies," not just credit hours.

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... and Pre-College Credits!

AmplifyMOOC

About the Course MOOC Local FAQ Register Sign In

MOOC + MOOC Local

The first AP Computer Science MOOC with in-person support.

A MOOC for AP Computer Science

A complete curriculum, syllabus and all course materials developed and taught by a master high school teacher will be free and available for the 2013-2014 school year.

Find out more

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Online + Education... Why now?

Customers (and soon teachers) are changing!



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Online + Education... Why now?

Customers (and soon teachers) are changing!



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Online + Education... Why now?

Customers (and soon teachers) are changing!



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Impact on Higher Ed Sector?

- In one word: Unbundling!

Unbundling [describes] how the ubiquity of mobile devices, Internet connectivity, consumer web technologies, social media and information access in the 21st century are affecting older institutions (education, broadcasting, newspapers, games, shopping, etc.) by *"breaking up the packages they once offered, providing particular parts of them at a scale and cost unmatched by the old order."*

Unbundling has been called "the great disruptor"!



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Traditional Higher Ed Bundle(s)

- The “4-year” college experience as a bundle
- The “curriculum and diploma” as a bundle
- The “course” as a bundle
- Faculty as a “teaching and research” bundle
- The “campus” as a bundle
- The “schedule” as a bundle



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Extreme Study Abroad?



The Schools | Academics | Faculty | Student Life | Admissions & Aid | Contact | Press

Interactive Learning Platform Classroom Environment

Minerva uses novel technologies to facilitate effective teaching and learning. These technologies are designed specifically to teach small-group, active learning seminars and are informed by the science of learning.

All academic classes are small, discussion-focused seminars limited to no more than 19 students and taught live by a distinguished member of our faculty. Classes are conducted online to take advantage of tools not possible

in a physical classroom.

Our interactive learning platform makes it possible for students to gain first-hand experience living in multiple cities around the world without sacrificing academics. Many class assignments are designed so that students will collect data in the city where they live while sharing data collected by students in different cities. And, academic classes taken online are supplemented through in person co-curricular activities which

are done locally in the cities in which the students are living.

Our technology platform also allows for insights into student learning that aren't possible in a traditional classroom setting, such as the ability to playback a particular discussion, divide students into break-out sessions based on particular skill sets, and assess student progress in every session of every course.



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“New” Higher Ed Course Providers



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“New” Learning Communities

Edx Meetup Groups



Groups 34 Members 5,791 Interested 2,567 Cities 26 Countries 15

Find a Edx Meetup Group near you

Country
USA

ZIP

Search



Harvard U. will offer exclusive MOOCs to alumni

The Chronicle of Higher Education
02/11/2014



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“New” Ways to Engage Alumni

The New York Times
Education

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS OPINION
POLITICS EDUCATION TEXAS

Harvard Asks Graduates to Donate Time to Free Online Humanities Class

By RICHARD PÉREZ-PEÑA
Published: March 25, 2013

Alumni of elite colleges as from their alma mater, but thousands of graduates donate their time and in online education.

For the first time, Harvard *Ancient Greek Hero*, as it asked alumni who had volunteer as online mentor

BUCS-350: Fundamentals of Computing Systems

Members Events Photos Files Notifications + Create Group

Write Post Add Photo / Video Ask Question Add File

Write something...

Azer Bestavros
If you are a current student in CS-350, a US citizen, and interested in a summer internship at the NSA in DC, send me email.
Like · Comment · March 4 at 10:55am
Seen by 46

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Fast-paced Change in Landscape

Google and EdX Are Building a “YouTube for MOOCs”
By WIRED Chemical (Posted Tuesday, Sept. 10, 2013, at 9:45 AM)

Open Education Alliance
Create the workforce of tomorrow

WIRED CAMPUS
The latest news on tech and education.

PREVIOUS
EdX and Coursera: College Reforms
Common Course Listings

NEXT
c.org
Working to help educational institutions, and their students, for the open to go.

MIT Will Offer MOOC Curricula, Not Just Single Courses, on edX
September 10, 2013, 4:50 am
By Steve Kolowich

MOOC companies are hardly universities unto themselves; a provider wants to move beyond offering one-off courses

MITx, a division of the Massachusetts Institute of Technology

Harvard plans to boldly go with ‘Spocs’
By Sean Coughlan
EDC finds education correspondent

The New York Times
Education

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS OPINION
POLITICS EDUCATION TEXAS

Course Provider Joins Google to Start Learning Platform

By TAMAR LEVIN
Published: September 10, 2013

Online courses have attracted millions. Now they are experimenting with testing numbers

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Online Tech: Beyond Course Delivery

- Learning by doing
- From papers to persistent online artifacts
- Instantaneous feedback on homework assignments
- Feedback to instructor on learning outcomes
- Personalized assistance/assessment
- Peer review and evaluation
- Try before you buy
- MOOCs as screening/recruiting tools
- From diplomas to portfolios

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Take Home Message

How to respond to unbundling?

- It’s all about quality; focus on differentiation
- Co-evolution means that change is the only constant
- Do not resist it; embrace it!

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