MOOCs: The Situation as of December 2013

Jörn Loviscach
• MOOC providers
• Participants
• Costs
• Course credits
• Business and usage models
• Quizzes
• A fundamental contradiction
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Coursera Secures $43M in Series B Funding, Plans $20M in Size Increase

Today, we’re extremely excited to announce that we’ve closed $43M in Series B funding from GSV Capital, International Finance Corporation (IFC), the investment arm of the World Bank, Laureate Education Inc., Learn Capital and Yuri Milner, as well as Kleiner Perkins Caufield & Byers and New Enterprise Associates, who participated in our Series A round of funding and are furthering their investment in this round as well.

Since we launched in April 2012, we’ve grown to offer around 400 courses from 83 educational institutions, and we recently hit the 4 million student mark! These investors, spanning the sectors of Internet technology, education technology, and emerging world markets, closely align with our efforts to continue building the technologies and communities necessary to allow students around the world to learn without limits.

As a social entrepreneurship company, we’re committed to offering free courses to benefit its global community, and we also acknowledge the important role traditional institutions play in the future of education. We provide Verified certificates through our Signature Track, course adoption by institutions and features, partner with more institutions, and expand the areas of focus:

http://blog.coursera.org/post/55080731561/coursera-secures-43m
<table>
<thead>
<tr>
<th>Course Name</th>
<th>Instructor</th>
<th>Subject</th>
<th>Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shanghai Jiao Tong University</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>数学之旅 The journey of Mathematics</td>
<td>王维克</td>
<td>Mathematics and Statistics</td>
<td>1st Dec, 2013</td>
</tr>
<tr>
<td>Shanghai Jiao Tong University</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creative, Serious and Playful Science of Android Apps</td>
<td>Lawrence Angrave</td>
<td>Computer Science</td>
<td>2nd Dec, 2013</td>
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<tr>
<td>University of Illinois at Urbana-Champaign</td>
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</tbody>
</table>

Open edX

Welcome to edX's open source initiative—Open edX CODE—working to create a next-generation online learning platform for all students around the world. Open edX is a not-for-profit enterprise composed of 29 leading educational institutions, businesses and teachers easily build and host courses for the world to take.

Since our founding in May 2012, edX has been committed to pursuing non-profit, open-source opportunities for expanding learning and recognizing Stanford University, Google, MIT, The University of California, Berkeley, and Harvard University for their significant support, and overall passion for the Open edX initiative. Together, we are ready to transform the way people around the world learn.

Open edX is already receiving code contributions from around the world. mooc.org is an edX destination. We're working to help educational institutions, businesses and teachers easily build and host courses for the world to take.

mooc.org goes live in the first half of 2014. Are you interested in creating or hosting courses on mooc.org? Complete one of the three forms below and let us know how mooc.org fits into your future.

http://code.edx.org
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Democratization?

http://blog.coursera.org/post/54132976778/8th-grade-twins-take-astrobiology
U of Edinburgh, 2013

„so many of our learners appeared to be very well educated despite the undergraduate entry-level“

https://www.era.lib.ed.ac.uk/handle/1842/6683
U of Edinburgh, 2013

- Registered: 300,000 Participants
- Active in 1st week: 150,000 Participants
- At least one forum posting
- Passed final exam

Very independent?

https://www.era.lib.ed.ac.uk/handle/1842/6683
Did Students Take Notice?

Survey among local students (bachelor’s and master’s programs), N = 77
The main users, especially in BRICS and developing countries tend to be young, well-educated males who are trying to advance in their jobs. [...] The individuals the MOOC revolution is supposed to help the most [...] are conspicuously underrepresented [...].

Sebastian Thrun, Udacity

We were on the front pages of newspapers and magazines, and at the same time, I was realizing, we don’t educate people as others wished, or as I wished. We have a lousy product.

MOOCs to Lure High Potentials?

http://blog.coursera.org/post/65596539008/introducing-coursera-learning-hubs-global
New Target Groups?

• Continuing education
• Professional development
• MOOC providers
• Participants
• **Costs**
• Course credits
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EUR 25,000?

Und hier sind die Gewinner!

Unterstehend finden Sie die zehn Gewinner des MOOC Production Fellowship Wettbewerbs. In den kommenden Monaten beginnen die Fellows damit ihre Kurse zu produzieren. Im Herbst dieses Jahres werden die ersten MOOCs live gehen.

Gewinner ansehen ➤
Udacity and Georgia Tech

Per Course:

• “Faculty stipend”: US$ 20,000 once
• Lecturer: US$ 10,000 per run
• Production: US$ 111,000 once
• “Course assistants”: US$ 33,000 per run (200 participants)

http://www.documentcloud.org/documents/703593
edX Fees

• “University self-service”: edX keeps first US$ 50,000 of revenue

• “edX-supported model”: US$ 250,000 for production, US$ 50,000 for every additional run

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San José State University is partnering with the online education company Udacity to offer five affordable online courses this summer. Courses are available to current SJSU and non-SJSU students as well.

Registration for summer courses (see below) closes on May 24 and courses begin June 3. These classes--each rich with interactive opportunities--are open to SJSU students, veterans and high school and community college students.

Students who successfully complete the College Algebra, Elementary Statistics, General Psychology, and Intro to Programming courses will earn credits transferable to most colleges and universities nationwide.

**Technical requirements** include a computer with Internet service and a web camera.

### SJSU Plus Summer 2013 Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Description</th>
<th>Class Number</th>
<th>Credits/Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MATH 6L</strong></td>
<td>(Non-baccalaureate credit) A review of topics from elementary and intermediate algebra. Completion of this course with a credit grade indicates satisfaction of the prerequisite for college level math courses. Student MUST register for the seminar AND lab.</td>
<td>Sem: 30767</td>
<td>5 credits/$150</td>
</tr>
<tr>
<td><strong>Entry-Level</strong></td>
<td></td>
<td>Lab: 30768</td>
<td></td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MATH 8</strong></td>
<td>Review of basic algebra including complex numbers, functions, graphs, polynomials, inverse functions, and exponential and logarithmic functions. General Education: B4</td>
<td>30762</td>
<td>3 credits/$150</td>
</tr>
<tr>
<td><strong>College</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Algebra</strong></td>
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</tbody>
</table>

http://www.sjsu.edu/plus/
Earn a College Credit Recommendation from ACE CREDIT with Pre-Calculus from University of California Irvine

We have great news for current or future college students! You can earn a College Credit Recommendation for 3.0 credits in mathematics for PreCalculus, all for less than $45 per credit! Pre-Calculus begins October 7th.

SIGNING UP IS EASY:

1. First, check with your school to see if they accept ACE CREDIT College Credit Recommendations (Over 2,000 schools will consider them!)
2. Then, enroll in Pre-Calculus.
3. Next, be sure to register for Signature Track by the end of the third week of the course
4. Finally, at the end of the course, schedule your online proctored Credit Recommendation exam.

You can visit the College Credit Recommendation Guidebook for a complete overview.
We’re incredibly excited to offer the first fully accredited, massive Online Master of Science in Computer Science from Georgia Tech in collaboration with AT&T. Beginning in January 2014, this degree will be offered at an affordable price, and later next Spring individual courses will also be available for students to take for free or for individual certification. Our mission with each single course is to help students advance their knowledge and careers. **Cost of the degree: $6,600**

To learn more about our program, sign up to hear the latest updates!
ECTS Credits for MOOCs?

• Transfer of U.S. credits?
• No ECTS credits without formal enrollment?
• Loopholes?
• Lisbon: reversal of evidence
Written Exam for my Math Videos?

Survey on Facebook and Google+; 186 participants

Examination Fee

- Letter from lecturer
- Letter from university
- Official ECTS certificate

<table>
<thead>
<tr>
<th>Examination Fee</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td>16%</td>
</tr>
<tr>
<td>EUR 10</td>
<td>14%</td>
</tr>
<tr>
<td>EUR 20</td>
<td>10%</td>
</tr>
<tr>
<td>EUR 30</td>
<td>8%</td>
</tr>
<tr>
<td>EUR 40</td>
<td>6%</td>
</tr>
<tr>
<td>EUR 50</td>
<td>4%</td>
</tr>
</tbody>
</table>

- Free
- EUR 10
- EUR 20
- EUR 30
- EUR 40
- EUR 50
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Paid Tutoring

• Udacity and SJSU:
  25% pass rate instead of 65%,
  73% with general audience

• Udacity: „Courses“

• Udacity & Georgia Tech: Master
Freelance Online Tutoring
MOOC as Textbook 2.0

San Jose State University and edX Announce Course Expansion to 11 California State University Campuses

SJSU will open a Center for Excellence in Adaptive and Blended Learning. The expanded collaboration follows a promising pilot where edX blended model correlated with higher pass rates.

April 10, 2013 01:00 PM Eastern Daylight Time

SAN JOSE, Calif.--(BUSINESS WIRE)--Thousands more California State University students will benefit from a major expansion to the collaboration between San Jose State University and edX, the not-for-profit enterprise founded by Harvard University and the Massachusetts Institute of Technology (MIT), today announced at a news conference attended by the university’s president, Dr. John L.辛苦, and edX’s president, Anant Agarwal.

“As students for the first time last year, new students from nearly half of the university’s student body will benefit through the blended learning approach,” said Dr.辛苦. “edX and its partners are committed to helping us ensure all of our students have the opportunity to learn in the way that works best for them.”

Through a $4 million grant from the Bill and Melinda Gates Foundation, the university and edX will create and offer a series of blended courses starting in fall 2013 that can be completed online or in a traditional classroom setting. These courses will be offered to students at 14 campuses of the California State University system.

https://www.edx.org/press/gates-foundation-announcement
Flipped Classroom: Dual Use

• One’s own videos etc.: better education (EPFL: groups of students working with videos, flipped classroom)

• Somebody else’s MOOC: cost reduction (really?)
MOOCs by Manufacturers

http://www.opencourseworld.de/pages/coursedescription.jsf?courseld=487693

https://open.sap.com/courses
Education Without Universities

• Udacity Open Education Alliance

• Badges, Endorsements, ...
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Differential Equations in Action

Problem Set 1

Problem 2:
Modify the trajectory function below to plot the trajectory of several particles, each trajectory starts at the points (0,0) given initial speed in the direction specified by the angle.

Cost function:

Central-Difference Formulas for Derivatives:

\[ f''(x_0) \approx \frac{f(x_0+\Delta x)+f(x_0-\Delta x)-2f(x_0)}{(\Delta x)^2} \]

\[ f'''(x_0) \approx \frac{1}{(\Delta x)^4} \left( f(x_0-2\Delta x) + 4f(x_0-\Delta x) + 4f(x_0+\Delta x) + f(x_0+2\Delta x) \right) \]

Which Effect is Included here?

\[ \begin{align*}
\frac{dI(t)}{dt} &= 5 \times 10^{-5} \text{ day}^{-1} \text{ person}^{-1} I(t) S(t) + \frac{1}{5 \text{ days}} I(t) \\
&= 5 \times 10^{-9} \text{ day}^{-1} \text{ person}^{-1} I(t) S(t) - \frac{1}{5 \text{ days}} I(t) \\
&= \frac{1}{5 \text{ days}} I(t)
\end{align*} \]

Vaccination • Births • Immigration • Deaths
Inside Quizzes

• Types of Quizzes
  Dead man’s switch, skill & drill, worked example, transfer, self-explanation, ...

• Roles of Quizzes
  Busywork, checkpoint, learning device, motivator, ...

• Types of Feedback
  Correct answer vs. diagnostics, text vs. video, immediate vs. delayed, ...
Easy Learning?

• „Desirable Difficulties“

• „Amount of Invested Mental Effort“
Integrated Quizzes

http://www.capira.de/
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A Fundamental Contradiction

• What we do: spoonfeeding
• Who we reach: autonomous learners

• How to do higher education?
MOOCs —
MASSIVE OPEN ONLINE COURSES

Jürgen Handke, Natalie Kiesler, Leonie Wiemeyer (Hrsg.)
The Inverted Classroom Model
The 2nd German ICM-Conference – Conference Volume

Offene Bildung oder Geschäftsmodell?