Trends and Convergence

Greater understanding of learning and learner
Focus on outcomes and mastery
Emphasis on active and collaborative learning

High quality content and access to digital resources
Platforms that support interaction and collaboration
Mobile & wireless ubiquity

Pedagogy
Technology

Collaboration
MOOCs
Learning analytics

Blended Learning
A massive open online course (MOOC) is a type of online course aimed at large-scale participation and open access via the Internet.

- In addition to online video lectures, learners are involved actively in the learning process.

- MOOCs go beyond just offering courses and content. Learning analytics allow us to understand how students learn and how teachers can improve their teaching.
HKUST’s MOOC Experience

The Hong Kong University of Science and Technology

HKUST - A dynamic, international research university, in relentless pursuit of excellence, leading the advance of science and technology, and educating the new generation of front-runners for Asia and the world.

Courses:
- Front-End JavaScript Frameworks: AngularJS
- Front-End Web UI Frameworks and Tools
- Chinese Politics Part 1 - China and Political Science
- Chinese Politics Part 2 - China and the World
- Science, Technology, and Society in China I: Basic Concepts
- The Science of Gastronomy
- Understanding China, 1700-2000: A Data Analytic Approach, Part 1
- Science, Technology, and Society in China III: The Present & Policy Implications
HKUST’s MOOC Experience

Over 450,000 learners have registered for 12 MOOCs offered by HKUST.
Hong Kong in the MOOC Arena

HKUx
Free online courses from University of Hong Kong

Established in 1911, the University of Hong Kong (HKU) is the territory’s oldest institute of higher learning. For more than a century, the University has committed itself to creating knowledge, providing education, and serving society. It has grown with Hong Kong and generations of our graduates have helped shape the city from which the university takes its name. Today, HKU is internationally renowned as a research-led comprehensive university, with frontier research endeavours and scholarly achievements that have won it worldwide acclaim.

University of Hong Kong MOOCs
Browse free online courses in a variety of subjects. University of Hong Kong courses found below can be audited free or students can choose to receive a verified certificate for a small fee. Select a course to learn more.

HKUx
HKU84x
Making Sense of News

HKUx
HKU01x
Epidemics

HKUx
HKU03x
Humanity and Nature in Chinese Thought

Upcoming: Starts: February 16, 2016
Archived

Upcoming: Starts: September 15, 2015

Upcoming: Starts: June 23, 2016
Archived
Coursera issued Request for Proposals (RFPs) in topics of high demand among learners:

- Software Development with Google
- Full Stack Web Development
- Professional Sales
- Product Management
- Social Media Marketing
- People Management
- Business Strategy
- Data for Managers
- Introduction to Analytics (Business Analytics)
- Data Analysis Fundamentals
- Video Game Design
- iOS Application Development and Design
HKUST’s MOOC Experience

The Hong Kong University of Science and Technology
HKUST - A dynamic, international research university, in relentless pursuit of excellence, leading the advance of science and technology, and educating the new generation of front-runners for Asia and the world.

- HTML, CSS and JavaScript
  On-Demand

- Server-side Development with NodeJS
  On-Demand

- Multiplatform Mobile App Development with Web Technologies
  On-Demand

- jQuery

- Bootstrap

- AngularJS

- Full Stack Web Development Specialization Capstone Project
  On-Demand
Massive Open Online Degree (MOOD)

The Georgia Institute of Technology, Udacity and AT&T have teamed up to offer the first accredited Master of Science in Computer Science that students can earn exclusively through the Massive Open Online Course (MOOC) delivery format and for a fraction of the cost of

The Buzz

» Presidential Double-Down: Obama Praises OMS CS for 2nd Time - Georgia Tech College of Computing
» Ga. Tech's MOOC Master's Degree Program Off to Solid Start - WABE Atlanta
The first MBA on Coursera from the University of Illinois

University of Illinois iMBA Program

Learn the strategic approach to management with a flexible, online MBA curriculum. A high-quality and affordable program from the University of Illinois, built on Coursera Specializations.

About the Course

START WITH A SPECIALIZATION, BUILD TOWARD A REAL DEGREE

Master corporate finance, strategy, marketing, social responsibility, and more—learn everything you need to excel in today’s global business environment.

About the IMBA

The University of Illinois is partnering with Coursera to launch the first online MBA delivered in part through the Coursera platform. This program is ideal if you’re interested in an MBA, or if you’re simply interested in the individual Specializations in the program.
MITx MicroMaster

MIT’s #1 ranked Supply Chain Management program, now delivered in additional new ways...

MIT proudly announces two new programs that offer learners around the world new ways to learn with MIT. Supply Chain professionals who seek a residential program can still apply to MIT’s 1-year masters degree in SCM. In addition, the same program and the SCM degree are now available through a new additional path: half online, half on campus.
MOOC Platforms

Major MOOC platforms:
– Coursera and edX in the US
– FutureLearn in the UK
– France Université Numérique (France Digital University) in France
– Iversity in Germany
– Open2Study in Australia
– XuetangX & CNMOOC in China
– JMOOC in Japan
– KMOOC in Korea
– .....
Welcome to Open edX @ HKMOOC!

This is the homepage of HKMOOC, the MOOC platform for Hong Kong’s Tertiary Education Sector.
Project Objectives:

- To establish a joint e-learning platform for the sharing of online courses among UGC institutions.
- To use the platform for piloting innovative pedagogies such as active learning, flipped classroom and peer instruction.
- To foster collaboration among institutions by packaging related courses offered by different institutions into curriculum programs.
- To provide a platform for collecting data on students’ learning patterns and perform learning analytics for enhancing the learning experience of students.
- To provide a platform for outreaching to post-secondary and secondary school sectors.
A Joint E-learning/MOOC Platform for Hong Kong’s Tertiary Education Sector

Institutions from UGC sector

Support will be provided for content migration from other platforms

Programs (e.g. minor, general education, summer program) will be developed through cross-institutional collaboration

Credit-bearing courses will be offered and mechanism will be set up for credit transfer

Tools will be developed for learning analytics

Institutions from Private HE sector

Hong Kong e-Learning Platform for MOOC and Blended Learning

Secondary Schools

Institutions from Sub-degree sector

Mainland and Overseas Institutions

Note: Access from outside UGC sector would not be subsidized by UGC fund.
• Offered as a flipped course in Spring 2014 and 2015
  – The course was offered with enrollments of up to 65 students.
  – Students watch online lecture videos and participate in online quizzes before class.
  – Classes start with Q&A and then redo some of the online quizzes.
  – Students then participate in group discussions and activities.
**Student Performance vs Video Views**

Total number of videos = 44
Average video hit counts per student per video

<table>
<thead>
<tr>
<th>Student groups</th>
<th>No. of students</th>
<th>Total views</th>
<th>Average views</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm score &gt;= 90</td>
<td>25</td>
<td>1465</td>
<td>1.33</td>
</tr>
<tr>
<td>Midterm score &gt;= 80</td>
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<td>2975</td>
<td>1.25</td>
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<td>Midterm score &gt;= 50</td>
<td>92</td>
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<tr>
<td>Midterm score &lt; 50</td>
<td>15</td>
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</table>
Blended Learning and MOOC: Introduction to Computing with Java

- Offered as a flipped course in Spring 2014
  - The course is divided into two sections of 45 and 65 students.
  - Students watch online lecture videos and participate in online quizzes before class.
  - Classes start with Q&A and then redo some of the online quizzes.
  - Students then participate in group discussions and activities.
- Offered as a MOOC on edX started in June 2014
MOOC on edX: Introduction to Computing with Java

Introduction to Computing with Java

Designed to equip students with the fundamental elements of programming and data abstraction using Java.

About this Course

Do you wish to become a better problem solver?

This course aims to provide you with a good understanding of basic Java programming elements and data abstraction using problem representation and object-oriented frameworks. It's an engaging and interactive course.
### Introduction to Computing with Java: Demographic Distribution

#### Geography Metrics

- **185** Total Countries Represented
- **United States**
  - Top Country by Enrollment
  - 23% of students
- **India**
  - Second Country by Enrollment
  - 23% of students
- **United Kingdom**
  - Third Country by Enrollment
  - 3% of students

#### Geographic Breakdown

<table>
<thead>
<tr>
<th>Country</th>
<th>Percent</th>
<th>Total Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>22.8%</td>
<td>8,119</td>
</tr>
<tr>
<td>India</td>
<td>22.7%</td>
<td>8,073</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>3.0%</td>
<td>1,070</td>
</tr>
<tr>
<td>Spain</td>
<td>2.9%</td>
<td>1,021</td>
</tr>
<tr>
<td>Canada</td>
<td>2.3%</td>
<td>817</td>
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<tr>
<td>Brazil</td>
<td>2.2%</td>
<td>770</td>
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<tr>
<td>China</td>
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<td>726</td>
</tr>
<tr>
<td>Mexico</td>
<td>1.8%</td>
<td>641</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1.7%</td>
<td>596</td>
</tr>
<tr>
<td>Germany</td>
<td>1.6%</td>
<td>574</td>
</tr>
</tbody>
</table>

[Download CSV]
Introduction to Computing with Java: Demographic Distribution

**Education Metrics**

- **32.7%** High School Diploma or Less
- **41.2%** College Degree
- **23.0%** Advanced Degree
<table>
<thead>
<tr>
<th>#</th>
<th>grade</th>
<th>gender</th>
<th>level_of_education</th>
<th>Location</th>
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<tbody>
<tr>
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<td>m</td>
<td>Master Degree</td>
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<td>NONE</td>
<td>Brisbane, Australia</td>
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<tr>
<td>3</td>
<td>100.00%</td>
<td>m</td>
<td>Junior High School</td>
<td>New Delhi, India</td>
</tr>
<tr>
<td>4</td>
<td>100.00%</td>
<td>m</td>
<td>Bachelor Degree</td>
<td>Caracas, Venezuela</td>
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<tr>
<td>5</td>
<td>100.00%</td>
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<td>NONE</td>
<td>Brzezce, Poland</td>
</tr>
<tr>
<td>6</td>
<td>100.00%</td>
<td>m</td>
<td>High School</td>
<td>New Delhi, India</td>
</tr>
<tr>
<td>7</td>
<td>99.50%</td>
<td>f</td>
<td>Master Degree</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>8</td>
<td>99.33%</td>
<td>m</td>
<td>Bachelor Degree</td>
<td>Hong Kong</td>
</tr>
<tr>
<td>9</td>
<td>99.20%</td>
<td>m</td>
<td>Junior High School</td>
<td>Polska, Poland</td>
</tr>
<tr>
<td>10</td>
<td>99.20%</td>
<td>m</td>
<td>Bachelor Degree</td>
<td>Tombolo, Italy</td>
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<tr>
<td>11</td>
<td>99.20%</td>
<td>None</td>
<td>None</td>
<td>Sao Paulo, Brazil</td>
</tr>
<tr>
<td>12</td>
<td>99.10%</td>
<td>m</td>
<td>High School</td>
<td>Hyderabad, India</td>
</tr>
</tbody>
</table>
VisMOOC: A visual analytics tool for MOOC developed by Prof. Huamin Qu’s research group
Learning Analysis on clickstream patterns

Data Abstraction: To separate what can be done with the data from how it is represented.
Using MOOCs for Asynchronous Flipped Courses

A model for offering course credits by combining MOOCs and face-to-face instructions

• Students from HKUST and partner institutions:
  – Complete the MOOC during Fall/Spring semester
  – Take an assessment to confirm participation
  – Enroll in a face-to-face Winter/Summer session and earn academic credits for the course

• A model to use MOOCs for expanding the international student exchange program and outreach to secondary school students
A Data Science and E-learning Research Cluster was established under the HKUST–MIT Research Alliance Consortium:

- A tripartite collaboration between universities and industries with 1:9 matching funding support from the government.
- Aims at conducting pre-competitive research with industry partners to develop innovative teaching and learning technologies in the following areas:
  - Design and development of e-learning platform
  - E-learning content development
  - Learning analytics tools
  - Crowdsourcing and social network for education purpose
  - Knowledge mining from e-learning content
  - Bridging big data analytics and behavioral sciences
- Proposals have been prepared through collaborations among Hong Kong universities and MIT.
Using MOOCs as bases for developing blended/flipped courses

Using the data collected to perform learning analytics for improving the learning experience of students.

Outreaching to students, including secondary school and sub-degree students, around the world.

Extending MOOCs in Summer/Winter terms for student exchange programs.

Packaging MOOCs into curriculum programs – Massive Open Online Program/Degree (MOOP/MOOD).

Conducting research on issues related to MOOCs.
Thank you!