MOOC Planning, Pedagogy and Production
MOOC Planning, Pedagogy and Production

Lynne O’Brien
Associate Vice Provost for Digital and Online Education Initiatives
Duke University
Your headline here...

...or here

What would your MOOC headline say?
MOOCtastic!

“MOOCs: Learning becomes a joy again”
Financial Times - March 9, 2014

“The Big Idea That Can Revolutionize Higher Education: MOOC”
The Atlantic – May 11, 2012

“MOOCs? They’re a cracking good idea”
Times Higher Education - Jne 27, 2013
MOOCpocalypse!!

“The End of Higher Education’s Golden Age”

“Report Warns of 'Avalanche' Approaching for Global Higher Education”
Inside Higher Ed – Mar. 11, 2013
MOOCollapse!!

“MOOCs: Been There, Done That”
Chronicle of Higher Education, Jan. 21, 2014

“2014: The Year the Media Stopped Caring About MOOCs?”
Chronicle of Higher Education – April 14, 2014

“Beyond MOOC Hype”
Inside Higher Ed – July 9, 2013
MOOCs are...

• Different from in-person courses or even traditional online courses
• Different from each other
• Changing rapidly
• Part of an overall ecosystem in higher education and technology
• Too new to have one right way of creating and teaching them
Overview

• Establishing goals, general planning
• Pedagogy, personnel and production planning
• Project management
• Teaching the course
• Assessment
• Impact on teaching and learning
• Trends for the future
Duke University

Home of the Blue Devils, Duke University has about 13,000 undergraduate and graduate students and a world-class faculty helping to expand the frontiers of knowledge. The university has a strong commitment to applying knowledge in service to society, both near its North Carolina campus and around the world.

Duke’s initial goals for MOOCs:

• Promote innovation in teaching
• Share knowledge in service to society
• Showcase Duke’s academic excellence
# New Duke MOOCs by school

<table>
<thead>
<tr>
<th>School</th>
<th>2012-13</th>
<th>2013-14</th>
<th>2014-15*</th>
<th>Grand Total</th>
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<tr>
<td>Arts &amp; Sciences</td>
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<td><em>Natural Sciences</em></td>
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<td>2</td>
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<td>Medicine</td>
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<td>2</td>
<td>4</td>
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<tr>
<td>Public Policy</td>
<td></td>
<td>2</td>
<td>1</td>
<td>3</td>
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<tr>
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<tr>
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<tr>
<td>Nursing</td>
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<tr>
<td>University Libraries</td>
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<td>1</td>
</tr>
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<td><strong>Grand Total</strong></td>
<td><strong>11</strong></td>
<td><strong>8</strong></td>
<td><strong>7</strong></td>
<td><strong>26</strong></td>
</tr>
</tbody>
</table>

*Planned to date
Full list of current Duke MOOCs at https://www.coursera.org/duke
Pedagogical planning –
First, take a look around

Udacity: 9 courses in data analysis  
https://www.udacity.com

EdX: 23 courses in data science  
https://www.edx.org/

Coursera: 66 courses in data analysis  
https://www.coursera.org

Open Learning Initiative: 2 statistics courses  
http://oli.cmu.edu/

Khan Academy: many tutorials & quizzes  
https://www.khanacademy.org/math/probability
Pedagogical Planning

• What MOOCs are and are not
• How should lessons learned from early MOOCs affect new courses?
• What constraints are there for the course?
• What expertise do different people bring to the project?
• Who provides quality assurance?
• How to balance instructor autonomy and institutional needs?
Personnel Planning

**Individual course needs**
- Instructor(s)
- Pedagogical consultant
- Materials producer
- Teaching assistance
- Tech support
- Assessment help
- Copyright help
- Librarian

**Overall program needs**
- Overall champion
- Communications
- Budget planning and management
- Faculty governance
- University IP and Policy advice

And others, depending on your programmatic goals
Production planning

**Course**
- Video
- Readings
- Student practice and assessment
- Discussion & social interaction
- In-person meetings and other activities

**Program**
- Project management
- Internal communication
- Press, external communication
- Interaction with hosting group or vendors
- Media storage
- Personnel management

Course material production

Are you sure video is best?
Keep it short.
Avoid talking heads.
Proper Motion

- Some nearby stars observed to move relative to distant stars
- Find tangential velocity \( v_T \) from angular proper motion \( \mu \)
  \[
  v_T = 4.74 \mu D
  \]
- Radial velocity from Doppler
  \[
  v_r = c(\lambda/\lambda_0 - 1)
  \]

http://vital.oit.duke.edu/video-kits/
## Materials production tracking

<table>
<thead>
<tr>
<th>Week #</th>
<th>Clip #</th>
<th>Descriptive Title</th>
<th>record? (this is useful if)</th>
<th>Recorded (Y/N)</th>
<th>Final Edit (Y/N)</th>
<th>Length</th>
<th>Review eby?</th>
<th>Upload server?</th>
<th>Upload course ra?</th>
<th>server filename</th>
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<td>Week 1</td>
<td>4/18/2013</td>
<td><strong>INNOVATING IN HEALTHCARE</strong></td>
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<td>7:57:00</td>
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<td>2 The Healthcare Dilemma Part 2</td>
<td>M</td>
<td>Y</td>
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<td>3 The Healthcare Dilemma Part 3A</td>
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<td>5 The Healthcare Dilemma Part 4</td>
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<td>6 The Innovation Process Part A</td>
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<td>7 The Innovation Process Part B</td>
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<td>and</td>
<td>B</td>
<td>Y</td>
<td>Y</td>
<td>14:19:00</td>
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<td>01_04_2_Healthcare_Entrepreneurs</td>
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<td>9 What is Healthcare Engineering? Part A</td>
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<td>10 What is Healthcare Engineering? Part B</td>
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<td>11 Week 1 Concluding Conversation</td>
<td>M&amp;B</td>
<td>Y</td>
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<td>11:08:00</td>
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<td>Week 2</td>
<td>4/22/2013</td>
<td><strong>FINDING WHATS NEEDED</strong></td>
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<td>12 Understanding the Clinical Context/ Scott</td>
<td>M</td>
<td>Interview</td>
<td>Y</td>
<td>At DMS</td>
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<td>13 Disease Fundamentals and Treatment</td>
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<td>14 Disease Fundamentals and Treatment</td>
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<td>Y</td>
<td>Y</td>
<td>21:34:00</td>
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<td>02_02_2_disease Fundamentals &amp;</td>
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<td>15 Observe and Document Without</td>
<td>M</td>
<td>Y</td>
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<td>16 Uncover Patterns Through Six Sigma and</td>
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<td>16:16:00</td>
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<td>17 Uncover Patterns Through Six Sigma and</td>
<td>B</td>
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<td>Y</td>
<td>13:36:00</td>
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# Course project management

## Timeline

<table>
<thead>
<tr>
<th>General planning</th>
<th>Materials preparation</th>
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</thead>
<tbody>
<tr>
<td><strong>Pre-planning tasks</strong> (complete most BEFORE video production starts)</td>
<td><strong>Week</strong></td>
</tr>
<tr>
<td>Intensive consulting/course planning begins, including signing Duke-Coursera faculty agreement</td>
<td>11/18/2013</td>
</tr>
<tr>
<td>Course description page (landing page) created (if not already) and reviewed by Coursera</td>
<td>12/2/2013</td>
</tr>
<tr>
<td>Course outline/plan complete</td>
<td>12/16/2013</td>
</tr>
<tr>
<td>Copyright review of necessary materials initiated</td>
<td>12/16/2013</td>
</tr>
<tr>
<td>Video kit available</td>
<td>12/16/2013</td>
</tr>
<tr>
<td>OCA identified and available about 25%-50% time</td>
<td>12/16/2013</td>
</tr>
<tr>
<td>Representative videos complete</td>
<td>12/30/2013</td>
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<tr>
<td>OCA available at least 50% time</td>
<td>1/13/2014</td>
</tr>
<tr>
<td>Coursera Course Development Agreement (Forms A, B, C) completed and signed</td>
<td>1/27/2014</td>
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<table>
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<tr>
<th><strong>Duration</strong></th>
<th><strong>Date:</strong></th>
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<td>8</td>
<td>4/7/2014</td>
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<table>
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<td>4/21/2014</td>
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<td>4/28/2014</td>
<td>5/12/2014</td>
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<td>5/5/2014</td>
<td>5/19/2014</td>
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<td>5/12/2014</td>
<td>5/26/2014</td>
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<tr>
<td>6/2/2014</td>
<td>5/19/2014</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Video upload to Coursera for captioning</strong></th>
<th><strong>Captioning done, in-video quizzes done, and all materials ready for student viewing</strong></th>
<th><strong>Start date for that week of the course</strong></th>
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<tbody>
<tr>
<td>3/14/2014</td>
<td>3/14/2014</td>
<td>4/7/2014</td>
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<tr>
<td>5/19/2014</td>
<td>5/19/2014</td>
<td>5/26/2014</td>
</tr>
</tbody>
</table>
Teaching the course

• Instructor and teaching adjustments
• Course management and student response management
• Tech support
• Course data gathering
• Duke: Online Course Associates (but other schools have different approaches)
  http://library.duke.edu/about/jobs/oca
QUESTIONS SO FAR?
Assessment activity

1. Individually: Write down three things you would want to know about any MOOC created at your school

BREAK / INTERACTION

2. Partners: Find two other people to talk to. As a small group, decide on the top two questions you would want answered to assess a MOOC.
Motivation and completion rates

As a result of the storm Sandy, I have not been able to maintain this course ... Is it possible that I could retake this course at a later time?

I'm going to fail... but I'm also going to learn.

Had I known the course would depend so heavily on math skills, I might not have signed up.

I'm a university finalist and have exams in a totally different subject to prioritise!

I'm doing the quizzes and spending a lot of time for the certificate.

[Certificate] for me is VERY IMPORTANT!!

As a result of the storm Sandy, I have not been able to maintain this course ... Is it possible that I could retake this course at a later time?

There's more to life than passing a Coursera. There's knowing enough to shut down the other smartypants in the car!

There's more to life than passing a Coursera. There's knowing enough to shut down the other smartypants in the car!
Assessment planning

- What do you want to know?
- What kinds of data can you collect?
- Who will analyze and report?
- Challenges so far
- Assessment resources (See bibliography)
Connecting pedagogy, production and assessment
MOOC impact at Duke

• Gather feedback for course improvement
• Conduct research or study teaching and learning
• Try out new tools and teaching techniques
• Sharpen course design & learning objectives
• Extend curricular offerings
• Provide online materials for on-campus courses
• Flip courses
• Add project work to courses
• Train graduate students
• Encourage discussion of pedagogy
• Experiment with flexible course lengths and modular curricula
Overall future trends for education

- Lifelong
- Global
- Social
- Personalized
- Open

intersecting with cost, access and quality
...a final year medical student from Brazil... here to brush up on some of the Biophysics

...in Maryland, doing research in the area of cardiac bioelectricity. I took a similar course during grad school but when I saw that the course is offered by Dr. Barr, pioneer of the field, I wanted to hear about it from the master himself.

...from China, now a bio med engineering undergrad at Boston University

...from Colorado. I have been in nursing for 20 years now and have a great interest in bio-electricity as it relates to the cardiac muscle

...finishing high school. Biology has always fascinated me so I'm choosing my future studies through coursera, bioelectricity might be the one to go for :)

...a vet from Spain interested in neurobiology

...a freelance Technical writer for healthcare, communications, customer service, and business

...an electrophysiologist and a full-time working mother with a young baby, so I don't expect to be competitive but to enjoy whatever I can learn
edX Partners with Facebook to Bring Online Education to the Unconnected World

Published: February 24th 2014, 11:32am

Read More: Education, Facebook, News, Kendall Square, Online Learning, Nokia, EdX, Rwanda, Future of Higher Ed

://bit.ly/1c1UdmY
Personalized
WAYS TO TAKE THIS EDX COURSE:

**Simply Audit this Course**

Audit this course for free and have complete access to all course material, tests, and the online discussion forum. You choose what and how much you want to do.

Free to All

**Try for a Certificate**

Looking to test your mettle? Participate in all of the course and abide by the edX Honor Code. If your work is satisfactory, receive a personalized certificate to showcase your achievement.

http://bit.ly/1iZhdPQ
Open

- Expanded access
- Creation and use of open content
- Visible teaching

I'm certain I would be denied access to this course if there were a long list of pre-requisites. It takes vision to open a topic like this to a wider audience and I feel grateful ...

Having spent the last few years teaching introductory courses at a university, I have been awestruck by the extraordinary size and organization of this course. I take my hat off to you, Roger Coke Barr, for doing this and doing it so well.
Duke Coursera student meet up
Questions and comments?