Four perspectives on MOOCs:

HOW TO MAKE MOOCS REALLY EFFECTIVE

lessons from 20 years of research into online learning

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Overview

Open learning, online learning, and MOOCs

Standards and innovation

Three basics of online learning:
- Pedagogy
- Learner support
- Costs

Ways to make MOOCs better
open universities: 40 years at least

online learning: 25 years

research: over 50 journals

MOOCs: various designs, but primarily driven by computer scientists

pedagogical research often ignored
Quality standards

for fully online learning (20)

different sectors/countries

based on 25 years of experience/research

quite similar

mainly ‘process’ focused

often unknown or ignored by instructors
Standards versus innovation

Standards:

- Common processes
- Tried and true
- Must be same context

Innovation:

- Unique process (initially)
- Risky
- New contexts

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The challenge for MOOCs

good:

- Easy to access
- Minimal cost to learners
- High quality content
- Massive numbers
- Great educational broadcasting

bad

- Massive non-completion rates
- Difficulties with accreditation
1. Pedagogy

Transmission of information vs knowledge construction

Problems with lectures: large amount of research

21st century skills: critical thinking, problem solving, knowledge management, independent learning

Knowledge is constructed, e.g. heat

MOOCs = information transmission
1. Pedagogy

- Deep vs surface learning
- Scaffolding: moving from known to unknown
- Skills need practice and feedback
- Faculty as guide/facilitator
- On a massive scale, knowledge transmission is easy
- Construction/development difficult
Three basics of online learning:

2. Learner support

Structured activities: read, collect, search, discuss, evaluate, do activities require evaluation and feedback.

Instructor’s ‘online presence’ critical: communicate, communicate, communicate.

Knowledge construction requires mainly qualitative assessment/feedback at a high level of subject expertise.
### 3. Costs

<table>
<thead>
<tr>
<th>Activity</th>
<th>%</th>
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<tbody>
<tr>
<td>Planning</td>
<td>11</td>
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<tr>
<td>Program administration</td>
<td>13</td>
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<tr>
<td>Course development</td>
<td>13</td>
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<td>Course maintenance</td>
<td>9</td>
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<tr>
<td>Course delivery</td>
<td>36</td>
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<tr>
<td>University overhead</td>
<td>18</td>
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Costs over 7 years (LMS-based online masters)
MOOC costs

High development costs
$100,000 +) with lecture capture

Moderate maintenance costs
$30,000?)

Low delivery costs: but poor completion rates

How to improve completion rates/quality on massive scale?
1. Pedagogy

More constructivist approaches

- Students find, evaluate, apply information, develop high level skills

- Faculty as teaching consultants: define curriculum/learning outcomes; oversee learner support and assessment

- Use peer-to-peer learning, 'better' computer assessments
2. Learner support

- Increase faculty online presence
  - Tutorial podcasts + text or video clips (e.g. Khan Academy)
  - Judicious ‘massive’ online interventions in discussions/assessments
  - Greater use of well-trained adjuncts (not TAs) supervised by faculty
  - Computer modeling of ‘scaffolding’
3. Redistribute/rethink costs

- Less on development/production
- More on learner support

Free or low cost?

Outsource learner support with quality controls – link to accreditation?

Identify quality issues/high cost areas and seek ‘quality’ computer solutions for high cost areas
Why not rethink a MOOC to...? 

- Develop skills as well as content
- Increase learner engagement/activity
- Increase interaction with/between students
- Get students to find/analyze/apply information
- Get students to demonstrate learning through multimedia – and assess
Conclusions

• MOOCs a ‘disruptive’ technology; need to preserve its ‘disruptiveness’
• But cannot afford to ignore 25 years of research in online learning
• Developing high quality learning the challenge
• Need to combine best practices with innovation
Conclusions

• Focus computerization on massifying core teaching functions, e.g. learner support and high quality assessment.

• Developing countries should not settle for ‘second best’.

• Be clear about where human teachers cannot/should not be replaced.

• Computer scientists and educational specialists need to work together.
Questions

Do we need to improve the educational quality of MOOCs?

Can this be done on a massive scale?

So, what kind of research/development would be needed to do this?