From MOOCs to the Unbundling of Higher Education
—Issues arising in the globalizing and digitizing world

Global Education Dialogues: The Asia Series
‘Reputation Management in Higher Education: The East Asian Context’
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The University of Tokyo
Today’s Talk

1. Why MOOCs?
   - Reputation, or Quality Education?

2. The MOOC consequences
   - Online Learning
   - Competency-based Learning
   - Personalized and Adaptive Learning
   - Unbundling of Higher Education
To MOOC, or not to MOOC:
that is the question!

Because Everyone is doing it?
Reasons to MOOCs

- Education to everyone!
- Quality Education
- Education Innovation
- Reputation
- Time/Cost Efficiency etc.
Which MOOC Platform to join?

- The Elite University Platforms
  - edX, Coursera

- Country and Regional Platforms
  - Futurelearn,iversity, JMOOC, etc.

- Other Platforms
  - Udacity, Udemy, etc.
Who is going to teach?

- The super star professor
- Best Teacher Awardee
- The one who wants to teach
Who are your targets?

- The World Students!
- Students within country (at least students with same language)
- Your own university students
Findings

Participants
- Low retention rate
- Mostly degree-holders
- White males in their 30s

COST
- $100-300k per MOOC
- TEAM: 10+ staff

Emerging Student Patterns in Coursera-style MOOCs
Are MOOCs worth it?
Impact of MOOCs

- e-learning
- OCW
- Online education
- Distance education

MOOC

Online Learning

Competency/Personalized Learning

Active/Flipped Learning

Unbundling of Higher Ed

Year?
The consequences of MOOCs

1. Residential Universities starting online education proactively

2. Coupling and emphasizing the competency-based learning and personalized/adaptive learning

3. Acceleration of higher education unbundling
The Issues in US Higher Ed

- A shrinking higher education budget followed by...
  - Tuition rise
    ...and the middle class left out of higher ed
  - Shortage in course provision
    ...and 6-yrs graduation rates falling!
Shrinking state funds at U.S. public degree-granting institutions

Revenues of public degree-granting institutions and state source ratio (1980-2010)

(出典)全米教育統計センター(NCES), Digest of Education Statistics, 2012
Tuition rise in US higher education

Tuition and Fee and Board Charges over Time

Inflation adj. Tuition
Tuition rise ratio in 5 years

Public Four-Year University

Tuition increases by almost 30% in the last five years

2013/14:

☑ Tuition and fees: $8,893
☑ with Room and Board: $18,391

（出典）College Board: “Tuition and Fee and Board Charges over Time”
http://trends.collegeboard.org/college-pricing/figures-tables/published-prices-national#Tuition and Fee and Room and Board Charges over Time
Shortage in course provision

Faculty & Staff Demography and Credits Offered at California Community Colleges (2000-2012)

Dwindling of credits offered by 20% in four years

（出典）カリフォルニア州コミュニティ・カレッジ総長室情報マネジメントシステム データ・マート（http://datamart.cccco.edu）
MOOCs
The Savior of higher ed
free!
massive
open access
Courses with credit
massive open access courses with credit
free!
The enforcement of MOOCs (2013)

- ACE College Credit Recommendation Service (ACE CREDIT®) evaluates MOOCs
- California Bill seeking campus credit for MOOCs (now put on ice)
- UK Commission on the Future of Higher Ed calls for MOOCs credit recognition and other
- European MOOC platform iversity provides ECTS credits

- Several universities starting to approve MOOCs
  - U Cal, Colorado State U, Georgia State U, Maryland U
- San Jose State University experiments with Udacity and edX
- Georgia Tech offers MOOC-like online master’s degree
- Major-like MOOC sequence: MIT “Xseries”, Coursera “Specialization”
The Misstep of MOOCs as higher ed alternative

Not leading to credits, let alone degrees!

- cautious students
- low retention rate (5-8%)
- participants mostly degree holders
MOOCs as Recreational Learning

- For adult learners
  - human development
  - learning for FUN!

Higher ed credentials relying on online programs

- For those in need of credits and degree
  - Capped number for rigorous grading
The expanding online education

- Florida Accredited Courses and Tests Initiative (FACTs)
- Distance learning should be regulated by fewer perhaps only one state
  - California bill proposes faculty-free college degrees
  - University of Florida to offer bachelor’s degree online
  - Community Colleges tries to fix remedial education online
  - Ontario Creates Online Learning Hub
  - American bar association approves hybrid program
- Vice Provost for online education for Harvard and Stanford U
- Apollo Buys Australian Online College
- Free online university receives accreditation
Merging of adaptive learning and personalized learning

- Assessment
- Efficiency
- Gaming
- Self-paced
- Time
- Personalized

Optimization of Learning modules
Stackable competencies, and direct assessment method.

**Directly assess Competencies!**

No need for study if certain competency is already acquired.

- **Competencies are stackable**
- **Advanced Manufacturing Competency Model:**
  - Precision Machining
  - Level 5: Middle Skills.
  - Machinists, Management
  - A.S degree in Manufacturing Technology at CC upon completion of Level 4 & credentialing of credits
  - Certificate of Applied Manufacturing Technology upon completion of Level 3 & ___ hours of structured, monitored OJT (can be applied toward CC degree)
  - 100 hours Advanced CNC at___
  - 40 hours Mastercam at___ & 10 hr OSHA General Industry
  - Career Prep: Resume Writing, Interviewing, Work Readiness
  - Introduction to Programming & G&D&T
- **Level 1 Entry Level:** Assemblers Warehouse
  - Shop Math
  - Blueprint Reading
  - Metrology
  - Problem Solving OR Lean Manufacturing
  - Work Readiness
- **Level 2 Entry Level:** Machine Operators, Inspectors
  - Safety
  - Inspection
  - CNC Milling Operation
  - CNC Turning Operation
  - Career Prep: Resume Writing, Interviewing, Work Readiness
- **Level 3 Middle Skills:** Machine Operators, Quality Assurance
- **Level 4 Middle Skills:** Machinist, QA Supervisor

*Career/technical students will graduate with a Level 2 certificate*

This competency model is based on the framework developed by the Manufacturing Advancement Center Workforce Innovation Collaborative (MACWIC) in collaboration with employers statewide.
The enforcement of competency-based programs

- **Student Aid Can Be Awarded for 'Competencies,' Not Just Credit Hours, U.S. Education Department Says**

- Accreditation Agencies and Lumina Foundation starts examining the meaning of competency-based education

- Various skill assessment methods developed by testing firms
  - Council for Aid to Education: ”Collegiate Learning Assessment(CLA+)”
  - Educational Testing Service (ETS): two new electronic certificates for student learning
  - ACT Inc.: WorkKeys skills assessment system

- The Bill and Melinda Gates Foundation kicks in $1 million over three years for developing competency-based education at community colleges.

- U.S. Education Department invites proposal for “experimental sites” where certain federal financial aid rules are opt out for competency-based programs
Competency-based Learning

OECD, Key Competence Lumina F, Degree Qualification Profile Tuning Project ATC21s, etc.

Competencies:
✓ Problem solving
✓ Team work
✓ Communication
✓ Logical thinking
✓ Quantitative skills, etc.

Learning modules technologically customized to individuals needs

At your own pace!

Measurable skills

Online learning
### Competencies are nurtured through diverse set of courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Civil Engineering</td>
<td>2</td>
<td>A</td>
</tr>
<tr>
<td>Structural Mechanics</td>
<td>2</td>
<td>B</td>
</tr>
<tr>
<td>Fieldwork in Spatial Information Engineering</td>
<td>4</td>
<td>A</td>
</tr>
<tr>
<td>Management of business for civil engineers</td>
<td>4</td>
<td>A</td>
</tr>
<tr>
<td>Social Decision-Making Theory</td>
<td>4</td>
<td>B</td>
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<tr>
<td>Fieldwork Seminar</td>
<td>4</td>
<td>A</td>
</tr>
<tr>
<td>Civil Engineering Project</td>
<td>8</td>
<td>A</td>
</tr>
</tbody>
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### What is he/she capable of?

- **Information processing**
- **Negotiation**
- **Machine work**
- **Presentation**
- **Entertain**
- **Time Management**
Residential Campus

College Unbundled & Re-bundled
Online learning consortium: Semester Online

Overview
- **Member**
  - Providing courses, and students attending
- **Affiliate Member**
  - Students attending only

Feature
- Live
- Limited to 20 students
- Credit bearing

Advantage
- Students can earn credits while studying abroad or working
Coursera Specialization
... Re-bundling by professors

Specializations On Coursera
Master New Skills with Sequences of Courses

Coursera Specialization:
- Master New Skills with Sequences of Courses and Capstone Project
- Fee: Signature Track Fees for the series of courses

Mobile Cloud Computing with Android
- **Course 1**: Programming Mobile Applications for Android Handheld Systems
- **Course 2**: Pattern-Oriented Software Architectures: Programming Mobile Services for Android Handheld Systems
- **Course 3**: Programming Cloud Services for Android Handheld Systems
- **Capstone Project**

An example of higher ed Unbundling process!

（出典）Coursera Specialization: “Mobile Cloud Computing with Android”
https://www.coursera.org/specialization/mobilecloudcomputing/2?utm_medium=listingPage
What are the instructional modes in the digital age?
The Changing Means of conveying information

Word of Mouth

Rare Book

Printed Books

Digital Files on Internet!
Open access, Instantly available, (free, replicable, durable)
What are the Raison d’Etre of Universities in the digital age?
W.E.B. Du Bois
Sociologist
Pan-Africanist

"The purpose of education is not to make men and women into doctors, lawyers and engineers; the purpose of education is to make doctors, lawyers and engineers into men and women."

What is the Raison d’Etre of Universities if information passing can be entrusted to online learning?

“Ultimately, learning is a social experience. Harvard is Harvard not because of the buildings, not because of the professors, but because of the students interacting with one another.”

Terry Aladjem
Executive Director, the Derek Bok CTL, Harvard U