Sharing Quality Education Resources in Chinese Forestry Education

Dr. Youqing Luo

- Vice president, Beijing Forestry University
- Secretary General, China Education Association of Forestry
Main Contents

1. Brief Introduction to Forestry Education in China
2. Major Online Education Platforms in China
3. Cooperation with Key International Online Education Platforms
4. Online Course Credit Transfer in China
5. Collaborative Programs of China’s Universities with Global Partners
   5.1 Traditional Model: Sino-Foreign Joint Education (BFU as an example)
   5.2 New Model: Sharing Quality Education Resources in the Context of MOOC
1. Brief Introduction to Forestry Education in China

1.1 Scale of forestry education in China

Forestry Education in China has formed a multi-dimensional system with diversified formats and various disciplines.

- 6 Independent Forestry Universities, 1 Forest Police College, as well as many forestry colleges or related-forestry majors established in other universities, colleges and secondary vocational schools.

- About 130,000 students of forestry science in all forestry education institutions.

- 75 forestry education institutions are offering graduate student training, and about 13,000 graduate students for master or doctor degree.
1. Brief Introduction to Forestry Education in China

1.2 History and layout of main forestry education institutions
In China, the undergraduates enrollment was only 0.28 million in 1980, reached 1.08 million in 1998. From 1999, remarkable increment started for 7 consecutive years, and increased to 5.46 million in 2006, 5.99 million in 2008 and 6.57 million in 2010.

The admissions in 2010 was 23.5 times that in 1980, and 6.1 times that in 1998.
In China, the postgraduate enrollment was only 3,616 people in 1980, but increased to 72,500 in 1998, and reached up to 536,000 in 2010. The postgraduate enrollment in 2010 was 148 times that in 1980, and 7.4 times that in 1998.
Forestry-related majors, however, only take up around 25% of all the majors, which is also a common case for forestry universities in China.
Summary

- In the past 16 years, the rapid development of China’s higher education has led to the undersupply and unbalanced distribution of quality education resources, especially between the central universities and local universities, or in East and West China.
- China is a big country but not a strong one in higher education (It is the same with its forestry education).

Solution?

- We must strengthen the sharing of domestic and foreign quality education resources through online education platforms, such as MOOC.
2. Major Online Education Platforms in China

2.1 中国慕课网  China’s MOOC — www.mooc.cn

www.mooc.cn is an MOOC platform founded by Ministry of Education of China, Higher Education Press and Netease.com, providing a total of 846 classic and specialization courses (course package produced by Coursera) from both domestic and foreign top universities.
2. Major Online Education Platforms in China

2.2 爱课程网 www.icourses.cn

Launched in 2014, icourses.cn has produced more than 800 quality MOOCs from 73 famous Chinese universities, including open video courses and quality resource sharing courses.

- **Open video courses** are free video lectures of science and cultures, open to college students and the public.
- **Quality resource sharing courses** mainly serve college students, while providing basic and core major courses to learners.
2. Major Online Education Platforms in China

2.3 学堂在线 www.xuetangx.com

Developed by Tsinghua University, www.xuetangx.com was launched in October, 2013. It integrates more than 500 online courses from over 60 domestic and foreign universities, such as Tsinghua University, Peking University, MIT and Stanford.

2.4 华文慕课 www.chinesemooc.org

Peking University launched Chinese MOOC(www.chinesemooc.org) in Feb. 2015, it’s predecessor was 北大慕课 mooc.pku.edu.cn issued in Nov. 2014.
2. Major Online Education Platforms in China

2.5 好大学在线 www.cnmooc.org
Developed by Shanghai Jiaotong University, www.cnmooc.org aims at the resource sharing and credit transfer among top Chinese universities. It has integrated 215 courses from 56 universities.

2.6 优课网 www.uooc.org.cn
Established by Shenzhen University in May, 2014, www.uooc.org.cn has a total of 90 local universities with over 30 online courses.
2. Major Online Education Platforms in China

2.7 National Coalition of Featured Online Course Resources for Forestry Universities

Here I want to give an emphasis to the Coalition for Forestry education. The coalition has basically completed the establishment of the online course platform.

Initiated by BFU, the national coalition was established in May, 2014, with a total of 10 forestry universities.
3. China’s Cooperation with Key International Online Education Platforms

With Coursera

- Fudan University, Shanghai Jiaotong University and Peking University joined Coursera in 2013, followed by Nanjing University, Xi`an Jiaotong University, China University of Technology.
- Up to now, the Coursera platform has 31 courses from Shanghai Jiaotong University, Nanjing University and Fudan University.

With edX

- Only Peking University and Tsinghua University joined edX on May 21st, 2013.
- By September, 2015, Tsinghua University has entered 18 courses into edX.
4. Online Course Credit Transfer in China

www.mooc.cn launched the service of authentication certificate in August, 2014. A learner will be issued a paper certificate after finishing the course and passing the exam. The certificate will be effective only after the exam results are accepted by www.mooc.cn, Higher Education Press, the home university and the lecturer.

The following courses are available in the authentication certificate list: Advanced Mathematics I/IV, Fundamentals of Computer from National University of Defense Technology, Methodology of Flipped Classroom from Peking University, C Language Programming from Zhejiang University, Introduction to Computational Thinking from Harbin Institute of Technology.
### 5. Collaborative Programs of China’s Universities with Global Partners

#### 5.1 Traditional Model: Cooperative Training Program & Joint Education Program

<table>
<thead>
<tr>
<th>Program Type</th>
<th>Cooperative Training Program</th>
<th>Joint Education Program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Premise</strong></td>
<td>Transfer and Mutual Recognition of Credit</td>
<td></td>
</tr>
<tr>
<td><strong>Target</strong></td>
<td>currently enrolled students in various majors</td>
<td>students specially enrolled to the program</td>
</tr>
<tr>
<td><strong>Authorization</strong></td>
<td>Universities are authorized to conduct the programs independently, but the programs need to be filed to MOE.</td>
<td>The programs must be approved by MOE.</td>
</tr>
<tr>
<td><strong>Tuition</strong></td>
<td>flexible: both parties charge their own tuitions.</td>
<td>Fixed: the tuition standard is approved by MOE and both parties share a fixed proportion.</td>
</tr>
<tr>
<td><strong>Curriculum</strong></td>
<td>Flexible: students are free to choose their courses and programs</td>
<td>Fixed: students must follow a fixed curriculum.</td>
</tr>
<tr>
<td><strong>Certificate</strong></td>
<td>Domestic degree or dual degree</td>
<td>Foreign degree or dual degree</td>
</tr>
</tbody>
</table>
## BFU as an example

<table>
<thead>
<tr>
<th>Partner</th>
<th>Temple University</th>
<th>Michigan State University</th>
<th>University of British Columbia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>Finance, Vehicle Engineering, Biological Technology, Landscape Architecture</td>
<td>Turfgrass Management</td>
<td>Wood Science and Technology Biological Technology</td>
</tr>
<tr>
<td>Starting Year</td>
<td>2011</td>
<td>2003</td>
<td>2013</td>
</tr>
<tr>
<td>Program Structure</td>
<td>3+2 Bachelor + Master</td>
<td>3.5+0.5 Bachelor</td>
<td>3+2 Bachelor</td>
</tr>
<tr>
<td>Curriculum</td>
<td>Domestic: 3 Years Abroad: 2 Years</td>
<td>Domestic: 3.5 Years Abroad: 0.5 Year of internship</td>
<td>Domestic: 3 Years Abroad: 2 Years</td>
</tr>
<tr>
<td>Certificate</td>
<td>BFU Bachelor Degree + Temple Master Degree</td>
<td>Dual Bachelor Degree</td>
<td>Dual Bachelor Degree</td>
</tr>
<tr>
<td>Annual Admission Scheme</td>
<td>open to all enrolled BFU students</td>
<td>35</td>
<td>30</td>
</tr>
<tr>
<td>Total Enrollment</td>
<td>3</td>
<td>368</td>
<td>152</td>
</tr>
<tr>
<td>Graduates</td>
<td>2</td>
<td>243</td>
<td>0</td>
</tr>
<tr>
<td>Tuition</td>
<td>Adjusted annually by Temple</td>
<td>domestic: ¥ 5500/year</td>
<td>domestic: ¥ 23000/year</td>
</tr>
<tr>
<td></td>
<td>abroad: $350/credit</td>
<td>abroad: 800CAD/credit</td>
<td></td>
</tr>
</tbody>
</table>
strengthened cooperation with partner universities in other countries, mutually promoting talent cultivation

◆ **Governmental scholarships**
  ✓ *Chinese Government Scholarship*
  ✓ *Beijing Municipal Government Scholarship*

◆ **Scholarship sponsored by NGOs**
  ✓ *APFNet Scholarship*
Project of Innovative Sustainable Forest Management Education in the Asia-Pacific Region under the FCDMM-APR

www.fcdmm.org

BFU
UBC
UM
UPLB
UPM
Online Courses

**Sustainability Forest Management in a Changing World**
The course provides an overview of the criteria and indicators that are used worldwide to guide sustainable forest management practices and explains how these will vary in a changing climate.

- Start learning
- Course forum
- Homework
- Resources

**Governance, Public Relationship and Community Development**
This course highlights the importance of understanding and effectively managing the social or human dimension of forestry as a requisite to achieving the goal of sustainable forest management.

- Start learning
- Course forum
- Homework
- Resources

**International Dialogue on Forestry Issues**
This course addresses the origins, development and current status of international policy debate related to natural resources management in general and forests in particular.

- Start learning
- Course forum
- Homework
- Resources
Restoration of Degraded Forest Ecosystems & Forest Plantation Development
This is a course about the principles and practice of tree growth for restoration of degraded forests and for forest plantation development.

Start learning  Course forum  Homework  Resources

Sustainable Use of Forest Ecosystem Services
This course focuses on the sustainable production, utilization, and marketing of wood and other non-timber forest products (NTFP) in conjunction with the promotion of the sustainability of forest ecosystem services.

Start learning  Course forum  Homework  Resources

Forest Resource Management and Protection
This course will focus on managing the key factors that impact the quantity and quality of forest resources such as tree growth, disturbances like invasive species and fire, human management, and socio-economic factors.

Start learning  Course forum  Homework  Resources
5.2 New Models: Sharing Quality Education Resources in the Context of MOOC

(1) Position and Function of MOOC?

As a complementary method to improve traditional learning and increase learning effects, MOOC

- Provide shareable quality / top-ranking course resources in national/regional/global level. (Only the top-ranking courses with the best compatibility in terms of form and contents can be integrated into the MOOC system with transferrable credits.)

- Never completely replace the traditional classroom teaching

- Be foundation for flipped classroom teaching, interactive and research teaching.
5.2 New Models: Sharing Quality Education Resources in the Context of MOOC

(2) What kind of courses is MOOC suitable for?
   Based on China’s university major and course category,
   - MOOC is most suitable for public elementary courses (especially general and broad-spectrum courses like humanity and diathesis courses) and also applicable to certain professional basic courses and professional core courses.
   - MOOC is basically suitable for theoretical courses, but not so suitable for practical courses (such as experiments and practices).
   - MOOC is impossible to globally share some courses with distinct ecological and geographical characteristics, such as the professional core courses of forestry. For example, China covers a vast territory, and there are even northern and southern versions for the courses of Dendrology and Silviculture.
   - Above-mentioned problems should be taken into consideration when we draft the course list for the second phase of our online course project.
   - Otherwise, it’s impossible to realize the credit transfer.
Case study of courses for global sharing MOOC

<table>
<thead>
<tr>
<th>Suitable for global sharing MOOC</th>
<th>Not suitable for global sharing MOOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botany</td>
<td>Dendrology</td>
</tr>
<tr>
<td>Ecology</td>
<td>Forest Ecology</td>
</tr>
<tr>
<td>Entomology</td>
<td>Forest Entomology</td>
</tr>
<tr>
<td>Pathology</td>
<td>Forest Pathology</td>
</tr>
<tr>
<td>Wood Processing</td>
<td></td>
</tr>
<tr>
<td>Biological Technology</td>
<td></td>
</tr>
<tr>
<td>International Trade</td>
<td></td>
</tr>
</tbody>
</table>
5.2 New Models : Sharing Quality Education Resources in the Context of MOOC

(3) Main existing problems

Most of the MOOC courses, at least the courses in China:

◆ Be on the initial / preliminary stage, and the quality are still arguable;
◆ Still lack an effective mechanism for credit transfer;
◆ Not compatible to the openness of MOOC, due to the gaps between different majors from different universities in different regions or economies;
◆ Not systematized the fragmented knowledge structure, which cannot meet the requirements of professional core courses for undergraduates;
◆ Be short of international competitiveness, because most national MOOC courses are delivered in Chinese with only a few in English.
5.2 New Models: Sharing Quality Education Resources in the Context of MOOC

(4) Reform of Administration Mechanism of Education

- MOOC could fall into the following two categories: the first type is for scientific publication or reference and the second type is for credit transfer. We should pay special attention to the second type.
- Recognition, promotion and coordination between universities are crucial for credit transfer in a point-to-point way. Otherwise MOOC is just a game, and cannot be developed in a sustainable way.
- Therefore, first, quality evaluation and credit transfer are premises, second, sharing of tuition will further guarantee the sustainable development of MOOC.
- Otherwise, MOOC will deteriorate into a free internationalism or nihilism.
5.2 New Models: Sharing Quality Education Resources in the Context of MOOC

Guideline on the Application and Management of University Open Online Courses issued by MOE of China (2015) highly promote the innovation of credit transfer and credit management system:

1. Regulations must be formulated for evaluation of learning effect and credit transfer of online courses

2. Universities are encouraged
   - to formulate learning quality criteria for online courses
   - to integrate the qualified courses into the bachelor curriculum.
   - to carry out the credit recognition, credit transfer and learning process identification of online learning and classroom teaching.
Thank you!

Broader and Brighter
International Cooperation
此张无须翻译