The Chinese National Top Level Courses Project

Using Open Educational Resources to Promote Quality in Undergraduate Teaching

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Chapter 1: Introduction

In 2003, Massachusetts Institute of Technology (MIT) launched its OpenCourseWare website, which eventually came to contain online resources for virtually every course taught at the institution. This received much media attention, and gradually a number of other institutions joined in by publishing their own courses. In 2005, the OpenCourseWare Consortium was formed, and it became independent in 2007. The consortium members from 24 different countries use similar software and organizing principles for their materials. If you look at a course in Japan, or in Saudi Arabia, you are likely to find the same elements: a course outline, a reading list, lecture slides and in some cases lecture recordings, and sometimes sample exams, or samples of student work.

If you visit Dr. Li Xuejun's course on pharmacology at the website of Peking University, you will find the structure very familiar. There is an introduction to the course, a list of the members of the teaching team, reading lists, lecture slides, lecture recordings and even some exam questions. This course is one of more than 12,000 open courses that have been developed by faculty from more than 700 Chinese universities, as a part of the Chinese Ministry of Education's National Top Level Courses Project, which started in 2003. Despite the large scale of this project, very little is known about it outside of China. Most of the English-language sources that mention it, assume naturally that it is another OpenCourseWare project, similar to those in Korea, Japan and Taiwan, for example, with roughly the same purposes and organizational principles as in the other 39 countries implementing MIT-inspired OpenCourseWare projects. MIT reports themselves frequently mention the Chinese project as one of the positive impacts of the MIT OpenCourseWare project.

I was first made aware of the existence of these courses in 2007, when I followed the open online course "Introduction to open education" by Dr. David Wiley. After finding the references in MIT's evaluation report, both to MIT OpenCourseWare translated into Chinese, and to "homegrown" OpenCourseWare produced by Chinese universities, I became very intrigued, and decided I wanted to learn more about it.

There are different ways of analyzing this global spread of the OpenCourseWare concept. Meyer and Ramirez at Stanford University believe that higher education systems around the world are "converging", and becoming more similar. The fact that universities in 39 countries should choose to implement the same system for sharing their courses online, would seem to be a strong case for this argument, with China making a very strong addition.

However, Steiner-Khamsi and Stolpe's research on educational policy in Mongolia shows that the government would often adjust its terminology to match international trends and demands, thus placating donors and making it seem like Mongolia was headed towards convergence, while the actual situation on the ground was quite different. They believe that to ascertain whether something is truly a case of "borrowing policy", or merely using similar words for different purposes, it is necessary to have a thorough understanding of a country's history, culture and institutions. Inspired by this, I decided I wanted to examine how the Chinese Top Level Courses Project was organized, and how it fit in with the larger trends in Chinese higher education.

Objectives

Without understanding properly how the National Top Level Courses Project is organized, it will be very difficult for foreign organizations to engage and collaborate with Chinese institutions. In scope, this is by a wide margin the largest Open Educational Resources project in the world, and much could be learnt from the Chinese experience. It also presents a very fascinating platform for different kinds of research on the production, use and reuse of Open Educational Resources. However, none of this is possible without a thorough understanding of how the program functions, why and how it was initiated, and how it fits into the broader trends of Chinese higher education.

Thus my main objective in this thesis is to give a clear and succinct overview of the Top Level Courses Project, and situate it in the Chinese higher education context. I will also compare the project to the MIT OpenCourseWare model, and discuss the formation of international opinion about the Top Level Courses Project

using theories of world institutionalism, and policy borrowing and lending.

Research questions

The first question I asked was "what is this program". I wanted to understand all the details around how the program was organized, how courses are created and by whom, how the program is financed, and who uses the resources. The program began in 2003, so I also wanted to look at how it has changed through this time period. I then wanted to understand how it came to be launched at exactly that time in history, looking at the history of Chinese higher education for clues of trends that could have led to the program being launched. Finally, I wanted to know how different the program is from the MIT OpenCourseWare, and also how it became known among Western audiences. To summarize:

- What are the purposes of the project, how does it operate, and how has it developed since it was launched
- What were the historical circumstances that led to/informed the launch of this project
- How is the program different from, or similar to, MIT OpenCourseWare
- How was the international understanding of the project shaped?

Organization of the thesis

I will begin by a literature review in chapter two, which will focus on two main topics. First, I will review some of the literature on Open Educational Resources, including the definition and a brief history of the term. I will also introduce some different types of Open Educational Resources from around the world, and a typology of Open Educational Resources projects, based on the purposes they aim to achieve. Then an introduction to the literature surrounding international borrowing and lending, including the theories of world institutionalism and global convergence by Meyer and Ramirez, and the focus on local meanings and practices in the work of Steiner-Khamsi and Schriewer.

In chapter three, I will discuss my methodology, which was a qualitative iterative process. I conducted 8 interviews with university professors who had produced Top Level Courses, people from the academic affairs offices of two universities, and one official related to the Ministry of Education. In addition, I had many informal conversations with Chinese colleagues, and consulted the Chinese literature widely, as well as the English literature regarding the history of Chinese higher education.

In chapter four, I will give an overview of Chinese higher education since 1949, focusing especially on the evolution of how courses were developed, and mechanisms for evaluating courses. The overview will also describe the large-scale investment in higher education through projects 985 and 211, as well as the explosion in enrolment from 1998 to 2008. I will show how internal course evaluations, and the focus on promoting excellence through peer-review and additional funding, as well as the strong focus on IT in education, were all factors that led to the creation of the Top Level Courses Project in 2003. This chapter is mainly based on Chinese and English secondary sources.

In chapter five, I will describe the Top Level Courses Project in detail. I will begin with the details around the creation and announcement of this project in 2003, and how it was defined by the Ministry of Education. I will describe how the project is implemented as a competition for the best courses, with three levels (university, provincial and national) and several types (undergraduate, online and vocational). I will also describe how the project developed from 2003-2010, with the biggest change coming with the renewal of the program in 2007, when it became a part of the Quality Project, and the national portal homepage was launched. I will then discuss the findings from my interviews with Chinese professors and administrators in detail. This section will draw on government reports, Chinese academic papers, formal interviews conducted with professors and staff at two universities and one Ministry of Education official, as well as informal communications with a large number of Chinese academics who research open education.

In chapter six, I will analyze some of the salient differences between the MIT OpenCourseWare project and the Chinese project, using the typology I developed in chapter two. The Top Level Courses Project has been described in Western academic publications as a form of OpenCourseWare run by an organization called China Open Resources for Education (CORE). I will explain the background for CORE, and how this image of the Top Level Courses Project was spread outside of China. Finally, I will revisit the discussion on borrowing and lending that was introduced in chapter two, and argue that a deep understanding of a foreign culture, as proposed by Gita Steiner-Khamsi, will often reveal that similar terms have very different meanings.

I will conclude by proposing that there is a fundamental difference in how university teaching is

conceptualized in China and North America, drawing both from the historical French jand German models of the university, as well as China's own educational history. I will then discuss what the West could learn from the Chinese project, and suggest some questions for future research.

Chapter 2: Literature review

Introduction

In this chapter, I will first introduce the concept of Open Educational Resources, define the concept, and discuss the history of MIT OpenCourseWare. I will then develop a typology of Open Educational Resources based on their purpose, which will be used in chapter six to compare MIT OpenCourseWare with China's Top Level Courses Project. The final part of the literature review will introduce the concept of world institutionalism, and a critique of the view that educational systems around the world are converging. This will also be further discussed in chapter six.

Open Educational Resources and MIT's OpenCourseWare

Outside of China, the Top Level Courses have been widely understood to represent a form of Open Educational Resources, and in chapter six we will compare this project to the MIT OpenCourseWare project. To be able to do this, it is necessary to understand more about the definition and history of the concept of Open Educational Resources. In this section, I will also introduce a proposed typology for Open Educational Resources, based around their purpose, which will be useful for comparing the Top Level Courses Project to the MIT OpenCourseWare project.

Open Educational Resources (OER) is a term used for any educational material that is freely available over the Internet. The term was coined at a 2002 UNESCO meeting, and after several years of development of projects and ideas, the community's understanding of the term was crystallized into the Cape Town Open Education Declaration in 2008 (UNESCO 2002; Cape Town 2010).

The term is commonly understood to mean that the material is also covered by an open license, usually a Creative Commons license, which specifies which additional rights users have to modify, share and reuse the material. This is related to the history of the concept, which came out of the Open Source movement, where programmers freely share the source code of their programs with each other and encourage hacking and improvement.

The free software movement began with Richard Stallman, who was one of an early group of hackers at the MIT Artificial Intelligence Lab. The fledgling computer programmers freely shared code and their modifications with each other, and when commercial companies began imposing copyright on their software, and locking down the code, Stallman reacted by drafting the GNU Public License (GPL) and founding the Free Software Foundation. The essence of the GPL is that that you have the right to use the program, distribute it to others unchanged, modify it, and distribute (or even sell) your modifications – as long as you grant these same rights to your own derivative work (Xu and Stallman 2010).

Since then, the free software/open source movement has grown rapidly, with products like Linux, Firefox and Open Office.org in common use, and participation by companies and governments around the world. Partially inspired by the success, and the idealist ideas of the free software/open source movement, there have been many initiatives to extend the ethics of free/open access to information into other spheres. This has given rise to a burgeoning free culture movement, based on the Creative Commons license written by Lawrence Lessig; the open access to research movement to promote free access to scholarly publications; and an open education movement.

One of the early attempts to apply these ideas to education was the idea of "learning objects", discrete units of instructional material that could be reused and recombined for various purposes. This would allow a similar pooling of resources that had been seen in open source (Norman and Porter 2007). There was also experimentation with creating an appropriate open license for education and cultural works. In 1998, David Wiley announced the first open content license. This license was based on the premise that educational content should be freely developed and shared "in a spirit similar to that of free and open software" (Wiley 2003). Later, the Creative Commons license was developed, and is now used by almost all open education projects (Carroll 2006).

In 1999, Provost Robert Brown at Massachusetts Institute of Technology (MIT) launched a committee of faculty, students and administrators to "consider how MIT should position itself in the use of educational technology and distance learning" (Vest 2006, 20). After deliberating on the extant business models, and considering how MIT could make a unique contribution to the field, their recommendation to Vest was for all the

material to be made freely available to the world. Thus, on April 4, 2001, Vest announced that within the next 10 years, nearly all of MIT's courses would be made available on the Internet, and that this new program would be known as MIT OpenCourseWare (MIT news 2001a).

By 2007, MIT's ambitious goal had been reached, and today they have published "core academic materials – including syllabi, lecture notes, assignments and exams – from more than 2,000 MIT courses" (MIT OCW 2007, 2010d). This very expensive undertaking – each course cost between $10,000-$15,000 to put online – was mainly financed by the Willam and Flora Hewlett Foundation and the Andrew W. Mellon Foundation, through a joint initial grant of $11 million (MIT news 2001b). During this period, MIT worked together with the Hewlett Foundation, which committed to long-term funding of a range of Open Educational Resources, to spread the idea of OCW to other universities, and countries (Hewlett Foundation 2005).

The OpenCourseWare Consortium was formed in 2005 to promote the further spread and uptake of the OpenCourseWare idea, and to support the institutions that participate (MIT OCW 2010a; OpenCourseWare Consortium 2010f). It defines the minimum requirement for an institution to join the OpenCourseWare Consortium as a commitment to publishing ten courses online (OpenCourseWare Consortium 2010f). Although some courses include video or audio from the lectures, most courses are quite skeletal, and are not designed for distance teaching, but mainly for re-use by other educators and self-study by motivated students. This is underlined by the use of a Creative Commons open license, which allows anyone to redistribute and modify the materials, as long as they do not make a profit, and give the same reuse rights to their own derivative material (MIT OCW 2010c).

It is important to recognize that there is a wide variety of Open Educational Resources available, ranging from open textbooks projects, repositories of learning objects, collections of lecture videos, online virtual laboratories and virtual tutors, to databases of public domain works and academic blogs. In this thesis, I will focus mostly on the specific OpenCourseWare model, which focuses on making available resources pertaining to full university-level courses, because the Top Level Courses Project has often been compared to OpenCourseWare, and because their final products (the open courses) are structurally very similar.

Typology of Open Educational Resources based on their purpose

There are many models for developing Open Educational Resources, and this is partly because the goals of the various projects are different. To make this clearer, I propose a typology of Open Educational Resources based on their purpose. When people develop Open Educational Resources, they make many decisions regarding format, scope, organization, licensing and so on, and these are informed by the purpose the resource is to fulfill, as well as technological and organizational limitations. After publication, the resource can be used in many other ways by different users, indeed one of the strengths of the open licenses is to enable this kind of unexpected use and reuse, however the original purpose is still a useful guide. To be clear about the purpose is not only important for the design of the project, but is also a necessity for any rigorous evaluation to take place.

It will be useful to think of the development of Open Educational Resources as fulfilling four very broad purposes: transformative production, direct use, reuse, and transparency/
consultation. These categories are inspired by and expand upon Caulfield's (2009) distinction between openness as reuse, and openness as transparency. Which of the purposes are seen as most important, will have an impact on what kind of resources are produced, and how they are produced.

By transformative production, I mean that the process of producing the resource in itself has a transformative effect upon the people involved in the production process. Just as the purpose of writing an essay in school is not to generate a large amount of finished essays, but rather in the effect on the person writing the essay, this category suggests that the purpose of the production of open resources, or the opening of existing resources, is the effect it will have on those involved. This effect is always present even unintentionally, and could be positive – where teachers put more efforts into their teaching, because they know they are being filmed – or negative – when teachers abstain from experimenting in class, because they are afraid of having their failures caught on tape. However, this category covers projects that have this transformative effect as their main goal for the production of open resources. It is different from the three that follow, which all pertain to the resources after they have been produced.

By direct use, I mean that the student can visit the resource and use it to learn independently. This means that the resource would ideally contain all the material needed to learn, ie. be complete. The resource should also be developed for the web, taking advantage of the

possibilities offered by interactive quizzes, simulations, games, and other mechanisms. Developing this material might be expensive, and it should be clearly targeted to a specific group. A good example in this category is the Carnegie Mellon Open Learning Initiative courses (see for example Dollar and Steif 2008).

By reuse, I mean that the material can be modified, redacted, and integrated with other material. In this case, the student does not directly access the material, but the access is mediated through an intermediary — for example a teacher, or a curriculum developer. In this case, the material needs to be openly licensed, so that the transformation is legal. Material in this category does not need to be complete, or targeted to a specific group, since it will be repurposed. The material in this category is often not organized as an entire course, but as a large collection of small modules. The material should ideally be available in file formats that are easy to modify by the user. A good example in this category is Rice University's Connexions project, which uses small modules, an open XML file format, obligatory open licensing, a built-in system for derivation and attribution, and a flexible system for quality review to facilitate reuse and the creative building upon other's work (Baraniuk 2008).

By transparency/consultation, I mean that the material will not be used directly by learners, nor will it be "reused" or repurposed by intermediaries. Rather, it will be available for people who are interested in learning about how a given class is taught. This could be other teachers, who wish to get inspiration about different ways of teaching the same thing, or students who are planning to choose a major, and would like to know what a given subject entails. It could inspire other teachers, or even provide materials for a comparative curriculum study. This requires material that reflects as closely as possible what actually happens in the classroom, or material that is distributed to students in a normal situation. The OpenCourseWare projects are good examples of this category, and so are the open textbook repositories in India and Indonesia (Ghosh and Das 2006; Hariyanto 2009).

World institutionalism and policy borrowing

At the 2008 Open CourseWare Consortium conference in Dalian, China, representatives from universities in many different countries were gathered to report on the progress, and share their experiences with opening up access to their course materials. Chinese researchers shared statistics on how large a percentage of students were aware of OpenCourseWare, Japanese professors showcased their latest OpenCourseWare semantic search tool, and Mexican researchers from the Tecnologico de Monterey showcased applications for mobile learning. The concept of OpenCourseWare had decidedly gone global.

This would seem to support the idea that national education systems are converging globally. The view that there is a clear trend towards increased similarity in values and system design as the result of worldwide emerging models is held by Meyer, Boli, Thomas, and Ramirez (1997, 145), who state that

> worldwide models define and legitimate agendas for local action, shaping the structures and policies of nation-states and other national and local actors in virtually all of the domains of rationalized social life — business, politics, education, medicine, science, even the family and religion.

Applied to higher education, world institutionalism predicts a growing trend towards isomorphism, rather than divergence, in higher educational systems (Meyer, Ramirez, Frank and Schofer 2006). This theory proposes that educational systems are not only converging in structure, organization and content, but also in such values of education as views of progress and social justice. The fact that 39 countries are currently members of the OpenCourseWare Consortium, and have universities that publish courses openly and share teaching materials freely, could be seen as further proof that global values and institutions are converging (OpenCourseWare Consortium 2010a).

However, this theory is not without critics. Anthropologist Anderson-Levitt (2003) criticizes convergence theories for taking global schooling models at face value, and Schriewer and Martinez (2004, 33) similarly believes that we have to look below the surface, and the terms employed, to see whether they are actually describing the same reality:

> There is a convergence of educational reforms, but perhaps it is only at the level of brand names, that is, in the language of reform. Once a discourse is transplanted from one context to another and subsequently enacted in practice, it changes meaning.

They also differentiate between internationalization as a real process, and internationality as a semantic construct that can be referred to selectively, according to the "changing problem constructions internal to a given educational system" (Schriewer and Martinez 2004; Silova 2009). They show how policy borrowing does not happen systematically, for example following a simple centre-periphery model, but rather is structured by the

needs and discourses in any relevant society. References to educational innovations in other nations are often employed as a rhetorical tool to promote change that is desirable by certain groups. To discover these processes, the multi-country statistical analysis often performed by the world institutionalist group has to be complemented by very fine-grained analyses of individual cases of educational borrowing, taking into account the local context, including culture, history, power structures and discourse.

In her book *Educational import: local encounters with global forces in Mongolia*, Steiner-Khamsi and Stolpe (2006) discuss global educational policy borrowing through the lens of Mongolia. They show how the government uses the language of modern Western innovations, but does not change its actual practices on the ground. This is similar to what Schriewer and Martinez (2004) describe as using "Ausland als Argument". In many cases, the Mongolian government had to adopt the language of the donors, for example applying for funding for girl-child education, even if girls were far outperforming boys in school already. In other settings, a government will refer to external examples to lend legitimacy to their policy decisions, in some cases even "borrowing policy" even though the practices are already being carried out locally. In some cases, the terminology is adapted to lend credibility to desirable programs nationally, and in other cases, to receive funding from donors with specific priorities (Steiner-Khamsi 2004).

In chapter four and five, I will give a detailed account of the historical background and context in which the Top Level Courses Project was conceived, and the details surrounding the project. I will then compare it to the OpenCourseWare model, using both the typology proposed above, as well as the theories on world institutionalism and its critiques discussed just above.

Chapter 3: Methodology

Introduction

Given that very little was known about the Top Level Courses Project outside of China when I began my research, my research has been mainly exploratory. Rather than defining my research questions early on, and testing very rigorous hypotheses, I have had to pursue the topic through a number of channels until I reached a better understanding of what I was researching. Indeed, I began with very different ideas about how the Top Level Courses Project functioned, and how it had come into being. It was therefore very important that my research be flexible enough to be able to change direction when new information came up and new insights emerged.

I used a number of different sources to triangulate information. My formal interviews took a disproportionately long time to set up, but were important in giving me access to professors who had produced Top Level Courses, but had no background in education or university administration. I then gained a deeper understanding through many informal meetings with colleagues in departments of education, and through testing my ideas through presentations given. I consulted a selection of Chinese academic sources, as well as government reports and news releases. And finally, the courses are all openly available, so I also spent time visiting courses online, and using the course portal.

I employed the following four categories of sources of qualitative data for this study:

1) literature review of the Chinese academic literature, about the global open education movement in general and about the Chinese OpenCourseWare project specifically

2) government reports and policy documents, also policy documents and evaluation reports from individual institutions of higher education

3) open-ended key informant interviews conducted with three categories of people: a Ministry of Education official, people in leadership positions at institutions involved in the Chinese OpenCourseWare project, and professors who produce content for the Chinese OpenCourseWare project

4) informal interaction with professors and graduate students, participation in conferences, and feedback from presentations about this topic by the author

Secondary literature and online resources

There has been very little written about the Top Level Courses Project in English. Usually, it is only mentioned as part of an article about OpenCourseWare or Open Educational Resources as an example of a large-scale project, but little is conveyed about the actual design, functioning, and purpose of the project (and indeed much that is conveyed is misleading, as we shall see in chapter six). In Chinese, however, there has been a large number of academic papers written about different aspects of the project, with the database China Academic Journals listing more than 3,500 papers directly related. It is a limitation of this thesis that I was not able to read

a large number of these, nor did I find any good survey papers giving me an overview of the research and the field.

In my reading a select number of these papers, I considered them both as part of the general literature review that helped me find useful data and theoretical approaches, but also as "primary sources". Given that many of the authors are academics directly involved in the production of OpenCourseWare, the literature can give insights into how they perceive the international movement, as well as the Chinese program, and what research questions they find relevant.

At the beginning of my research, I was fortunate to get help from a Chinese professor at Northwest Normal University in the same field. She helped me select a number of articles that were relevant to my research questions, and this was a great help in gaining an initial understanding of the project. In addition to academic papers, and some MA theses, I reviewed policy statements by the Ministry of Education, and press releases by individual universities. These are fortunately mostly all online, and searchable. Since the online course material that is the final product of the Top Level Courses Project is required to be open to the public, I was also able to visit a number of courses directly, and look at the material. This thesis will not look at the specific contents of courses, or analyze the courses pedagogically or otherwise, but this exercise was useful to gain a better understanding of what the project "looked like".

Formal interviews

I spent three months in the summer of 2009, and another four months from December 2009 to March 2010 in China, collecting data for my thesis. I had originally planned to visit three universities, but due to time constraints and problems with securing institutional permission, I ended up visiting two institutions. My ethics proposal was only approved days before the summer vacation, so I was not able to conduct any of my formal interviews during the summer.

When I came back in winter, there were still several weeks of preparation at both the sites before I could obtain signatures for the institutional consent letter from the university vice-presidents that I needed according to my ethics protocol. I established contact with the two universities through the personal contacts of members of my committee, and in both cases received an introduction and support from colleagues in the department of education at the target university.

With significant help from my contacts in the departments of education, we managed to gather the necessary recommendations and signatures from other officials (such as the departmental party secretary, and the foreign affairs office), for the consent letter to reach the vice-president (or equivalent position). After having obtained this institutional consent, I had also asked for a list of possible interview candidates. In both cases, they introduced me to someone at the academic affairs office, and I received a list of professors that taught courses that had received a provincial or national Top Level Course award. I contacted these individuals myself through the telephone, and made it clear that there would be no negative repercussions for them in refusing the interview, and that I would not inform anyone else of whom I interviewed. Some of these chose to confirm with the academic affairs office whether I had really received permission to conduct interviews, before responding.

I then agreed to meeting the professors at a time and place of their choosing, often in their offices, and asked them to read through, and sign, the informed consent form. This form, like the institutional consent form that had been signed by the vice-president, had been translated into Chinese for easier understanding (these forms are all listed in the appendices). It was clear to me that Western research ethics procedures made things much more complicated in a country that is not used to such procedures. Most professors were very willing to speak openly about their experiences, but became hesitant when they had to sign a long legal-sounding letter. Most agreed to sign, but I was forced to decline the offer from one participant who would be very willing to speak with me, but was reluctant to sign the consent form.

All interviews were conducted in Chinese, and recorded using the open source software Audacity on a portable MacBook computer. I made sure that the recordings were made anonymous (no personally identifiable information was available) and sent the digital files to a professional transcriber in Beijing.

The consent form stated that all participants would receive a copy of the transcribed interview, and have six weeks to submit corrections, or entirely withdraw their participation. I made a mistake in not asking for the participant's e-mail addresses on the consent form, but with their names and institutional affiliations, I was able to easily find these through the Internet. Three people submitted corrections to the transcript, and none chose to withdraw from participation after the interviews had taken place.

University A is a top-ranking national comprehensive research-intensive university in a major city. University B is a provincial level normal university in a different part of the country. At University A, I interviewed the person in the academic affairs office responsible for coordinating their Top Level Courses production (A0), as well as two professors, professors A1 and A2. At University B, I interviewed the head of the academic affairs office (B0), as well as three professors, professors B1, B2 and B3, one of whom (B3) is also involved in the provincial Top Level Courses evaluation process. Additionally I interviewed someone on the national evaluation committee of the Top Level Courses Project (C0).

Informal interactions

During my total of seven months in China, I had a number of opportunities to learn more about the Top Level Courses Project through informal interactions with colleagues. A year prior to beginning my research, I attended a large Open Educational Resources conference in Dalian, co-hosted by China Open Resources for Education and the international OpenCourseWare Consortium. The contacts I made there were very useful to me in my later work. I later visited with professors and graduate students of education at South China Normal University, Minzu University of China, Tsinghua University, Beijing Public Security University, Peking University, Beijing Normal University and Shanghai Jiaotong University.

I was also invited to give a number of public presentations, where I presented my preliminary findings, and was able to test theories and ideas on an informed audience. I gave public talks at South China Normal University, Beijing Normal University (the Social Learning Lab), Minzu University of China, the Open University of China, the Educational Technology Research Summer School at South China Normal University 2009, the Educational Technology Research Summer School at Peking University 2010, Shanghai Jiaotong University and the Top Level Courses Project Resource Centre. All of these presentations, with the exception of the presentation at Shanghai Jiaotong University, were made in Chinese.

These interactions were crucial for developing my understanding of the Top Level Courses Project, guiding me to relevant literature I might have missed, and connecting me further to persons of interest that I could learn from. This experience also enabled me to prepare much better for the formal interviews which I would conduct later. During the research phase, I helped professor Han Xibin (韩锡斌) from Tsinghua University edit a short research note about the Top Level Courses Project for the British Journal of Educational Technology, and worked with professor Wang Long (王龙) from the Chinese People's Public Security University to translate and edit a longer article about the development process of Top Level Courses. This intense interaction and collaboration with Chinese academics was very helpful in gaining a better understanding of my research topic, and in understanding Chinese higher education as a whole. The approach is also similar to that of O'Brien (2006) in his field work in China, where he would test his developing arguments directly on his interviewees during the course of the research.

At the conference in Dalian, I also met many of the key players in North American and international Open Educational Resources projects, and later attended a number of international conferences on this topic in the United States and Canada[1]. This helped me understand better both the organization and motivations behind North-American Open Educational Resources projects, and also how the Chinese project was viewed by non-Chinese.

Chapter 4: History 1949-2003

Introduction

In this chapter I will review the history of higher education in China beginning with the formation of the People's Republic in 1949, with a special focus on the curriculum development process and course evaluation systems. I will show how China began implementing a very rigid and centralized curricular system in the 1950's, which they imported from the Soviet Union, and which lasted until the middle of the 1980's. In that period, control over the curriculum was loosened up, and at the same time, we see the first traces of course evaluations.

I will argue that this history is crucial to understanding the factors that enabled the Top Level Courses Project to be launched in 2003. The history of government oversight over the curriculum, teaching teams and course evaluations in individual universities came together with a focus on selecting and funding

[1] Open Education 2008, Logan, Utah Connexions Conference 2009, Houston, Texas; Hewlett Grantee's Meeting 2009, Monterey, California; Open Education 2009, Vancouver, British Columbia; Hewlett Grantee's Meeting 2010, New Haven, Connecticut.

excellent units, a focus on IT in education, and a desire to maintain or improve quality in the face of explosive enrolment growth.

Learning from the Soviet Union

The Soviet Union had already in the 1930's implemented central control over the higher education curriculum, with the Ministry of Higher Education establishing a standardized academic calendar, curriculum, course schedule and detailed course requirements for all specializations. Every lecture course was given a syllabus with highly detailed prescriptions of ingredients (Korol 1957, 209, 329). The Soviet system was also based on clear specializations that began from the first year of study.

When the students from the 1919 May 4th reform movement in China were seeking foreign ideas, they looked to Japan, America and Europe, but also to Soviet pedagogy, and later the Soviet school system had a strong impact on schooling in the Communist base areas (Yang 2004). In 1945, Mao reaffirmed that China should use the Soviet Union as an example, and after the founding of the People's Republic of China in 1949, the Vice Minister of Education stated that to learn from the Soviet Union should be the main direction of developing a new educational system (Mao and Shen 1989, 84)

The first Soviet expert groups arrived already in October that year, visiting Shanghai and Beijing, and giving talks on the Soviet system (Mao and Shen 1989, 83-86). Although the first few years were marked by a cautious approach, which rewarded existing universities that had a fairly liberal approach, and introduced a credit-system for choosing courses, this period of openness was short-lived. Before long there was a closer and closer identification with the Soviet Union, away from self-reliance and toward an all-out emulation of Soviet patterns and practices (Hayhoe 1996).

For higher education, two universities would serve as "beachheads" for integrating Soviet expertise and experience within the Chinese national context: The People's University for social science, and Harbin Institute of Technology for natural sciences and technology. The People's University was a brand new university, created on the model of Soviet institutions, and directly overseen by senior members of the government (Mao and Shen 1989, 89). This university was a huge investment for a young country, and in 1950, it represented 20% of the national educational budget (Cheng Fangwu, cited in Mao and Shen 1989, 90).

From 1950-1957, the People's University hosted more than 98 Soviet experts, a larger number than any other university. These experts helped train teachers, conduct research on teaching and develop pedagogical theory, teach graduate students, and develop educational material. In 1954, a large national meeting was held at the People's University to popularize the lessons learnt. The meeting was well attended, and because of the high status of the university, many other universities wanted to send teachers there, or to collaborate with the researchers at People's University (Mao and Shen 1989, 92).

Different from the People's University, which was created from scratch, Harbin Institute of Technology was an existing university that was chosen for its position in a border-region with Russia, where most students were Russian descendants and spoke Russian (Mao and Shen 1989). Originally called Harbin Sino-Russian Technical School, it had been established in 1920 as a Russian-language institution to provide personnel for the China Eastern Railway Company. Interestingly, the school was reorganized in 1922 in a very similar effort to the great national reorganization of departments which would come in 1953 (see below).

In 1935, the area where the school was located had become part of Manchukuo, a Japanese puppet-regime, and a process of Japanization changed both the structure and the language of instruction at the school (Otsuka 2001). This dual heritage of both the Russian system, and the rapidly industrializing Japanese system, made it a key institution for Russian technical experts. From 1951 to 1957, the university hosted 67 experts from 26 different Russian universities, which helped train graduate students, determine the educational plan for each specialization, and create models for undergraduate courses in technology and natural sciences (Mao and Shen 1989, 92).

Very little of the teaching material from before the founding of the People's Republic of China was kept. Instead, detailed teaching plans were drawn up by the Soviet experts, and a large-scale program of translating Soviet material began. By October 1957, 1869 teaching publications and mimeographed sheets had been translated and compiled (Zhou Yuliang 1986, 448-449). Due to the strong centralization of the higher education system, also a lesson from the Soviet system, this material was in use at all Chinese universities. As Lewin et al. (2004, 147) put it:

> The overriding characteristic of curriculum development in China since 1949 has been central control of a nationally unified teaching syllabus. What to teach in schools (educational objectives, content selection), when and how to long to teach it (timetabling), and, to a lesser extent, how to

teach and evaluate students, have all been the subject of detailed central guidelines.

Zhou Yuliang (1986, 459-460) mentions Zhejiang Normal University as an example of how pervasive the Soviet influence was. In 1955, the university offered 153 courses. Of these, 41 were based on texts directly translated from the Soviet Union, and the other 79 had been developed based on Soviet models.

The Russian influence was not only limited to course materials, but extended to the entire organization of the higher education sector. The Russian higher education system was organized with specialized universities focusing on teaching, and with research happening mainly in research institutes, such as the Chinese Academy of Science (Hayhoe 1987). Universities were not all under the Ministry of Education, but rather were organized under, and funded by, their respective ministries. These were sometimes defined by product, as in the case of the Universities of Iron and Steel, which were administered and funded by the Ministry of Iron and Steel, and whose graduates would go on to work in the iron and steel industry (Hayhoe 1989).

The reorganization of colleges and departments in China (yuanxi tiaozheng, 院系调整), which was part of the first Five Year Plan (1953-1957), aimed at reorganizing the whole Chinese higher education sector according to this pattern (Hayhoe 1996). At the institutional level, the organization of curriculum by colleges, each with several departments, which had been common in the pre-1949 universities, was now cancelled. Universities had departments directly under their central administration, and specializations within departments now became the main organizing unit for the curriculum, with the credit system terminated, and each specialization following a uniform curriculum, and being given an annual quota of students.

The result of this was a centralized and rigid system, with very little freedom for students to choose their courses, and for teaching faculty or institutions to design programs of study, or determine the contents of individual courses. The rigid organization of departments and specializations meant that there was very little scope for collaboration, or even contact, across the disciplines.

From the Great Leap Forward to 1977

The Great Leap Forward began in 1958, and aimed to make China much more self-reliant and able to rapidly catch up to the developed world. During this period, there was wide-spread experimentation in the Chinese education sector, with more focus on grassroots education and indigenous knowledge (for example schools of traditional Chinese medicine). There was also more focus on applied research – universities were encouraged to set up small factories, and linkages between higher education institutions and the research organizations were strengthened (Hayhoe 1996).

In this period, there was a strong movement to develop more local curricular content, with students contributing to writing new textbooks, and introducing regional differences. This happened together with a strong growth in non-formal and adult education, with evening classes at regular universities, and spare-time universities attached to state-owned enterprises and rural communes. The result was a mushrooming in the number of institutions of higher education (from 229 to 1289), and the number of students enrolled – although questions were raised about the quality of education provided through these non-formal institutions (Hayhoe 1996).

In 1963, however, there was a retrenchment, following the losses that had been experienced through over-ambitious efforts at expansion in the Great Leap Forward, and the famine that had happened. The Ministry of Education issued the "Decision on Unifying Management in the Higher Education System", which stated that the central ministry had the full responsibility for preparing teaching plans (jiaoyu jihua, 教育计划) for each specialization, teaching outlines (jiaoyu dagang, 教育大纲) for each course, and textbooks that were nationally standardized (Hayhoe 1987). The preparation of these materials was led by the Ministry, in consultation with academic subject committees, whose members were often professors at the most prestigious universities. Each specialization had several teaching and research groups (jiaoyanzu, 教研组), responsible for researching methods to transmit knowledge as efficiently as possible (Hayhoe 1989).

The teaching plans for each specialization contained four points: the purpose of formation in that specialization, the organization of time, the structuring of all the required courses and the arrangement of the teaching environment. The teaching outlines for each course included a statement of aims and requirements for the course, list of important content areas in appropriate order, list of basic reference texts, and teaching guidelines (Hayhoe 1989).

Cultural revolution

During the Cultural Revolution, there was a strong growth in the informal track of education and in basic level education. This had begun to emerge during the

Great Leap Forward, and now grew strongly, as a more radical political faction took control of the government. The educational ideas of the Cultural Revolution were based around the idea of giving workers and peasants broad access to education. There was a also a phenomenal growth in secondary education, and a strong push for full integration between the educational system and all aspects of social life – the very opposite of the Soviet specialization and departmentalization that had reigned before (Hayhoe 1996).

Formal universities were mostly shut down between 1967 and 1971, with students travelling throughout the country making revolution and learning from the experiences of workers and peasants (Hayhoe 1987). When they reopened, they mostly taught shorter and more general programs (Hayhoe 1989). However, the system became very politicized, for example abolishing merit-based exams in favour of recommendations based on class-background and political objectives. Age limits were eliminated, together with the merit-based entrance exams and the examination-based grading system, and the number of school years needed for graduation was reduced (Yang 2004).

There was great discontent with the centralized Soviet-inspired curriculum that had prevailed, and the People's University, which had been one of the beachheads for Soviet influence in China, remained closed over the entire period from 1967 to 1977. Similarly, the national bureaus responsible for planning and disseminating the standard teaching plans, outlines and textbooks were abolished, and old textbooks were criticized for being too theoretical, and narrowly specialized (Hayhoe 1987). Committees of students, teachers, and worker-peasant-soldier representatives were set up to take responsibility both for administering higher education, and for creating new teaching materials that would reflect local needs. The ideal was both to give control over the knowledge that would be transmitted to teachers and students, and to ensure strong links between academic and real-life knowledge (Hayhoe 1987).

Continuity and change after the Cultural Revolution

In discussing the reestablishment of the university system after the Cultural Revolution, Pepper (1990, 131) believes it was essentially a continuation of the pre-Cultural Revolution model from the 1960s:

> In all other respects, the university system that was reestablished between 1977 and 1980 essentially replicated the antebellum model of the 1960s, which was essentially the same as the Sino-Soviet compromise variation that had emerged from the early 1950s pro-Soviet period. Hence, all of that system's centralized features abolished during the 1966-76 decade were restored. These included the national unified college entrance examinations, unified enrolment and job assignment plans, unified curricula, and systematized rules and regulations for everything.

As an example, the "Decision on unifying management in higher education" was affirmed by the Central Committee in 1979, and the Ministry of Education was again given the role of regulating nationally standard teaching plans, teaching outlines, and textbooks. The Ministry of Education only administered 38 higher institutions directly, but it made all major curricular decisions for the 226 institutions administered by other national ministries, and the 411 institutions administered by provinces, municipalities and autonomous regions (Hayhoe 1987).

However, change was coming, and the changes to the "The Sixty Articles", which had originally been proposed in the retrenchment period of the early 1960s, were harbingers of greater openness. Universities were to be centres of both teaching and research, as of the Decision on Reform promulgated in 1985, not only of teaching, and intellectuals were to be regarded as part of the working class, thus having greater freedom of action (cited in Zhou Yuliang 1986, 461). There was also a small increase in the power of university presidents, although the role of the party committee was still important (Hayhoe 1989).

With the 1985 reform, the government aimed to:

> change the management system of excessive government control of the institutions of higher education, expand decision-making in the institutions under the guidance of unified educational policies and plans of the state, strengthen the connection of the institutions of higher education with production organizations, scientific research organizations and other social establishments, and enable the institutions of higher education to take the initiative and ability to meet the needs of economic and social development. (cited in Hayhoe 1989, 40-41).

Universities gained much leverage in adjusting the objectives of various disciplines, formulating their own teaching plans and programs, compiling and selecting teaching materials (Hayhoe 1991). There was also a reduction in required course hours in favor of electives, more time for self-study and student initiatives. The role

of the Ministry of Education was no longer to produce authoritative teaching plans and outlines, but rather to organize teaching material committees (jiaoyu ziliao hui, 教育资料会) and guide the development of material. It also acquired foreign curricular material from from a wide range of countries, not only the Soviet Union, but also Japan, Germany, France, and the United States, among others, and organized their translation and distribution (Hayhoe 1989).

The beginning of course evaluations

Around the same time that the universities gained more freedom over their curriculum and teaching, efforts began to measure and improve the quality of courses. The Shanghai Higher Educational Bureau began experimenting with evaluation in 1983, to raise the quality of teaching, strengthen the teaching of basic courses, and improve the training of practical ability. At all 45 institutions of higher education in Shanghai, courses on the history of the Chinese revolution, political economy, philosophy, English, Chinese, higher math and general physics were examined to catch teaching problems, and to promote the reform of teaching (Zhou Yuliang 1986, 458). In 1984, the Higher Education Bureau of Jiangsu province conducted the first peer-reviews of teaching quality in teacher's colleges and universities since the founding of the People's Republic of China. The process lasted 25 days and involved 50 people, who examined a broad range of materials and questions:

- Conditions of teaching work, including teaching documents
- Whether implementation and reform of teaching content met the proper requirements
- Whether the questions in examinations were written scientifically and seriously
- Teachers' academic levels
- Attitudes towards teaching
- Teaching methods and teaching results
- Students study burden
- Study attitudes and the ability for self-study
- Aptitude tests

The purpose of this peer-review exercise was for institutions to learn from each other. It was purely qualitative, with no standardized measurements (Zhou Yuliang 1986, 459-460).

There were a number of other experiments with teaching evaluation, using different units of analysis. Zhejiang University and East China Chemical Industrial College both implemented evaluation of departments in 1983. The next year, Beijing Normal University also implemented an evaluation of course teaching quality in their departments. In 1985, South China Normal University experimented with course evaluation throughout the whole school. A trial program for appraising the quality of teaching, based on teaching attitudes, content, methods, and results, was printed and dispatched to all departments (Zhou Yuliang 1986, 459-460).

After these various experiments, the practice of evaluating courses and teaching practice in higher education gradually became formalized in 1985. In May, the "Decision on Reform of the Educational System by the CPC Central Committee" pointed out that "the educational and intellectual sections and the employment units are to be organized to appraise the levels at which institutions of higher learning are run" (State Education Commission, cited in Zhou Yuliang 1986, 461). In June, the Ministry of Education organized a meeting on the problems of evaluation in engineering education, and then in November published the "Circular on the Implementation of a Study and Experiment on Appraisal of Higher Engineering Education", which contained the two appendices "The Standard System for Appraisal of the Educational Levels at which Higher Industrial Institutions are Run" and "Measures to Enforce the Appraisal of the Educational Levels at Which Higher Industrial Institutions are Run" (State Education Commission, cited in Zhou Yuliang 1986, 461).

In December, the State Education Commission held another meeting, on the reform of teaching work in comprehensive universities. There, it was decided to conduct tests of teaching evaluation at Nanjing University, Fudan University, Wuhan University, East China Normal University and Beijing Normal University. In May 1986, the State Education Commission entrusted East China Normal University with convening a working conference on the evaluation of specialities and courses in higher education. At this meeting, universities proposed various programs and standard systems of evaluating the quality of teaching, based on their own experiences and pilot programs. This led to the collectively drawn up document "Comprehensive Standard System of Appraisal for the Quality of Courses" (Zhou Yuliang 1986, 461-462).

Course evaluation and quality assurance

Since the beginning of formal course evaluations in 1985 with the appraisal of engineering education, systems of quality assurance developed rapidly. Evaluation and recognition of excellence among courses were used to foster competition and reform of curriculum and teaching approaches (HEEC 2010).

One of the two universities I visited during my research, University B, is a normal university (university with teacher training as an important part of their mission). The academic affairs officer there explained to me how their course evaluation developed, since they first began evaluating courses internally in 1987. Those course evaluations looked at the quality of the teachers, the academic level of the teachers, teaching team composition, teaching content, and teaching materials. The initial courses selected for evaluation were the key obligatory courses in each specialization. After beginning experimentally in 1987, they regularized the process in 1988, and added the competition to become designated as an "excellent course" (youxiu kecheng, 优秀课程). The following year, they added the requirement that every single course would pass an "approved course" (hege kecheng, 合格课程) test.

The test was quite simple, it just required a course to have an approved teacher or teachers, a syllabus, and use approved teaching materials. The academic affairs officer at University B explained that their motivation was to get rid of those courses without a syllabus, where teachers went "all over the map", and to standardize educational quality. University B continued this evaluation system until 1992, when the provincial Bureau of Education began evaluating key courses, which continued for almost ten years. In 1997, the State Education Commission began to organize the National Teaching Achievements Awards, which were received by 422 teachers in the first year (MoE 2010). In 2000, the province also began evaluating and selecting excellent courses. University B had been prepared to evaluate again, but that was the one and only round of evaluations, because the system then became superseded by the National Top Level Courses Project (Mr. B0).

In the meantime, the State Education Commission had issued "Regulations for the Award for Instructional Achievement" in 1994, as a result of studying the power of teaching awards to motivate teachers and administrators (Wang Xiufang 2003). In the late 1990s, the Commission began randomly selecting a few universities each year for teaching audits. These were conducted at all levels of universities, and included examining teacher performance, portfolios, textbooks, student assignments, teaching records and examination papers. Some provinces and municipalities, like Shanghai, also began organizing their own centralized course evaluation projects. In addition, it became common for universities to let senior and retired university faculty attend classes taught by junior faculty to provide feedback and critique (Vidovich, Rui and Currie 2007).

In addition to a narrow focus on teaching and courses, systems for evaluation and quality assurance of entire institutions also appeared. In 1990, the State Education Commission released the "Draft Regulation of Higher Education Institution Evaluation", which was the first regulation of higher education evaluation (HEEC 2010). This was followed by the "University Evaluation Standards Project", which released standards for the evaluation of six different categories of institutions: comprehensive universities, industrial colleges, agricultural and forestry colleges, medical colleges, finance and economics colleges, and foreign languages colleges.

All new undergraduate degree-granting colleges were required to undergo this evaluation, and by the end of 2002, 192 institutions had gone through the process. In 2003, the "Action Plan of Education Innovation 2003-2007" made it clear that all higher education institutions must undergo quality evaluation every five years. The work is carried out by the provinces, and supervised by the new Higher Educational Evaluation Centre of the Ministry of Education, which was founded in 2004. This centre maintains a pool of over 1,000 experts, who performs the evaluations, and provides them with regular training (HEEC 2010).

Massification of higher education, and prestige projects

In 1993, the Ministry of Education released the "Outline for Reform and Development of Education", which focused on building up approximately 100 key universities and a number of key disciplines. Project 211, which was mentioned in this plan, was launched through the project "Reform Plan of Teaching Contents and Curriculum of Higher Education Facing the 21st Century" in 2004, which ratified the establishment of 211 big projects and nearly a thousand sub-projects with tens of thousands teachers participating. The plan covered areas of teaching such as teaching ideology, teaching contents, curriculum structure and teaching methodology, and was supported by an advisory group of domestic experts from all disciplines (MoE 2010).

According to Futao Huang (2005), the main objectives were to intensively finance Peking University and Tsinghua University to enable them to become world-class universities, to enhance the quality of 25 other leading universities, and to improve the quality of over 300 key disciplines in different institutions. During the first phase, from 1996 to 2002, about 18.3 billion RMB was allocated from the central government, and by September 2004, 99 universities had been selected and given special support by the government (Huang 2005).

This was followed by an "Action Plan for Education Promotion for the 21st Century" in 1998, which mentioned a number of large projects, such as the "Project for Creating Talented People with a High Level", the "Plan for Creating the Most Excellent Universities and Disciplines in the World", "Modern Long-Distance Education", and the "Project for Industrializing the High Technology in the Universities" (Huang 2005). The Action Plan also launched project 985, which again began by funding Peking University and Tsinghua University intensively. In July 1999, the Ministry of Education added seven more institutions, and by 2010, it had funded 43 universities.

1998 also saw the beginning of a large scale increase in enrolment in Chinese higher education, with the Ministry of Education releasing the "Action Plan to Vitalize Education Facing the Twenty-First Century". This plan set targets for educational reform and development until 2010, and stipulated a large increase in enrolment. In 1999, Chinese higher education institutions enrolled 4.5 million students, and by 2010, this number has increased to almost 30 million (Pretorius and Xue 2003; Shen 2010). In terms of coverage, the higher education system has gone from covering 3.5% of the cohort in 1991 to 22% in 2002, while the average institutional size quadrupled from 2,381 to 8,715 students (Li and Lin 2008). Since 2003, China has also had the world's largest national higher education system (UNESCO 2003).

The final large trend during the 1990s was university mergers. The higher education system had been patterned after the Soviet Union, as has been shown in the early part of this chapter, and thus it had a large number of very specialized universities. Many of these were now compelled to join together to form large comprehensive universities (Mao, Du and Liu 2009).

Preparing the way for the Top Level Courses Project

This chapter has summarized developments in Chinese higher education during the last 60 years, to show the factors that may have enabled the Top Level Courses Project to develop in the way it has. After the founding of the People's Republic of China, the Soviet system of higher education was imported whole-sale through Russian experts, and translation. From 1950 to 1976, there was a constant struggle between the extreme left, and the moderate factions, leading to excesses like the Great Leap Forward and the Cultural Revolution. During these periods, education became much more localized and applied. However, once the disruption was over, the system quickly reverted to the stable centralized and highly controlled model, which lasted until the reform period at the end of the 1970's, and beginning of the 1980's. The gradual opening up of courses, and increased autonomy for individual universities and professors was immediately followed by the development of course evaluation systems.

Throughout the whole period, there has been a tension between equality and excellence. While the 1990's and 2000's have seen a large growth in the entire system, there have also been a number of important projects that directly fund excellent units. The 211 Project not only selected the top universities in China, but also the top departments, all of this through a peer review process. In the next chapter, I will argue that the Top Level Courses Project can be understood as a natural extension of this, going from selecting and funding excellent universities, to selecting and funding excellent departments, to selecting and funding excellent courses. These courses are then held up as examples to others, and because of the advent of the Internet, courses are also published online – which fits perfectly with the strong push for use of IT in education which has been present since Project 211. The next chapter will discuss the Top Level Courses Project in detail.

Chapter 5: Description of the Top Level Courses Project

Inception

This chapter will give an in-depth description of the Top Level Courses Project. I will first give a birds-eye view of how the project is organized. I will then use a number of case studies to discuss how the application and evaluation process works, seen from the eyes of individual professors, academic affairs staff, and leaders in the program.

In 2001, the Ministry of Education released a document called "Some ideas about strengthening undergraduate teaching and improving pedagogy in higher education" (MoE 2001). This document laid out

the case for an improved focus on teaching, including an increase in financial resources, and encouraging more full professors to teach undergraduate courses. Teaching quality was to be made an important criterion for promotions, young academics were to receive special training in teaching and pedagogy, and more courses were to be taught in English, or a mix of English and Chinese. The final two recommendations are particularly relevant to the Top Level Courses Project: more educational technology was to be applied in education, and the document also called for the establishment and improvement of teaching quality monitoring and assurance systems.

In April 2003, the National Top Level Courses Project was formally launched by the Ministry of Education (MoE 2003). It set forth a plan to use the development, selection and publication of Top Level Courses to carry out the goals of the 2001 policy mentioned above, to which it made explicit reference in its justification. The creation and evaluation of these model courses would act as a catalyst and promote the improvement of all courses, raising the general importance of pedagogy and teaching within universities. The policy called for all universities to design a comprehensive plan for how the project would be implemented, to make sure that it raised the quality the teaching at the entire university.

The head of the academic affairs office at University B (B0) explained that enrolment in Chinese higher education had begun expanding rapidly from the year 1999, transitioning from elite education to mass higher education. This expansion happened too fast, and there was not sufficient equipment or teachers available. According to Mr. B0, this led to society doubting the quality of instruction. The Top Level Courses Project was designed as a way to make universities and individual professors care more about the quality of instruction.

Professor B3 puts the project into a historical perspective, and shows how it was the natural consequence of a trajectory that had begun with the Ministry of Education first focusing on evaluating the best national universities, and increasing their funding. The second step had been to identify national key disciplines, so that a given university would have educational technology as its key discipline, another economics. These were also peer-reviewed, and implied increased funding, and a responsibility to lead the development of that particular field. However, a discipline is still very broad, so finally the Ministry of Education decided to evaluate individual courses.

Criteria for the selection of courses

The initial policy defined a quality course as being a model course with "first-class teaching teams, first-class teaching content, first-class teaching methods, first-class course materials, first class teaching and first-class teaching management" (MoE 2003). These "six first-classes" are mentioned in almost all literature on the project, and were also repeated by most of my interview participants.

The specific aspects listed in the first policy paper specified that the courses should be taught by top teachers, who have long experience and influence in their fields. This was partially to address the desire, also expressed in the 2001 policy paper, to attract full professors at top universities into spending time teaching core undergraduate courses. The content of the course should be up-to-date and reflect the cutting edge of the academic field. The course should be taught with advanced and innovative teaching methods.

Teaching materials should either be award-winning nationally approved materials, materials developed by the teachers themselves, or material from abroad. More experiential and practical learning was encouraged, for example experiments and internships. Finally, the university was to set up effective incentive and evaluation mechanisms for rewarding participation in the project, and effectively selecting and improving appropriate courses.

In 2004, a more detailed policy note appeared, which provided further information about the requirements for courses. Both regular undergraduate courses, and courses from vocational schools, that had already been taught for at least three years, were accepted. The head of the teaching team should be a full professor. To evaluate that person's teaching capability, a minimum of one 50 minute video recording had to be made available on the website, but universities were encouraged to put up recordings of all lectures. In addition, the syllabus, lesson plans, exercises, laboratory guides, and reference material also had to be made available online (MoE 2004).

In the previous chapter, a number of course evaluation systems that preceded the Top Level Courses project were discussed. One of these, at Tsinghua University, actually gave its name to the Top Level Courses project (Han Xibin and Ju Feng, personal communication). According to Mr. B0, most of the categories listed, such as teaching teams, teaching contents, teaching methods, teaching principles, and the academic level of teachers, were similar to earlier evaluation methods. The most important innovation was

the focus on educational technology, ie. developing internet resources and then sharing them openly.

Development of selection criteria

As the Ministry of Education has gained experience, there have been continuous changes from year to year of the evaluation criteria for Top Level Courses. These range from minor variations in the rating rubrics used, to more large-scale changes in priorities. The actual rubric used to evaluate courses has five comprehensive indicators: teaching teams, teaching content, teaching conditions, teaching methods and practice, and instructional outcome. These five are subdivided into 15 secondary indicators (one was removed in 2008) as listed by Wang Peng (2008):

- teaching team, including responsible person and main lecturer
- the composition and quality of teaching team
- educational reform and educational research
- the course content
- the organization and planning of the course content
- the practical components (removed in 2008)
- teaching materials and other resources
- conditions for practical components
- online teaching environment
- instructional design
- instructional approach
- instructional practice
- instructional outcomes – evaluation by peers, by university supervisor,
- student evaluations
- evaluation of recorded materials

When it comes to large scale changes in focus, Professor B3 commented that initially the online resources were not that important, because the Internet was not very developed at the time that the Top Level Courses Project started. As the web grew in importance and sophistication this changed, and in 2004 and 2005, requirements about the functionality and design of the course website increased.

Likewise, Mr. B0 stated that the provinces and the Ministry of Education have focused increasingly on the sharing of resources and providing a service to others. This is a marked change from the first few years, when the application process was the main focus. Initially there were not many courses, and attracting a number of high-quality courses was the focus. Later, as the number of courses increased, it became important to offer better access to these resources, which led to the creation of the Jingpinke.com portal (see the later section on this).

Wang Peng (2008) who studied how the evaluation criteria had changed from 2003-2008, also identified a number of trends. He reaffirmed the added focus on instructional design, pedagogy, use of technology, impact and sharing, and the building of local teams. When evaluating the changes, it is often more interesting to look at the explanations given for the different criteria, than the weight assigned. For example, the explanation for the criteria “evaluation of recorded materials” changed from specifying “dignified bearing, clear sound, full of teaching enthusiasm, lively class atmosphere, high student participation rate, and effective student-teacher interaction” in 2003 to asking for "influential teaching which attracts students attention, enlightens and inspires thinking, association and creativity” in 2004 (ibid. 39).

As new categories of courses were added, new rubrics also had to be developed. For example, the evaluation of online courses put more focus on course resources for self-learners, the teaching and learning process, and learning support design. Zeng, Zeng and Fan (2007) believe this to be natural, and mention high student numbers, and a focus on adult learners that need practical and vocationally oriented training as key features distinguishing distance education from teaching programs in traditional universities.

Two stages of development

The Top Level Courses Project’s official title was “Project for the quality of teaching and reform of teaching in institutions of higher education, work on the construction of Top Level courses”, and was always meant to be a part of a larger project for enhancing quality and reforming teaching in higher education. In 2007, the State Council, the Ministry of Education, and the Ministry of Finance officially launched the three year "Project for Reform of Teaching and Improvement of Teaching Quality in Institutions of Higher Education", usually referred to as the Quality Project (zhiliang gongcheng, 质量工程). The project launch had been preceded by more than a year of investigation, research and open meetings with stakeholders (Li Bin 2007).

This project targeted 1000 universities with 10 million full-time students, and was to cost approximately USD $365 million. The targets were as follows: Help 3000 professors and administrators to develop peer

training exchanges, select 1000 national-level teaching teams, give awards to 500 top national teachers, develop 500 experimental teaching centers, 500 individual talent development and creativity areas, and 500 high quality bilingual classes (Jingpinke 2010). In addition, the project would restructure majors, publish teaching evaluations and data on teaching and learning, promote mutual assistance between universities in Eastern China and universities in Western China, and promote self-study, learning through research, and practical learning to improve initiative and creativity among students (Wen 2007).

As for the Top Level Courses Project, the first stage from 2003 to 2007 had produced 1,500 national Top Level courses, with the focus on commonly taught basic undergraduate courses. The second stage, beginning in 2007, had a target of constructing 3,000 national level Top Level courses. That year, the Ministry of Education also expanded the project to include online courses, and during the next three years of operation, evaluated 149 national level online Top Level courses. After this expansion, including online courses, and also courses from public security and military schools, the project covered a total of 700 institutions of higher education in every part of China. From 2003 to 2010, 3790 national level courses have been produced, including 2528 undergraduate courses, 1037 vocational courses and 209 online courses. In addition to the national level courses, more than 6000 provincial level courses, and a large number of university-level courses have been produced (NTCP 2010).

In addition, the 2007 stage called for the creation of an organized system for sharing the course materials generated, and supporting the development of software and portals that could facilitate this sharing (Wang Xueyin 2008). This would later become the Jingpinke.com portal, which will be discussed in a separate section.

Institutional perspective

This section will look at how universities carry out the Top Level Courses policy, and how it is perceived by academics who have had their own courses selected as Top Level. It is based on formal interviews with professors, academic affairs officers, and people involved with Top Level Course selections at a provincial and national level, as well as informal visits to several other universities, and some secondary literature.

University-level Top Level Course selection

University-level Top Level Course selection is organized and implemented by individual universities, based on their course development plans and the courses that are traditionally highly ranked internally. From courses that have already developed good materials, have distinguishing features, and can play an inspirational role for other teachers, the university administration will choose a certain number of courses, and invest in their further development.

University B has a long tradition for educational technology, and was one of the first universities to have a course designated as Top Level in 2003. The work on developing Top Level Courses, and the use of this process as a lever to improve the educational quality at the university, continues to have high priority.

The academic affairs office at University B is very concerned with whether courses are well enough constructed, so that they will have a high potential for winning in the provincial and national competitions. Their self-described strength is their “pre-application process”. All 20 departments in the university can propose courses, and these get a small amount of seed money for development. The courses that are selected for this internal process are courses that are already impressive, with many having gone through a period of more than ten years of development. However, they have to be updated, and they especially have to develop online material that reflect well on the course.

The courses are given 1-2 months for development, and after that, they create an expert committee composed of internal and external experts that begin evaluating the courses. The external experts come from other high-ranking universities in the region. This evaluation is based mainly on the available online resources, but a supervisory committee made up of very experienced and retired teachers also goes to listen in on classes, and solicit students’ evaluations of the teaching materials. The task of the academic affairs office is not to get directly involved in evaluation, but rather to coordinate the process.

The internal university committee discusses the strengths and weaknesses of each course, especially where there is a difference in opinion with the external experts, and the best courses are proposed as provincial and national courses. The teachers who have already had a course accepted as a provincial or national Top-Level Course also contribute to share their experiences of the process.

University B has an ambitious goal for developing Top Level Courses, they want 700-800 of their 3000

courses to reach Top Level status, which would represent 30% of courses. Their short-term goal is to get 500 Top Level courses between 2012 and 2015, which should include all obligatory courses. In addition, they are spending considerable energy trying to put up recordings for every single lecture for all their 124 existing Top Level Courses, to complement the requisite representative lectures. This focus on improving existing Top Level Courses is also reflected in their annual monitoring process, where all heads of departments sit around a table, display one course at a time on a projector, and check how much of the course contents has been updated.

When interviewing the person in charge of coordinating the development of Top Level Courses at University A, he put much less focus on the process of quality improvement. "Here the teachers and courses are already very good, so we don't have to do too much work to improve them." Mr. A0 believes that professors from University A have strong moral values, and would work hard on improving their courses even without such competitions, but he acknowledged that internal competition between colleagues in the same department can push professors to work harder on improving courses. Similar to the case at University B, most courses entered into the Top Level Courses selection process at University A are courses that have a long history of development as excellent courses, and were not developed specifically for the Top Level Courses Project.

Wang Xueyin (2008) has published a quite detailed case study from the development of Top Level Courses at Lanzhou City College, and their process has many similarities with the one at University B. After the province put out the call for Top Level Courses applications, the university began by calling a meeting with all the heads of departments, to ask them to identify top courses that had potential to become a Top Level Course. They then established a teaching committee to identify basic and specialized courses that were relevant, and brought the teachers of those courses together with personnel from the computer department to discuss how online teaching materials could be constructed. Like at University B, the school decided to provide some funding to construct the initial courses.

The main guiding philosophy was that the construction of Top Level Courses would support the improvement of quality of all the courses at the school, and ideally the courses that could have the most impact on the entire department would be selected. The university administration also underlined the point that the idea was not to simply recycle existing courses online, but rather to think through the design, and update the teaching methodology and content. When the course development was complete, the university organized an online blind peer-review of the course, and based on this, determined whether to award the university-level Top Level Course designation.

As we have seen from these three case studies, universities play a key role in the Top Level Courses Project, selecting potential candidates and supporting their development, until they can be selected as a university-level Top Level Course. Universities also have to submit an annual report about the construction and sharing of Top Level Courses, including

> updating and keeping the resources available, students' use and feedback, support from the school, the open sharing situation of the resource, amount of resources spent on developing the course, and how much the university is spending on supporting development economically and organizationally (Liu Zenghui 2009).

Promotion to provincial and national level

The announcement of university-level Top Level Courses is made public, and anyone can both visit the course website, as well as provide feedback. If there are no strong objections to the course during this period, the decision will be made to suggest the course for a higher level designation (provincial level, and then national level).

The first step is the provincial level. The provincial bureau of education is responsible for planning the distribution of provincial level Top Level Courses based on the provincial plan for educational development and course development. Based on this, the provincial bureau of education will ensure the completion of the provincial level project, as well as the suggestion of courses for the national level selection. The courses that enter the provincial level selection process must already have been designated as university-level Top Level courses. The province then organizes an online blind peer-review by subject specialists, based on provincial evaluation criteria, which may differ by province. The courses selected are made public, and awarded the provincial level designation, as well as a sum of money to support the further development of the courses.

The final step is the national level Top Level Courses, organized by the national Ministry of Education. The Ministry of Education is the highest level organization responsible for the organization and management of the Top Level Courses Project, organizing the selection of different types of courses

(undergraduate courses, vocational courses and online courses), providing guidance around the entire process of developing and evaluating courses, and supervising the annual evaluation and selection of courses at all levels. The selection of national level courses is similar to the university-level and provincial level process, however the requirements for each indicator (course quality, course evaluation management, financial support, quality control, etc) are much stricter.

From the description above, we can see that the Top Level Courses are awarded different levels of designations (which to a certain extent reflect their level of maturity). The financial support arrives after the course has already been developed, which means that the university first has to use its own money to invest in course development, before the course can receive additional support when selected to higher levels. This is congruent with the original intent of the project, which was to stimulate universities to invest more in course development.

The three levels in the selection of Top Level Courses follow similar processes, and in practice, to improve the linkages between the three levels, most university-level and provincial level selections employ the same standards as the national selection (Wang Long, personal communications). This also serves to raise the quality of courses at all levels. In addition, since the entire process of development, sharing, and peer-review of courses happens through the Internet, the educational technology demands are quite high. The focus on digitization of resources, teaching and learning in online settings, communication between students and teachers, generative assessments, etc., all help promoting the integration of information technology and teaching and learning in higher education.

Case studies of individual experiences with Top Level Course selection

During my research, I interviewed five professors that had had their courses designated Top Level Courses. Below, I will introduce their individual cases, beginning with the history of how their courses had developed before applying, and then discuss the process of applying, including the motivation for doing so.

An interesting finding from the interviews was that most courses had been developed for a long time before they applied to, and were selected as Top Level Courses. The macro-history of course evaluations in China that was discussed in the previous chapter is here illustrated through the personal histories of these individual courses, which often had been selected as excellent university courses. Professor B1 began teaching her course in 1991, when it was a voluntary course. Later it became designated as an obligatory course. The teaching team constantly strived to improve the course, applying to have the course recognized as an approved course, and later as an excellent course. Finally, it was even designated as a class directly sponsored by the Ministry of Education (jiaoyubu zhuban ke, 教育部主办课).

Professor B2's course was started by the same person who set up the department where he teaches, a professor who was very well-known within China. He proudly notes that the textbook written by this professor has been published continually for 50 years, and had a huge national impact. Since he was such a leader in the field, the course is still today marked by his specific approach to the discipline, especially his emphasis on connecting theory to practice. Professor B2 is one of the students trained by him, one of many teachers in this department who are his students, and is proud to continue his heritage through continually developing teaching teams, teaching materials and courses. This course also received the excellent course designation from the university, before they applied to be a Top Level Course.

Both Professor A2, who began teaching in 1997, and Professor A1 have also taught their courses for many years. Professor A1's course is an important obligatory course in the major, and one of the key courses at the university. During the years of teaching, a lot of emphasis has been put on developing teaching materials and course contents. Until 2007, the course was entirely lecture-based, but since 2007, they changed to include an internship where students can put their knowledge into practice.

Many of the courses had also developed web resources before the Top Level Courses Project. Professor A1's course did not have an external website, but he had put many course resources on a campus learning management system (open only to registered students). Professor A2's example is interesting – his course is also open to students from the Western province of Xinjiang, who come to the university as visiting scholars. In 2004-2005, their demand for more online resources after they had returned home provided the initial impetus to create a website, where he slowly began putting up recordings and other material, together with a discussion forum.

Professor B2 began developing a website for her course in 2001, which contained courseware, questions, descriptions of experiments and other teaching materials. Under a provincial program called the 151 Project (151 gongcheng, 151工程), she and her colleagues also

developed a resource database, where they deposited a number of resources from the course. They also received requests from other universities for access to the materials, because the textbook mentioned above has been so popular and widely known.

The process of applying

Both Professor B1 and Professor A2 were relatively early in applying for the Top Level Course designation. In both cases, they realized that their existing material was a very good fit for this new program. Professor A2's school began applying for courses in 2004, and when they asked who had courses that could fit, he volunteered, because he knew that the existing resources they had developed would be very appropriate for the Top Level Course requirements. He also believed that it would be an honor to receive the designation.

Professor B1's story is similar, she applied for the university-level designation in 2005, and in 2008 her team applied for the national level designation. She says that they never applied for the designation excellent course because they wanted the recognition, but because they thought that through the process of applying they could provide a better course for the students. When the Top Level Courses guidelines came out, they realized that they were even more detailed and stringent than the university's own excellent courses, so they decided to use the application to improve their course further. They also benefitted from help from the school of online education in creating the website. Although she said that getting the designation was not very important for her herself, she does mention that universities now take Top Level Courses into consideration when assessing professors for promotion.

Professor B2 also applied for the designation in 2005, but Professor A1 did not apply until 2008, five years after the Top Level Courses project had been launched. She said she knew about it the whole time, but thought that as long as others knew she had a good course, that would be sufficient, and did not consider applying for this designation. In 2008, her department began to put more focus on developing Top Level Courses, as part of a process of becoming an international first class university, and expand its influence. At that point, she decided to submit her own course for consideration. An added factor was that a new textbook, which she had developed, had won a national Top Level Courses price for teaching materials the year before, as well as the innovative adding of an internship to the course design.

Both Professor A1 and Professor B1 also mentioned planning for their legacy as factors in the decision to apply for the Top Level Courses project. Professor A1 retired in 2008, and had anyway been planning to make recordings and leave behind a memory of his teaching at the university. Professor B1 explains that she will retire in a few years, and needs to find some young professors that she can train to continue the courses. Building up the course teaching team through the Top Level Courses Project can be one way to further this goal.

When applying, many of the professors visited existing Top Level courses for inspiration, as well as getting support from their colleagues. Professor A1 visited other courses by people in his department, to see how they had done it, and the academic affairs office at Professor B1's university organized for new applicants to learn from people with very good Top Level Courses, both from their own school and from the outside. Both Professors B1 and B2 also visited other courses online, and in fact Professor B2 is involved in the evaluation process for her discipline, and had the chance to visit many campuses and learning from other professors.

Effects of applying for the Top Level Courses Project for individual professors

When asked about what had changed after applying for the Top Level Courses designation, most of the answers from professors centered around the process of applying; while some believed that it had led to a significant improvement in quality, others believed that it had not changed very much. Professor B2 was in the first category, saying that these last years they have been continually improving the teaching materials, largely thanks to the impetus given by the Top Level Courses Project. The text book has been turned into a series of text books, and they not only got very good results in last year's teaching evaluation, they also got first prize in the provincial Educational Achievement competition. Much of this he ascribes to the guidance provided by the Ministry of Education, and the local academic affairs office.

Professor A2 had always taught his course alone, but because one of the criteria for applying to the Top Level Courses project was the formation of a teaching team, he now shares the responsibility with four other teachers, both training young teachers to one day take over, and involving more senior professors, who would otherwise not engage in undergraduate teaching. Other than that, recording lectures has not changed his way of teaching. He recounted that a colleague had asked him whether they should find someone to "polish" the class, because currently professors lecturing use very informal language. He had answered that there would be no point,

because the recordings should reflect reality, and they should not make the course too artificial.

Professor B1's class had always had a teaching team, but she also felt that the project had had a large impact. The most important outcome for her was becoming more aware of the process of course construction, and the goal of course development. Earlier, she believes she did things more randomly and intuitively, without considering why she made certain choices. The process of applying has changed this, and now she is constantly improving the class in a systematic fashion, according to guidelines. She believes this has also had an effect on the development of other courses with which the course team members are involved.

Professor B2's team had a similar experience. Earlier, they just used whatever teaching material they had, whereas now they continually explore and improve their course. The project has provided motivation for them to improve, and has also brought the teachers involved with the course closer together. They have introduced several innovations into the teaching of the course, for example allocating an entire day for experiments, and letting students set up and prepare everything themselves, rather than preparing everything in advance. This shift to more inquiry-based learning, which focuses on student initiative, is more effective at making students understand the excitement of research and conducting experiments.

The existence of a large body of open resources has also changed the way Professor B2's team teaches in other ways, by making the team think of new ways of doing things. Simply following the textbook is no longer sufficient, since so many high quality resources are available that cover the basic material. This year, they organized a class where a number of colleagues each taught one session of their most excellent material, and it was all recorded. Professor B2 found this way of lecturing more interesting, because you can really bring in the most cutting edge research problems and theories into the classroom, rather than being confined strictly to the textbook.

The only professor who did not feel that applying to the Top Level Courses Project had made a large difference, was Professor A1. Although his course has also seen many innovations and changes in the last few years, he believes that these would have happened even without the project. He says that the team was mainly focused on improving the course, but the department put a large emphasis on the Top Level Courses Project, and wanted people to apply for this honor. He laments that applying took a lot of time, which might have been spent more effectively on improving the course.

In addition to the impact on teaching practices and philosophy that came out of the application process, there were also some tangible outcomes of having courses selected as Top Level Courses, but professors focused much less on this aspect. Several mentioned honor to themselves, and to the institution, as one incentive for applying. There was pride in feeling that their courses now had a national impact, and were used by professors and students elsewhere. The usage of the resources will be discussed in a separate section below.

Being awarded the Top Level Course designation also comes with some funding, from the Ministry of Education, the province and the university. For example, Professor A2 received 100,000 RMB, which was mostly spent on buying cameras and building the website, but there was also a bit left over to fund excursions for his students. Professor B1 spent the money he received on hardware and software for providing the online resources

Effects of the Top Level Courses Project for institutions

When discussing the effects of the Top Level Courses Project with academic affairs officers and members of the evaluation committee, many of their answers reflected the experiences of individual teachers. There was agreement that it had raised the quality of courses, and the awareness of pedagogy and standards. Mr. B0 said that all academic staff who teach now know the national standards for each course, and that this standardized pedagogy has improved the quality of teaching. This goes together with the generally increased focus on quality in teaching, which especially Professor C0, member of the national evaluation committee, emphasized.

However, standardization does not mean a lack of innovation. Indeed according to Mr. B0, teachers that earlier taught in a very traditional fashion, with very little discussion in class, had through the process of applying to the provincial Top Level Courses Project changed their pedagogical ideas, and the design of the class.

Much of this has happened through an increased emphasis on reflection and discussion. As Mr. B0 said, earlier, teachers would all go to their own classrooms, and would never listen to other people's classes. Now, not only do the course teams enable sharing and reflection around the course material within a small group, but having all the materials published online also enables a larger group to get involved, including the academic affairs office and the peer-review committee.

Due to the process of applying for Top Level Courses, professors have also become more tech savvy, and are using more educational technology in all their courses. Lectures are recorded, so students who did not catch everything, can watch them again after class. Courses have blogs, where teachers can leave homework, and students can communicate with teachers outside of class.

The issue of legacy was also raised, the idea that when old and famous professors pass away, the only thing left is their notes. By recording their lectures and their course material, the Top Level Courses Project means that people can "attend their lectures" even in the future.

How and by whom are the course resources used?

Although schools are encouraged to make university-level courses open, or at least share them with other universities, there is no requirement for them to be openly published. However all provincial or national Top Level Courses Project have to be published openly for five years, and be regularly updated during this time (Liu Zenghui 2009; MoE 2004). As an example, Professor A2's course had already been published online, but with a password protection. After being selected as a Top Level Courses, they removed the password, and also greatly improved the content, by putting up recordings for every single lecture (required for the national level designation), and also posting student evaluation reports. In the process of creating the site, they often visited sites from other disciplines to see how they did it, and received inspiration from those examples. Professor A2 also recounted how they removed the password to all their material, when they were selected as a Top Level Course.

Most professors believe that the resources are primarily for colleagues at other universities, although students can also use them. Professor A1 says that a lot of universities are using the material from their course, and that it has helped make the course quite influential in the whole country. She has personally been contacted by other professors who tell her about their use of the resources, and some of these have visited the university to learn more about the course. These are often from lower ranked universities, whereas she believes that universities at the same rank as her own might be more interested at looking abroad for course inspiration, something she has also done in her own work.

Professor B2's course has also been very influential. It is one of only three or four similar courses available as Top Level Courses, yet this topic is taught in more than a hundred universities. He believes his course has had a large impact in raising the standard, and influencing the design of similar courses at many universities in China.

The academic affairs office at Professor B1's university has said that the use rates of her course are very high. Her course is offered at all universities, so many professors consult her resources, and contact her for more information when they want to develop their own courses. Professor B2's course is also used by many teachers, and lately he has noticed that new courses that apply for the Top Level Courses designation use some of their thinking, even going so far as to copy certain expressions whole-sale from their course. Some of the teachers contacted him, and told him that they were basing part of their course on his materials, but others did not. In addition to this, the course is also popular among students who are going for the graduate school exam in his field, and want to understand the situation in the field better.

Qin (2008) discusses how courses are "marketed", and divides the channels into three. First, the Ministry of Education maintains websites (such as Jingpinke.com, see below), and distributes information to universities and other organizations. Secondly, the universities and individual professors themselves often publish their courses in newspapers, magazines, at meetings and in reports to other universities and colleges. Some universities have also published books listing all the Top Level Courses they have produced, with details from the application process. Finally, some voluntary associations, such as China Open Resources for Education, have organized information about Top Level Courses and created link and resource pages.

There is not much in the literature about how students and teachers are using the Top Level Courses. Beijing City used external evaluators to conduct an in-depth study of the city-wide Top Level Courses Project in 2005, but most of the feedback was focused on how the materials were used in the class for which it was created – in other words, the course website functioned more as a generic learning management system. However, data also shows that while most students accessed material relevant to their current school work, a number of high school students used the material to check out interesting college courses, and some students accessed material purely related to their interests. Teachers also used the material to prepare for classes (Ding et al. 2005).

The Jingpinke.com portal

When the Top Level Courses Project was launched, there was no easy portal for discovering all the available

courses. Each university built its own index site, and the Ministry of Education published links to all these sites, as well as to individual courses. Other organization, such as China Open Resources for Education, also created link sites that provided an overview of courses. These overviews contained little information, other than the name of the course, the university where it was taught, and the level of designation (university, provincial or national level).

As the number of available courses grew, this became very unwieldy, and when the Top Level Courses Project was renewed in 2007, the new policy specified that a unified portal for all Top Level Courses would be built. The task of building and operating this portal went to the Higher Education Press, one of the largest publishers in China, which is owned by the Ministry of Education. They received some funding from the Ministry of Education, but were also supposed to find ways of earning some money themselves (Ju Feng, personal communications).

The site, located at http://jingpinke.com (Top Level Course in Chinese), is today a multi-facetted and rich site, with very advanced functionality. Visitors can browse through courses by discipline, university or level, and there are lists showing the most visited courses in different categories. For each course, the portal has imported a number of their resources into a resource database, so that you can look at individual PDFs, videos and other resources without leaving the portal.

There are also many social "Web 2.0" features: Logged in users can save courses to their personal page, rate courses, or leave comments. Users can also leave comments or questions around specific resources (individual documents and videos). When you visit a course, it also suggests other courses in the same category that you might be interested in (similar to Amazon's "Other people who bought this book, also bought…"). Each course profile also features a link to the actual course website.

In addition to featuring all the Top Level Courses, the site is a clearing house for information about the project, with the latest policy and news updates, information on applying, courses and seminars that are held, etc. There is an overview of teaching material that has received prizes for excellence, and there is an interesting intra-university sharing portal. This is an entrepreneurial attempt to both promote sharing of more resources than the Top Level Courses Project covers, and to earn some funding for the operation of the website.

The portal is dependent on universities paying a subscription fee, and is thus different from the Top Level Courses material, which is all open to the world. Within this portal, any professor can then share material from any course. Apart from the fact that it is closed, the portal also differs because material does not have to be from a Top Level Course, and can represent only a small part of a course. For example, a teacher could share a particularly well-made Powerpoint-slideset, a recording, a 3D animation, or a document. There are similar social features attached to these resources, and a major part of the subscription fee collected from universities is paid out to content contributors, according to the popularity of their resources.

This approach is in part an attempt to overcome the problem that many professors need more incentive to share their most valuable resources. In an interview with Chinese Distance Education, the head of the department for distance and continuing education at the Ministry of Education said that "In the future we will see many kinds of sharing: both "charitable" and market-based, but right now we don't have the mechanisms for market-based sharing" (Liu Zenghui 2009, under "Jingpin kecheng jianshe reng cunzai bu zu" 精品课程建设仍存在不足). The closed-community resource sharing model that Jingpinke.com has pioneered could be one such market-based approach to sharing.

Commercial ecosystem

Over the years since the Top Level Courses Project was launched in 2003, an ecosystem of services and providers has grown up around it. The Ministry of Education organizes a number of conferences and training sessions, as do provincial boards of education. As described in the case studies, universities themselves will organize internal training, both bringing experienced course developers together with teams that are beginning to develop Top Level Courses, and also inviting external experts, and promoting exchange between different universities.

China Open Resources for Education, a non-profit organization that will be described more fully in the next chapter, has held a number of national conferences around Open Educational Resources and the development of Top Level Courses. There are also a number of commercial actors in this space, both providing web development and hosting services, creating Content Management Systems that are tailored specifically to Top Level Courses, and providing training for teachers in developing Top Level Courses.

For example, given that most Top Level Courses involve capturing lectures, AVA Electronics sells an integrated solution that can coordinate recording from

several videocameras, capturing the presentation slides, and automatically publish this in an acceptable format. Similar lecture-capturing platforms are well-known in North America, but the interesting part is that this is being marketed as a "Automated Top Level Courses Recording System" (AVA 2010).

And when it comes to specialized software, there are many options. For example, Hubei Huaqin Education Software Company, which markets a large number of specialized platforms for purposes such as "government news portal", "membership management portal" and "online learning portal", has a specialized portal software for applying for and promoting Top Level Courses. They also promote a portal for coordinating the work of evaluating Top Level Courses according to the changing requirements each year (Huaqin 2010). Tsinghua University has also developed a portal for Top Level Courses, which is widely used (Han Xibin, personal communication). There is even Skyclass' "3D Top Level Courses portal". On their website they warn that traditional course websites often make evaluators tired, having to flip back and forth between materials, whereas the 3D portal will encourage the use of the right side of the brain, and will leave a deep impression on course evaluators (Skyclass 2010a).

There are also many companies that offer to custom-build Top Level Course portals. One of these, a company called Five-Pointed Star Technology, proudly presents screenshots and links of already built courses that were successful in gaining the Top Level Courses designation on their homepage (Five-Pointed Star 2010). As for training, the Higher Education Institutions Teacher Online Training Center, a part of the Higher Education Press, offers more than 30 different fee-based courses on how to develop Top Level Courses. The courses last 2-3 days, and are held at various locations around the country, with some addressing general aspects of the development process, but most being discipline-specific (Jiaoshi wangluo peixun 2010). Skyclass (2010b) also offers a number of courses, primarily structured around their software offering, but also aiming to introduce the new Top Level Courses evaluation criteria.

Critiques of the program in the Chinese literature

Although most of the articles are written in a laudatory tradition that does not doubt the good intentions or the success of the program, there are some interesting dissenting voices. Many pick up on the ambitious name "Top Level Courses". Lu (2008) states that from his experience, many top professors are not willing to share the materials that they have been teaching for decades, and that he also had this fact confirmed by the Ministry of Education. He therefore does not believe that the courses deserve to be called "Top Level". This concern is echoed by Professor A1, who says that she did not want to release all of her material on the web, because she had struggled for many years to create it, and does not want others to simply take it. However, she still put up most of her materials, whereas she knows other teachers who put up as little as they can get away with.

Wang Xiuhua (2008) is sceptical about the commitment of producers of Top Level Courses, and believes that many simply "go through the motions" and do not take the opportunity to rethink their own pedagogical practices. Despite the rigorous evaluation criteria, he believes that many universities choose famous professors to "put their name" on courses. Many courses are not developed as part of an overall plan, but rather quickly put together in two months, to obtain "fame". Professor B3 is also worried about professors that enrol only to get recognition, and are not interested in continual improvement. These do not follow up constructive criticism of their courses, and after 3-4 years, their courses might not have changed at all.

Even for professors that are committed to improving their own courses, there is a sense that the Top Level Courses process does not always support their work. Professor B1 is mainly positive, and believes that most of the things required are things that should be present in any good course. However, she is sceptical about the very detailed requirements on the constitution of the teaching teams. For some courses that are very small, this is not realistic. When she sees course applications listing a large number of people, she often wonders if they are really all involved in the course, or just lent their names to the application. She believes the requirement should be to have a course team that is appropriate for the kind of course, instead of a fixed requirement.

There is also some concern about the increased formalization and bureaucratization of teaching. Professor B2 was very enthusiastic about teaching a few years ago, but now her enthusiasm is slowly disappearing. In addition to larger class sizes, she feels that she spends a lot of time on creating formalized lesson plans, and dealing with people who come to listen in on her class.

There is also a problem with course websites not being maintained properly. Lu (2008) found that according to this tests, of the 1,100 national level Top Level Courses, over half were unavailable for one reason or another. Another survey by Qin (2008) shows that

only 10% of all the material published in the "early years" of 2003-2005 is still available, and that most webpages have errors.

Finally, there is the danger of focusing too much on the aesthetic aspects of the website, where some universities spend as much as 20-30% of the award money on hiring external web design companies, rather than focusing on the quality of the content (Wang Xiuhua 2008).

The future

Nobody knows what the future holds for the Top Level Courses Project, which is scheduled to expire in 2010. It is probable that it will be renewed, but this could be done either with large-scale changes in organization, or relatively minor tweaks to assessment systems (Young 2010). Professor B3 believes that there will be more focus on producing material that can be used directly by students, and more focus on resource portals that organize this material. Another important step is to check all the courses that have already been produced – this was supposed to happen after a five-year period, but even though the first courses were produced seven years ago, it has not yet happened (Ju Feng, personal communications). As mentioned in the section on critiques, there are statistics showing that many courses are no longer available, or have not been updated.

According to Ju Feng, vice-director of the Top Level Courses Project Resource Center (精品课程资源中心) which produces Jingpinke.com, the Ministry of Education is planning for a shift in the role and function of the Open University of China. When it was initially built, it was intended as a stop-gap solution for students that could not be admitted to regular universities because of capacity problems. Given the rapid expansion of the regular system, almost all students who now go through the university entrance exam (gaokao, 高考) are assured a spot at a university, even though it might not be the university they wanted.

Therefore, the focus of the Open University of China will shift from undergraduate degree programs to life-long learning and continuing education. The 2010-2020 ten year master plan for educational development in China released by the Ministry of Education calls for 350 million people involved in life-long and continuing learning by 2020 (Håklev 2010). Although we have seen little evidence of Top Level Courses being used for that purpose today, it could be one possible future direction.

Conclusion

This chapter has given a detailed overview of the Top Level Courses Project, including how it came to be implemented, how it is organized, the motivations behind it, the selection criteria for courses and how they have developed, and rich case studies of how the project is actually implemented, seen from both the point of view of university administrators, and individual professors. In the next chapter, we will compare it with MIT OpenCourseWare, which was introduced in chapter two, and also look at how the Top Level Courses Project has been perceived abroad.

Chapter 6: Top Level Courses and MIT OpenCourseWare

Introduction

There have been a number of studies published in Chinese that compare MIT OpenCourseWare with the Top Level Courses Project. Wang Hongju (2009) sees the purpose of MIT OpenCourseWare as spreading quality resources throughout the world, whereas the Top Level Courses Project is aimed to increase communication internally between universities in China, and improve the quality of teaching. Together with Zhou Yan (2009) and Yang, Wang and Luo (2007) he also praises their unified technological platform, and what he describes as a very rigorous project evaluation methodology.

While these papers all bring up interesting points, they are not very comprehensive comparative studies, and fail to employ any kind of framework or theory to discuss the two projects. They also consistently hold MIT OpenCourseWare up as a positive example, and portray the Top Level Courses Project as a weak copy in need of improvement. Instead of seeing the Top Level Courses Project as a weak copy of the MIT OpenCourseWare model, I would like to understand it on its own terms. I will first use the typology introduced in chapter two to analyze how the purposes behind these two projects differ. I will then use two different ways of conceptualizing OpenCourseWare as a framework to analyze the influence of MIT on the Chinese project, and finally discuss why the international community has reached misleading conclusions about the Chinese project.

Comparison based on typology of purposes

The four categories I listed in chapter two were transformative production, direct use, reuse, and

transparency/consultation. In this section we will use these four categories to look at the differences between the OpenCourseWare model that was promoted by MIT, and now has been adopted by many other universities around the world, and the Top Level Courses Project in China.

Transformative production

The first category, transformative production, is the most significant difference between the two models. There is no doubt that publishing courses online will always have some impact on the people involved with the course, but at MIT, this was never an explicit goal. There is no selection procedure for courses, rather the goal is to have all courses being produced. Rather than fostering reflection and engagement through the creation of the OpenCourseWare courses, the procedure was set up in a way to minimize the work-load for teachers – they just have to hand over the material they were already using for classes to a group of specially trained workers, who vet the material for copyright, and post it online.

In the case of Japan, modernizing the lecture styles of professors was mentioned as one of the motivations (see below), and it is possible that universities in other countries also saw this as a way to make professors more ambitious about their teaching methods, and perhaps "learn from the example of MIT lecturers". However, it is never mentioned very explicitly in the justifications, rather the target is always the creation of a collection of materials (which can be classified according to the three next categories).

In China, however, the transformative effect of the production process is one of the main, or perhaps the main justification for the project. In chapters four and five, I have argued that the Top Level Courses Project grows out of a long tradition of course evaluations and competitions to select excellent units, which would receive extra funding and act as examples for others. When discussing the goals of the project, most of the concrete goals are related to the impact of the production of resources, for example the creation of teaching-teams, which is supposed to entice full-professors to teach undergraduate courses, train young professors, and foster intra-collegial reflection around the courses (something that has a long tradition in China, as I noted a bit earlier). Different from MIT and projects in other countries, professors in China are not supposed to submit snapshots of what they are teaching right now, but go through a process of research and refinement, improving both the teaching methods and pedagogy, and updating the content.

The project also aims to increase the technological literacy of professors, which will be reflected in their teaching towards their own students, and to inspire a greater focus on quality, and educational reform and innovation, not only among the professors directly involved with the production of Top Level Courses, but by the entire departments or universities involved. And when I interviewed professors and administrators about the effects and impact the Top Level Courses Project has had, both for individual professors, who have had a single course designed as a Top Level Course, and for administrators who assessed the impact on their entire institution, almost all the comments I received were about the impact of the process itself.

This focus on the process can also be seen from the web resources generated. We saw in chapter five that most of the courses had already gone through several rounds of internal competitions to become excellent courses. One of the main differences between the Top Level Courses Project and evaluation projects that have come before it, is the requirement to share resources online. However, the main purpose of the website is to act as a platform for the application process, and the website is assessed on how well it reflects on the course as it is taught in a physical classroom, by looking at the teaching plan, representative recordings of lectures, student evaluations, justifications and reflections around the course by professors, etc.

This innovation enables a more efficient and standardized review-process, involving blind peer-review by expert committees consisting of faculty members from all over China. Once the designation has been given, this same website which was used to apply, is then opened up to the public, with very few modifications. The main consideration in designing the website is therefore which materials are necessary to properly evaluate the quality of a course taught in a classroom, not which resources would be most useful to other professors, or to distance learners.

Resources shared

If we look at the actual resources produced by the Top Level Courses Project and the OpenCourseWare projects in other countries, there are both similarities and differences. There is a very large diversity of Open Educational Resources projects in existence, and I have chosen to compare the Top Level Courses Project with the OpenCourseWare model here, both because internationally it has been believed to be a kind of OpenCourseWare, and because OpenCourseWare pioneered the publication of an entire course as an open

resource, or collection of open resources, and this is similar to what the Top Level Courses Project produces.

In both cases, the result is one website per course, listing a number of resources. Almost every course will have a course outline, often with slides for each lecture, a reading list, and many will have supplementary material, audio and video recordings of some or all lectures, past exam questions, student works, etc. Top Level Courses will usually be much more complete and refined than for example MIT OpenCourseWare courses, and the effort that goes into production of the former is far larger, however the principle is the same.

If we analyze this material using the three remaining categories from our framework, we find that neither project is particularly suited to direct learning by students. Course websites for both models are designed to reflect the teaching that happens in a classroom, and have not been designed for effective online or distance learning. This does not mean that students do not use the course websites for this purpose; it is certainly possible to learn a lot for someone who is an independent learner, but it is clearly not the primary consideration when the courses are produced.

The reuse category is where we find the largest discrepancy between the OpenCourseWare model, and the Top Level Courses Project. Almost all international OpenCourseWare projects use an open Creative Commons license that allows others to download, modify, and redistribute derivations of the material, as long as the re-distributor does not make a profit. This means that although MIT's courses might not be well suited for distance learning "out of the box", someone else can instead repurpose parts of courses, and put them together into something quite different – whether it's an online course, a textbook or a documentary. The most common example of this reuse is translation, which CORE has been involved with. Granted, the resources published by MIT are not ideal for reuse, because they are often published in file-formats that are difficult to edit (such as PDFs), but the license at least allows people to try.

In addition to this, the concept of reuse and derivation is frequently promoted by the OpenCourseWare Consortium, which has hosted many presentations on this topic at their annual conferences[2]. On the other hand, none of the copious literature on the Top Level Courses Project mentions the possibility of reuse, and the courses are not licensed with an open license that would permit this legally. This is not just different from the OpenCourseWare model, but a deviation from the entire Open Educational Resources movement, which would lead many Open Educational Resources advocates to state that the Top Level Courses Project could not be counted as an Open Educational Resources project.

When we examine the final category, transparency/consultation, we find that the two projects are very similar. Both have the express purpose of letting great courses inspire other teachers, and sharing best examples of teaching and course design. In China, these are the best courses, because they have been rigorously selected as such, and at MIT, the courses are considered the best, because they all come from an elite university. In addition to inspiring teachers at other institutions, literature from both projects also talks about students using their courses to better understand what is required by a certain major, the courses promoting collaboration between different universities, etc. To fulfill this purpose, it is actually a positive thing that the material online closely reflects what goes on in the actual classroom, and has not been extensively modified to be better suited for distance learners.

In this section, I applied the framework of four purposes which I introduced in chapter two, and found that although the OpenCourseWare model and the Top Level Courses Project are similarly poorly suited to direct distance learners, and well suited to the purposes of transparency and consultation, they differ radically on the two other categories. The Top Level Courses Project has transformative production as one of its main purposes, which is not even mentioned in the MIT literature, whereas MIT OpenCourseWare courses are fairly well suited for reuse, and this is encouraged, which is absolutely not the case with Top Level Courses.

The impact of MIT's model on the Top Level Courses Project

In this thesis, I have tried to show that the Top Level Courses Project is a unique Chinese answer to national challenges, and not an imported model. When the centralized curriculum, which was introduced through borrowing from the Soviet Union in the 1950's, was gradually loosened up in the 1980's, it was replaced with a system of course evaluations to promote quality and

[2] For example Larry Cooperman. 2008. "Erosion of the Cornerstone of the OER Movement: The Problem of Reuse". Open Education Conference 2008, April 23-27. Dalian, China, and Allyn J. Radford. 2009. "Enhancing the value of OERs through interoperability and adaptability of content, data and infrastructure". OpenCourseWare Consortium Global 2009, April 21-24. Monterrey, Mexico.

maintain a central direction for courses. As these systems of course evaluation became increasingly sophisticated and widespread, the Ministry of Education embarked on a number of major projects to select excellent universities and faculties through peer-review processes for extra funding, and to serve as examples to others. Adding the explosion of enrolment beginning in 1998, and the ministry's strong desire to promote increased use of IT in education, a new national program that would evaluate the best courses, and share these using an online platform is a natural development of the different trends that already existed.

However, China does not exist in a vacuum, and during the same time, the MIT OpenCourseWare model was developed, and became highly publicized, within China as in many other places. Many articles have been published in China, both introducing the OpenCourseWare project in general terms, and comparing the OpenCourseWare project with the Top Level Courses Project (as mentioned above). To analyze how the OpenCourseWare project could have had an impact on the Top Level Courses Project, we need to decide on how to conceptualize the OpenCourseWare project.

OpenCourseWare as a norm

One way of conceiving of the OCW concept is to see it as the normative ideal that all universities should digitize and open access to their course materials. The Hewlett Foundation (2006) states the normative idea thus:

> At the heart of the movement toward Open Educational Resources is the simple and powerful idea that the world's knowledge is a public good and that technology in general and the Worldwide Web in particular provide an extraordinary opportunity for everyone to share, use, and reuse knowledge. OER are the parts of that knowledge that comprise the fundamental components of education content and tools for teaching, learning and research.

But for our purposes, let us suggest the norm that "universities should make their educational material openly available". Finnemore and Sikkink (2005) have developed a theory of norm life-cycles, and used it to analyze the spread of women's suffrage and the land-mine ban, among other activist movements. As opposed to a realist view of the world, where each nation only looks after their own best interests, they hold a constructivist view that advocates for the possibility of creation and spreading of norms in a global context. They define a norm as "a standard of appropriate behaviour for actors with a given identity". Norms are learnt through social learning, or through contestation, and lead to a change in identity and internal values and motivation, ie. they are transformative (Checkel 1999).

According to Finnemore and Sikkink (2005), norms are created by norm entrepreneurs, who are critical to a norm's emergence, because they call attention to the issues, and use language that "names, interprets and dramatizes them". These norm entrepreneurs need some kind of organizational platform to stand on especially at the international level, and indeed, in order for a norm to reach a threshold and move towards a cascade, it will often have to become institutionalized in a specific set of international rules and organizations. A cascade occurs after a tipping point has been reached, typically comprising a third of all states. Finally, the norm becomes internalized, and sometimes it can become so institutionalized that people follow it blindly, without reflecting on the consequences. Finnemore and Sikkink (2005, 913) use the international state system as an example of a norm that has become internalized beyond reflection; "actors no longer think seriously about whether ''the state'' is the best or most efficient form of political organization (it almost certainly is not). They just set up more and more states to the exclusion of other political forms."

MIT and Hewlett could certainly be said to play the role of a norm entrepreneur, and together with UNESCO, they have spent a lot of energy framing open education in a way that will make it attractive to other actors. They also attempt to spread the model through international advocacy networks, using OpenCourseWare Consortium as a platform, and they have defined minimum standards that institutions have to fulfill, to be eligible to join – a minimum of 10 courses, and the use of open licenses, for example. And in fact, one might even see a parallel to the internalization of the idea, at least within the movement, where people are frantically trying to convince every single university to make OpenCourseWare, without stopping to think about whether that is the best use of resources in all cases.

So if OpenCourseWare represents a norm, has this norm had any impact on the Top Level Courses Project? I would argue that it has not, based on three reasons. Firstly, one of the core normative values behind OpenCourseWare and most Open Educational Resources projects is openness, which includes using an open license. However, the Top Level Courses Project does not require courses to use an open license, and in fact I have not come across a single course that uses an open license (and on being questioned, course authors all said

that they would not allow reuse and repurposing of their materials – one of the basic concepts within the global open education movement).

Secondly, much of the impetus behind the project comes from the idealistic notion that educational resources should be available to all, and to spread access to people who do not have it today. However, despite the fact that university enrolment is still lower in China than in major Western countries (even after the process of massification), increasing access to education is never mentioned, whether in official documents, or by my informants. The Top Level Courses Project aims to increase quality for those already in the system, not to reach people who do not currently have access. The task of providing expanded access is entrusted to other initiatives, such as Open University of China (Wei 2008).

Finally, if the norm mentioned above had had any impact in China, we would expect to see a range of different experiments with making educational resources freely available, both by individual professors and by individual universities, like the case in North America or other regions of the world. This has not been the case – other than the Top Level Courses Project, which was initiated and funded by the Ministry of Education, there are very few examples of academics voluntarily sharing resources. One of the only exceptions is the SocialLearn Lab network started by Professor Zhuang Xiuli at Beijing Normal University (SocialLearnLab 2010). Given these reasons, I find it hard to conclude that OpenCourseWare has had much impact in China as a norm.

Openness as a policy innovation

In the previous section, I have presented the open education movement as essentially idealistic and normative. However, in addition to choosing to share one's resources freely because of an ideological conviction; utility and pragmatic considerations count as other very important factors. I will first discuss how this factor plays out in the wider open movement, and then look at examples that pertain to OpenCourseWare.

It is easy to understand why users would be attracted to free resources, but why would producers, whether they are software companies, or universities, benefit from waiving their rights, and making their products freely available? The fact is that many large commercial companies have open-sourced their own software, or have engineers that contribute to outside open-source projects. Hecker (2000) runs through a number of reasons why commercial companies would want to open-source their products, and discusses different business models that can make this process sustainable (see also Behlendorf 1999). Widening the scope to encompass many open practices, Tapscott and Williams (2006) outline a number of innovative business practices that allow corporations to benefit from opening access to their internal processes and intellectual property, leveraging peer-to-peer collaborators and "prosumers".

How does this apply to OpenCourseWare – are there good pragmatic arguments for a university to open access to its course materials, without having recourse to moral arguments? The MIT Evaluation Report lists a number of examples of how MIT OCW has benefitted MIT as an institution (MIT OpenCourseWare 2005). OpenCourseWare can help in recruitment, which is shown by the fact that 35% of freshmen aware of OCW before deciding to attend MIT were influenced by it in choosing which school to attend, and a large majority of alumni believed that it strengthened MIT's reputation (p. 52, 60). It can also be very useful for existing students, who according to the report use the courses extensively to catch up or repeat classes, and plan their course of study (p. 50).

Even faculty find it useful to be able to consult other colleagues' work. One interesting example of this is professor Karen Willcox who teaches astronautics, a course that requires a strong foundation in maths. She was dismayed by the poor level of math skills, and realized that she did not know what was taught in the math course that was required for entry to the astronautics course, or how the material was presented. Through the OCW site, she was able to review the material, and can now help the students make explicit links between her material and the pure math that they have previously studied (ibid., p. 58). In the same vein, when the OpenCourseWare Consortium tries to help faculty members and students "sell" the idea of OpenCourseWare to their administration and other faculty, they list a range of direct benefits to institutions, rather than appealing to moral and ethical values (OpenCourseWare Consortium 2010b, 2010c, 2010d, 2010e).

If we consider OpenCourseWare not as something that is normatively good, but as something that is pragmatically useful to an institution, or a state, then it is much easier to make the case for OpenCourseWare having had an impact on the Top Level Courses Project. While it is very difficult to define exactly the extent to which OpenCourseWare helped trigger the development of the Top Level Courses Project in exactly the form it exists today, many of the perceived benefits of MIT that were listed above are echoed by the professors

interviewed in chapter five. Through my interviews and literature review, I found that people working in the education sector were very well aware of MIT OpenCourseWare and other open projects, but professors in other disciplines who had courses that were selected as Top Level Courses knew very little about it.

Tan Feng (2008) believes that the Top Level Courses Project was China's response to the MIT project, and it is certainly possible that given all the underlying trends and problems discussed above, the 2001 announcement of MIT's grand plan, and it's positive reaction, functioned as some sort of trigger to create the Top Level Courses Project. This is strengthened by Phillips' (2004) theory of policy attraction, which proposes that states will be more likely to borrow policy during times of political change, systemic collapse, internal dissatisfaction, negative external evaluation, new configuration and alliances, knowledge and skills innovation, or the aftermath of extreme upheaval – the explosive growth in enrolment during the period of massification could thus have made China more open to borrowing ideas from the outside.

The perception of the Top Level Courses Project outside of China

In September 2003, a number of the pioneers behind the MIT OpenCourseWare project, and a representative from the Hewlett Foundation which had funded the MIT OpenCourseWare Project, attended a meeting with Chinese universities at the Beijing Jiaotong University. The meeting had been organized by Dr. Fun-Den Wang, a retired mining professor from Colorado, who is also the head of the International Engineering Technology Foundation (IET), an educational charity. Dr. Fun-Den Wang was impressed by the vision behind MIT's OpenCourseWare Project, and wanted to make these resources available to Chinese universities. The result of the meeting was the founding of an organization called China Open Resources for Education (zhongguo kaifang jiaoyu ziyuan lianheti, 中国开放教育资源联合体), which would promote closer interaction and open sharing of educational resources between China and the world (CORE 2010a).

China Open Resources for Education (CORE) began facilitating the use of MIT OpenCourseWare by universities in China. They hosted a mirror of all the courses, so that they could be accessed more rapidly from computers within China, and funded the translation of some of the courses into Chinese (CORE 2010b). To date, their website lists 602 foreign courses that have been translated into Chinese (CORE 2010c). They held several conferences about Open Educational Resources in China (2006 in Xi'an and 2007 in Beijing), and in 2008 they co-hosted, with the OpenCourseWare Consortium, the international "Open Education Conference 2008" at Dalian University of Technology. This conference attracted researchers and administrators from around China, and around the world (CORE 2010b).

After a while, internationally CORE became synonymous with the Top Level Courses Project, which they called China Quality OpenCourseWare. Very little has been written about it in English, but what little there is tends to portray the project as a derivation of the MIT OpenCourseWare, with CORE as the founder and organizer. For example, Stephen Carson (2009), external relations director for MIT OpenCourseWare writes in an article in Open Learning:

> In 2004 collaboration between the Chinese Ministry of Education and MIT's translation partner CORE would lead to the launch of the China Quality OpenCourseWare project, an effort to openly publish the best courses from across the Chinese higher education system. By mid-2005, materials from more than 500 Chinese courses were available through the CORE site. This collection of courseware has now grown to over 1600 total courses, some of which are now being translated into English by the CORE team.

David Wiley (2007, 4) writes in a report to the Organization for Economic Collaboration and Development that "in China 451 courses have been made available by 176 university members of the China Open Resources for Education (CORE) consortium". Finally, Elpida Makriyannis (2010), a researcher with the Open University Open Learning Network, set up to coordinate research on worldwide Open Educational Resources efforts, describes the development of China Quality OpenCourseWare as springing out of the fateful meeting to establish CORE in September, 2003.

In fact, the Top Level Courses Project was launched in March 2003, half a year before the MIT meeting, and was not even mentioned at the meeting half a year later, where the discussion centered around the translation of MIT OpenCourseWare courses into Chinese (Duan Chenggui and Liu Meifeng, personal communications). So how could this misunderstanding have spread?

The spread of an understandable myth

To imagine that China Open Resources for Education organized Chinese universities into producing China Quality OpenCourseWare is natural, when you think of the organization of similar projects in most other

countries. Let us look at some case studies from the surrounding East-Asian territories of Japan, Taiwan and South Korea.

Japan

Already in 2002, researchers from the National Institute of Multimedia Education (NIME) and Tokyo Institute of Technology (TIT) went to study the MIT OpenCourseWare project, and this led to an OpenCourseWare pilot plan with 50 courses at Tokyo Institute of Technology in September (Kobayashi and Kawafuchi 2006). Later, in 2004, people from MIT gave an invited lecture about MIT OpenCourseWare at Tokyo Tech in July 2004, and after that, the first meeting of the Japan OpenCourseWare Alliance was held with four Japanese universities. These had mainly been recruited through the efforts of MIT professor Miyagawa, and his personal contacts. In one case, the connection was the former president of Tokyo University being an acquaintance of Charles Vest, the former president of MIT (Makoshi 2006).

Subsequently, in 2006 the OpenCourseWare International Conference was held at Kyoto University, and at that conference, the Japan OpenCourseWare Association was reorganized into the Japan OpenCourseWare Consortium (Kobayashi and Kawafuchi 2006). By 2010, they had 1285 courses in Japanese and 212 courses in English, with 23 university members, including the United Nations University (JOCW 2010).

The motivation for joining the OCW movement seems to have been to create positive change among Japanese universities, including modernizing presentation styles among lecturers, as well as sharing learning material (Makoshi 2006).

Taiwan

In Taiwan, it all began with the translation of MIT OpenCourseWare courses, which was organized by Lucifer Chu. He is well known in Taiwan for being the translator of the Lord of the Rings, and he used the royalties from this work to fund what would later be called the Opensource OpenCourseWare Prototype System (OOPS). In February 2004, the entire MIT OCW site was copied to a local server hosted in Taiwan, and a network of volunteer Chinese-speakers from Taiwan, China and other countries collaborated on translating the courses to Chinese. In late 2006, the project secured a grant from the Hewlett foundation, and in June 2007, OOPS hosted its first international conference on OCW and e-learning in Taiwan (Lee, Lin and Bonk 2007).

At the same time, universities in Taiwan were also beginning to develop their own open material. The National Chiaotung University in Taiwan joined the OpenCourseWare Consortium in April 2007, and launched their own OpenCourseWare collection in June of the same year. Currently, they provide 71 courses, 54 of which are recorded in real classes during the semester (Lee Haishuo, personal communication). They also provide discussion boards to facilitate interaction between self-learners and online teaching assistants, to nurture a self-learning environment. This self-learning can then lead to official certification from the university, even for outside students, after sitting a certification exam. Sitting the exam is free, and only requires completing an application procedure (NCTU 2010, Lee 2010).

In 2007, a number of other universities followed the National Chiaotung University, and joined the international OpenCourseWare Consortium. The National Chiaotung University began outreach in early 2008, to invite other universities to form a national association, and on the 24th of December, Taiwan OpenCourseWare Consortium was officially formed, with 18 founding university members (TOCW 2010). However, several of these members left because they were hoping that they would get subsidies from the government to produce OpenCourseWare, and when they found out that this would not happen, many left (Lee Haishuo, personal communications).

The different universities have their own specialties. For example, the National Chiaotung University has continued developing their basic science courses and offering them to other universities and self-learners, Taiwan University and National Chengchi University focus on basic education, National Taiwan Normal University offers courses on the classics, and National Taiwan Ocean University, National Taiwan University of Science and Technology and National Sun Yat-Sen University have all offered courses related to their specialties (TOCW 2010).

South Korea

In South Korea, the OpenCourseWare movement started with professor Gyutae Kim, who was a professor of electrical engineering at Korea University. He had learnt about the MIT initiative, and was eager to start something similar in Korea. He initially proposed this to the School of Engineering, but received little support. Later, as the Director of the Center for Teaching and Learning in the same university, he received the dean's permission to pilot an OpenCourseWare project, but

without any funding (Meena Hwang, personal communication).

Gyutae Kim and his staff got strong support from MIT and the OpenCourseWare Consortium. They participated in the OpenCourseWare Consortium meeting in Santander, Spain, in May 2007, and learnt about an open source platform for publishing OpenCourseWare called EduCommons. John Dehlin, then director of the OpenCourseWare Consortium, later gave an online presentation about the OpenCourseWare concept, which lent important credibility to the pilot project at Korea University.

In April 2008, the Korean OpenCourseWare Consortium was formed, consisting of five universities: Handong Global University, Inha University, Kyung Hee University, Busan National University of Education and Seoul National University of Technology. However, there is not strong buy-in from presidents and staff at these universities, and aversion by staff members to add to professors' work burden, which has slowed down the development of the project.

The national evaluation of universities is very important to Korean universities, and traditionally has only looked at research, thus making things that do not result in publications less of a priority. Recently, there has been an increased focus on teaching and learning from the Ministry of Education, which for example mandated centers for teaching and learning at each university in 2006.

A large project to improve the quality of teaching that was recently launched, called the ACE project, will disburse USD $800,000 each year for four years. This project, which is spearheaded by the president of Korea OpenCourseWare Consortium, Dr. Kim Young Sup, included the production of OpenCourseWare in the evaluation criteria for applicants, and all ten universities that won have planned OpenCourseWare projects in the future.

KERIS, a government subsidized organization that coordinates the production of electronic resources for Korean Universities, has also become involved in the opening of resources. Since 2007, it has paid universities to create thousands of e-learning modules. Recently, it has contacted the universities that produced these modules under contract, and asked them to open up at least part of them to the public (Meena Hwang, personal communications).

A common East-Asian model

Thus in all these cases, there is an initial contact between MIT and leading universities in the host country. Sometimes this happens through outreach by MIT faculty or administrators, and sometimes it is individuals who come in touch with the OpenCourseWare movement, and decide to try to spread the idea at their university, and nationally. Universities decide to join the OpenCourseWare Consortium individually, and to form a national non-governmental association or federation to coordinate the work of producing OpenCourseWare.

These organizations and efforts might receive support from the Ministries of Education, but are not funded or organized by the national governments. Given the way these federations began life, as international collaborations, they remain very internationally accessible. Websites are often available in English as well as in national languages, researchers frequently visit international conferences or publish in international journals, and often use the open-source platforms for hosting OpenCourseWare that have been developed by US universities.

At first sight therefore, the Chinese story seems to fit perfectly into this image. A meeting is organized between MIT and top Chinese universities, an organization is founded, and this organization coordinates the production of open course material. Even the name the project is known under internationally, China Quality OpenCourseWare, indicates that it is a direct continuation of MIT's project.

As we have seen in the previous chapters, the Top Level Courses Project is something quite different however. It can trace its roots back to the unique system for course evaluations and quality improvement that developed in China since 1985, and was developed as a response to the unprecedented pace of massification of higher education in China, and the desire to promote pedagogical reform and increased use of IT in education. The way of organizing the project, the funding mechanism, and the goals are all different from the OpenCourseWare projects in other countries.

Yet this information was not readily available. The Ministry of Education has webpages with information in English about the higher education system in China, but none of these mention the Top Level Courses Project. No official publication has ever been put out that introduces the Top Level Courses Project in English. In fact, it does not even have an official English translation, which has led to a multitude of different translations (China Quality OpenCourseWare, NPWDEC,

Top-Quality Courses, etc). Although more than 3,000 academic papers have been published about aspects of this project in Chinese academic journals, until recently no significant paper had been published in English.

This is thus a prime example of the need to look below the surface, as Schriewer and Martinez (2004) stated, and examine whether the terms we are employing in fact describe the same thing. China Quality OpenCourseWare sounds like just another OpenCourseWare, fitting perfectly in with the other examples in East Asia, and a great example of world institutionalism, with both organizational models, and values converging. As we saw above, however, the values inherent in the OpenCourseWare model seem not to have rubbed off on China, and although the project might have been inspired in some aspects by the MIT OpenCourseWare project, it is fundamentally different in organization, purpose, and presumably outcome. To grasp this however, a deep understanding of the context of Chinese higher education, and its history are needed.

In this case, it is not the state that is using "Ausland als Argument" (Schrieweer and Martinez 2004). Given the positive attitudes toward MIT OpenCourseWare by Chinese academics and students, the government could very well have named this project "China Quality OpenCourseWare" and tried to let their substantially different project benefit from MIT's fame, but they never attempted to do such a thing. It is also not the case, as Steiner-Khamsi and Stolpe (2006) found in Mongolia, that the state is using specific terms to attract foreign funders. In fact, the Ministry of Education has chosen not to engage internationally at all around this project, not releasing any information in English, nor even providing an official English translation of the project.

Into this void stepped the organization China Open Resources for Education. They were able to get international recognition, and funding, because the world believed they were promoting an international model in China. According to Steiner-Khamsi and Quist (2000), many local NGOs master "NGO-speak" and focus exclusively on initiatives for which they are likely to get international funding. In addition, the funder, in this case the Hewlett foundation, willingly went along.

Steiner-Khamsi describes international organizations that have developed a portfolio of "best practices", as well as corresponding management structure that serves the dissemination and supervision of these practice, such as Save the Children U.S. and community based education, the Open Society Institute/Soros Foundation and critical thinking, or DANIDA and student-centered learning (Steiner-Khamsi 2004). The Hewlett Foundation has also built up a large portfolio of open education projects, and it was easy for them to fund a Chinese project that looked similar to what they were used to.

The power of personal relationships

We saw in the cases of other East Asian countries how personal relationships often played a key role in introducing the idea of OpenCourseWare to new societies, and this is true even in China as far as the limited role of China Open Resources for Education goes. This is quite consistent with much of the literature on policy diffusion. For example, Mintrom (1997) has studied how policy entrepreneurs can play a role in spreading policy between states in the US, and also how membership in professional organizations and networks can assist this spreading of norms. He defines policy entrepreneurs as "people who seek to initiate dynamic policy change", which they do through attempting to win support for ideas for policy innovations.

The strategies available to them are identifying problems, networking in policy circles, shaping the terms of the policy debates and building coalitions. They also face the challenge of crafting arguments differently for different audiences, while maintaining an image of integrity. He posits that policy entrepreneurs have the following commonalities with business entrepreneurs: they are able to spot problems, to take risks to promote innovative approaches to problem solving, and they have the ability to organize others to help turn policy ideas into government policies (Mintrom, 1997).

He also surveyed the spread of the idea of school choice among.different states, and tested out theories about which states were closest geographically, and which were most similar, but it turned out that what mattered was who sent officials to the same education conferences. Certainly it is the case that OpenCourseWare has not spread to the countries that are closest to the US, nor to the countries that are the most similar in structure.

In his discussion, he lists how professional networks can work as conduits for policy ideas, and platforms for policy entrepreneurs (Mintrom and Vergari 1998). These issue networks are institutionalized in the form of associations, journals, newletters, list-serves and conferences, and seem to promote what Granovetter (1973) called "weak ties" between different groups. Successful policy entrepreneurs are able to maintain these weak ties to different clusters of stakeholders that are spread throughout the globe (Steiner-Khamsi 2004a; 2004b).

An interesting case of the impact of one networked individual is what Gita Steiner-Khamsi (2006) calls the "Maris O'Rourke" effect. She was a New Zealander instrumental in the development of outcomes-based education (OBE) there in the 1970's, and when she moved to the US, OBE travelled with her. In fact, the tipping point which gave OBE a world career happened at the same time as O'Rourke entered the World Bank. This is a wonderful example of one individual playing a pivotal role in disseminating a policy innovation. We could easily replace O'Rourke with Catherine Casserly from the Hewlett Foundation, or Shigeru Miyagawa from MIT.

Conclusion

In this chapter, I have systematically compared the Top Level Courses Project with the MIT OpenCourseWare model, using the typology of Open Educational Resources proposed in chapter 2, and found that the Top Level Courses Project fit into the first category, transformative production, and MIT OpenCourseWare fit into the third category, reuse, whereas they shared the last category, consultation/transparency. I then suggested two different ways of conceptualizing MIT OpenCourseWare to ask how MIT OpenCourseWare might have had an influence on the development of Top Level Courses Project. I concluded that it could not have had much influence as a norm, but possibly as a policy innovation.

I went on to document how the project has been grossly misunderstood outside of China, and used the theories of policy borrowing introduced in chapter two to explain how this might have happened. Finally, I introduced the concept of policy networks to explain both the spread of the OpenCourseWare model to other East Asian countries, and to the establishment of China Open Resources for Education in China. In the next chapter, I will suggest that there is a fundamental difference between the ways professors and course development are conceptualized in China and North America, which may make the Top Level Courses Project model difficult to implement in North America, even though it has some admirable features.

Chapter 7: Conclusion

Two metaphors for professors and course delivery

I have described the historical and contextual background for the Top Level Courses Project, and compared it with the MIT OpenCourseWare project using a typology based on four different purposes. I have also discussed the possible impact of the MIT OpenCourseWare project conceptualized as either a norm or a policy innovation. However, what about reversing the picture, and asking: what are the chances that the Top Level Courses Project could be a policy innovation that might inspire North America? Apart from the decentralized higher education system in North America, which probably makes a similar project led by the federal or even a state government an impossibility, there is another factor which makes it difficult to conceptualize the implementation of a similar system even within a single university.

To explain this, and to illustrate what I believe to be a fundamental but little commented upon difference between the two university systems, I will propose two different metaphors for conceptualizing a professor, and the act of teaching a course: The professor as an artist and the course as a masterpiece, or the professor as an artisan, and the course a piece of craftmanship.

What we today call the multiversity does not have one single historical lineage, but brings together a number of different traditions. However, academics have since the early universities in Bologna and Paris struggled to establish a respected profession, with limited entry, that was largely self-managing. William Clark (2006) describes the "charismatic academics" that emerged in the 18th Century, that cultivated their charisma by insisting on their professorial dignity and by gathering admirers of their lecturing and research achievements. This emergence is related to the development of a specific university model, as symbolized by Humboldt University in Germany, originally the University of Berlin, where professors were given "Lehr und Lernfreiheit", or the freedom to teach and research (Kopetz 2002). This led to the idea of "academic superstars", even though in the current research universities, the way to fame has changed from applauding students attending your lecture, to publishing in the most prestigious journals.

If we think of this "charismatic academic" with a spark of genius as an artist, and their courses as master pieces, a number of things become clear. Although the patron of an artist would hope to see the artist deliver a string of masterpieces, one would never thoroughly examine a masterpiece to provide feedback on how next year's artwork could be "even better". Even less would one want an artwork designed by committee. Thus a tenured professor in North America is usually free to teach more or less what he or she wants, and although there is a system of student evaluations, there is no rigorous quality improvement system. The same academics that willingly submit their research to review

by their peers, will not accept anyone sitting in on their classes, to offer friendly advice at the end, and a course tends to be a personal achievement that disappears when an academic disappears, developed alone, and not shared with others.

However, this is not the only historical model of a university. Husén (1991) introduced four different historical models of the university.

- The Humboldtian research university, where research and teaching interacted from the very beginning.
- The British residential model, with close informal contact between students and professors
- The French grandes écoles, intellectually and socially elite institutions as part of a state-directed, meritocratic society, featuring only teaching and no research.
- The Chicago model, with a strong focus on the liberal arts.

If we look at the two first models listed, the Humboldtian research university, and the British residential model, they both focus on charismatic academics, and the idea that teaching did not need to be carefully planned to be successful, merely coming into contact with a great professor, and working with them in a form of apprenticeship, or mentor-mentee relationship, would be sufficient.

The French model, on the other hand, was much more centralized, where professors were hired as civil servants who helped produce future bureaucrats and political leaders. This was a much more goal-oriented system, and it separated research from teaching. Because of cultural affiliations, the French system had a large impact on Russian higher education, which began the introduction of technical higher education in 1809 with creating copies of the grandes écoles. This highly state-directed system also suited the Soviet Union, and was the inspiration for the system that would eventually be transmitted to China in the 1950's (as we have seen in chapter two) (Gouzevitch 1995).

The significance of separating research from teaching is profound, because it implies a specific epistemological view. According to Hayhoe (2008, 29):

> Within Soviet Communism, knowledge was seen as encyclopaedic, embracing all of the subject matter developed over human history. Thus the major subject disciplines developed in 19th century Europe were preserved in the curricula of secondary and tertiary institutions.

If you believe that knowledge is "encyclopaedic", it is possible to centralize and organize the teaching of this knowledge in very standardized forms. The purpose of a university degree becomes to transmit a certain body of knowledge, and one can measure and improve the delivery mechanism. In the German system, education could be seen not as transmitting a body of knowledge, but as cultivating certain attitudes and modes of thought among the students, training them to think scientifically.

Although these two models differ significantly in their view of epistemology, the act of delivering a course would still be entrusted to a single teacher. Distance universities offer a very different image of an academic, and the development of a course. At the Open University in the United Kingdom, whenever a new course needs to be developed, a committee is put together. This will typically consist of subject specialists, instructional designers, media specialists and web designers. The development of a new course typically takes several years. Once the course has been designed, it can then be offered to a large number of people (Bissell and Williams 2008).

Above we suggested that in the traditional research university, a professor could be seen as an artist, producing masterpieces. The distance university mode of production suggests a very different metaphor, one of an artisan. An artisan is skilled at what he or she does, but it can be learnt. He or she may work alone or together with a group of people towards a well-defined goal. The most important aspect is that the final product is improvable, it can be tested and evaluated, and it can be improved upon.

Just as not all courses in North America are developed following the untouchable masterpiece metaphor, academics in China certainly do not fully adhere to the artisan metaphor. However, there is a very different tradition for developing courses, and improving on these in concert with others. Some of this comes from a history of a very centralized curriculum, and a lack of academic freedom and professorial autonomy. But some of this humbleness and willingness to work together, and to improve, would surely be welcome in North America as well.

Thus the Ministry of Education is intent on promoting teaching teams consisting of senior, mid-career and young academics, to promote knowledge transfer and the involvement of senior faculty in undergraduate education. Courses have often been developed over a twenty-year period, in some cases being handed from mentor to mentee. Courses also regularly undergo internal and external peer-review, and many of the informants spoke of the way this had

allowed them to reflect on their teaching methods, and share good ideas with colleagues. That all seems like a very sensible approach, although one that would be very difficult to implement in a system still characterized by the image of artists and divine inspiration.

However, it is possible that things will be changing at North American universities as well. Distance and online learning is already growing at a very high pace, not just at traditional open universities, but at all institutions of learning. Because of the technical requirements, and the mode of delivery, these courses often end up being produced much more collaboratively.

This might have an impact on regular courses as well. James Bess (2000) has proposed that college teaching is so complex that its various roles cannot be expected to be filled by only one person. There are many different cognitive roles involved with developing and delivering a course, and Bess identified seven: content research, instructional design, instructional delivery, discussion leading, content/activity integration, assessment, and mentoring. Collaborative teams might be able to provide more comprehensive service to students than individual teachers. It would also mitigate the current "intellectual and physical isolation of the faculty member as teacher", and the resulting "paucity of opportunities for significant reward" which Bess believes plagues the North American system (p. 2). In light of this perspective, perhaps North America could learn something from the Chinese Top Level Courses Project.

The power of models and examples

In the previous section, I discussed different European models of the university, showing the role of teaching and research in the German university, which would become the inspiration for the North American research university, and the French university, which would inspire the Soviet Union, and in time China. I also showed how the role of the professor at traditional research universities and newer distance universities could be seen as an artist or an artisan. However, there are also important differences between the history of educational thought in China, and the West, which might have had an influence on the development of the Top Level Courses Project.

One of the important differences between education in China, and the West, was the much larger emphasis on the written word in China. While Clark (2006) spends much time discussing the oral traditions in the European medieval universities, China had already instituted the first anonymous written exams much earlier (Thomas H. C. Lee 2000). Students had access to a wealth of earlier writings, and were expected to imitate these as a form of learning. Reed (1992) talks about modelling as a pedagogical technique in China, whether in the case of art students carefully copying the master's strokes, or scholars copying the Confucian classics. She believes that "modelling is more than mere imitation, as we so often tend to view it in the West; rather, it is a process that should lead to inner transformation" (ibid, 78).

The Communist Party frequently chose outstanding people to act as exemplars for the nation, the most famous being the soldier Lei Feng, whose post-humously published diaries were widely read and discussed. Lei Feng could be seen as a "proletarianized version of earlier Confucian prototypes", cultivating the same virtues, loyalty, filial piety, self-cultivation, modesty, frugality, diligence and benevolence, as those of his Confucian forebearers (Reed 1998, 360).

It might be a stretch to see the current-day Top Level Courses professors as moral examples, and there is no mention in the official government policies about patriotism, selflessness, or sacrifice. Rather, it is a much more utilitarian focus on promoting excellent courses. However, the use of models might still be relevant, when discussing different approaches to teaching and the role of teachers. Stevenson and Stigler (1992, 167-168) have surveyed teacher attitudes in the US and China, and found significant differences related to building on a common core, versus having to invent everything from scratch.

> In Asia, the ideal teacher is a skilled performer. As with the actor or musician, the substance of the curriculum becomes the script or the score; the goal is to perform the role or piece as effectively and creatively as possible. Rather than executing the curriculum as a mere routine, the skilled teacher strives to perfect the presentation of each lesson. She uses the teaching techniques she has learned and imposes her own interpretation on these techniques in a manner that she thinks will interest and motivate her pupils.
>
> In America, teachers are judged to be successful when they are innovative, inventive and original. Skill presentation of a standard lesson is not sufficient and may even be disparaged as indicating a lack of innovative talent. It is as if American teachers were expected to write their own play or create their own concerto day after day and then perform it with expertise and finesse. These two models, the skilled performer and the innovator, have very different value in the East and West.

Stevenson and Stigler are discussing the attitudes of K-12 teachers, but it is possible that there are similar differences in attitude among university professors, where the requirement to be unique and independent is much stronger in North America. In the two sections above, I have shown how the Top Level Courses Project exists in a higher education system that owes more to the French centralized teaching-focused system than the German research-university model that influenced North American universities so profoundly. It also exists in a culture where models and examples, and building on the work of others – also in teaching – have a long history. These are factors that might make it difficult to implement a similar program in North America, but also factors that make us understand and appreciate the Chinese system much better, and could inspire us to rethink university teaching in North America.

Conclusion

In this thesis, I set out to understand how the Top Level Courses Project was organized, and how it came to be. I wanted to compare it with MIT OpenCourseWare, and understand whether MIT's project had influenced the development of the Top Level Courses Project in any way. I also discussed whether the spread of the OpenCourseWare concept could be seen as a sign of growing isomorphism in values among institutions of higher education in the world, and I proposed the counter-theory that what was happening was a borrowing of ideas or concepts in name only, that were implemented in quite different ways.

In chapter three, I showed how concepts of course teams, and improvable courses developed by groups over many years arose, and how the tradition of course evaluations followed immediately after the centralized curriculum began to be opened up. This came together with the unprecedented expansion of Chinese higher education in the last 15 years, and the strong focus on investing in excellent examples – first universities, then disciplines, and finally courses – chosen through peer-review. Taken together with the focus on IT in education, this made the creation of the Top Level Courses Project a natural next step, but it is possible that some of the impetus came from knowledge of the MIT project.

I have described in detail how the project is organized, and how it is experienced by university administrators and participating professors. I used this in chapter six to show that the project was fundamentally different from MIT's OpenCourseWare, although there were a few areas that overlapped. I discussed the differences between the two projects using the framework of the four purposes, suggested in chapter two, as well as by conceptualizing MIT OpenCourseWare as a norm, and as a policy innovation.

I then showed how the Top Level Courses Project has been fundamentally misunderstood in the West as a direct continuation of the MIT model, and used theories from policy borrowing, and case studies from other Asian countries, to show how this could have happened. Finally, in the conclusion, I proposed that the history of Chinese higher education discussed in chapter two has led to a model of course development that is fundamentally different from the North American model, as a reason why this project could not easily be transferred to a North American university, but also suggest that this situations might be changing.

Directions for future research

This thesis has given a detailed account of how the Top Level Courses Project is organized, and what purposes it is intended to serve. I have not made any attempt to evaluate whether the project is successful in attaining any of these goals. Although there have been criticisms of the project raised in the Chinese literature, and some evaluation performed, there is a great need for rigorously designed studies designed to test some of the central assumptions. I believe that the four purposes introduced in chapter two could help in that process. As it is, several papers have attempted to evaluate the project without first specifying which purpose it believed the program served.

One could design an experiment to measure the impact of teachers who go through the process of having their courses selected as Top Level Courses, and the entire department. Do they become better teachers? Do the courses improve? Does it have an inspirational effect on the entire department? Further, one could look at professors at other institutions who consult material from courses similar to their own. Does it inspire them to improve their own courses, or do they acquire new ideas and content that they can use in their teaching? It is also possible to look at student use of the resources, and whether they are able to learn effectively, but it should be kept in mind that this was never one of the main purposes of the project (although it seems to have become slightly more prioritized as the project develops).

There is also a wide-open space for comparative educators and higher education specialists within the open education research sphere. Currently, most of the research is conducted by educational technologists, but there are many very fruitful venues for comparative and

historical studies. This thesis has been an attempt at using Chinese higher education history and current context to explain the development of an Open Educational Resources project that ended up very differently from the global OpenCourseWare model. Another approach would be to use these open materials as data in a comparative curriculum project. There are a few examples of this from China, where China Open Resources for Education facilitated 148 comparative studies comparing MIT curriculum with the curriculum at Chinese universities (CORE 2007).

Two specific examples are Li et al. (2007), who conducted a narrow study of 14 Top Level biology courses and 22 MIT OpenCourseWare biology courses, and found that Top Level Courses are largely based on unidirectional classroom instruction, whereas MIT courses emphasize student interaction. And Liu Kefu (2006) used OpenCourseWare to do a comparative study of classics courses in the United States. Given the wide variety of materials available, this could fruitfully be extended to other areas.

References

AVA. 2010. “Jingpin kecheng lubo xitong|kecheng lubo xitong|lubo zhibo xitong” 精品课程录播系统|课程录播系统|录播直播系统 [Top Level Courses recording system | course recording system | recording and broadcasting system]. Guangzhou shi aoweiya dianzi keji gongsi 广州市奥威亚电子科技有限公司. Accessed August 21. http://www.ava.com.cn/cn/ProductInfo.asp?id=411

Behlendorf, Brian. 1999. "Open Source as a Business Strategy." In *Open Sources: Voices from the Open Source Revolution*, edited by Chris DiBona, Sam Ockman, and Mark Stone, 149-170. Sebastopol, CA: O'Reilly Media, Inc.

Bess, James L. 2000. *Teaching Alone, Teaching Together: Transforming the Structure of Teams for Teaching.* San Francisco: Josey-Bass.

Bissell, Chris and Judith Williams. 2008. “Coping with a changing world: the UK Open University approach to teaching ICT.” Paper presented at the International Technology, Education and Development Conference, Valencia, Spain, May 3-5. http://oro.open.ac.uk/21864/

Cape Town. 2010. “The Cape Town Open Education Declaration.” Accessed on August, 20. http://www.capetowndeclaration.org/read-the-declaration

Carroll, Michael W. 2006. “Creative Commons and the New Intermediaries.” Michigan State Law Review 45.

Carson, Stephen. 2009. “The unwalled garden: growth of the OpenCourseWare Consortium, 2001-2008”. *Open Learning* 24 (1): 23-29.

Checkel, Jeffrey T. 1999. “International Institutions and Socialization.” Arena Working Papers 99/5. Oslo, Norway. http://www.arena.uio.no/publications/wp99_5.htm

Clark, William. 2006. *Academic Charisma and the Origins of the Research University*. Chicago and London: University of Chicago Press.

CORE. 2007. “2007 Annual Report.” China Open Resources for Education. http://old.core.org.cn/en/news/2007/071231.htm

CORE. 2010a. “About CORE.” China Open Resources for Education. Accessed August 22. http://www.core.org.cn/a/About-CORE.html

CORE. 2010b. “History.” China Open Resources for Education. Accessed August 22. http://www.core.org.cn/a/History.html

CORE. 2010c. “Guowai kaifang kecheng -> hanhua kecheng” 国外开放课程->汉化课程 [Foreign open courses -> courses translated to Chinese]. China Open Resources for Education. Accessed August 22. http://old.core.org.cn/core/opencourse/course_subject.aspx?do=com

Ding, Xingfu 丁兴富, Wang Long 王龙, Tian Hongbin 田洪滨, Jin Honglian 金红莲, Ping Liguo 冯立国, and Shen Xiaoping 沈孝苹. 2005. “Beijing shi jingpin kecheng wangshang ziyuan yunxing qingkuang zhuanti diaoyan xiangmu” 北京市精品课程网上资源运行情况专题调研项目 [Special investigation report on excution of Beijing city Top Level Courses online materials]. http://jpkc.bjedu.cn/aaic/

Dollar, Anna and Paul S. Steif. 2008. “An Interactive, Cognitively Informed, Web-Based Statics Course”. *International Journal of Engineering Education* 21 (4).

Finnemore, Martha and Kathryn Sikkink. 2005. “International Norm Dynamics and Political Change.” *International Organization* 52 (4), 887-917.

Five-Pointed Star 2010. “Jingpin kecheng wangzhan jianshe | jingpin kecheng wangzhan zhizuo | wangye zhizuo jingpin kecheng | guojia jingpin kecheng

ziyuan wang (zhuanye dazao Hangzhou, Binjiang, Xiasha jingpin kecheng di yi wang)" 精品课程网站建设|精品课程网站制作|网页制作精品课程|国家精品课程资源网–(专业打造杭州,滨江,下沙精品课程第一网) [Building of Top Level Course websites | Making Top Level Course websites | Creating Top Level Course webpages | Top Level Course resource network (the first net to professionally create Top Level Courses for Hangzhou, Binjiang and Xiasha). Wujiao xing keji 五角星科技. Accessed August 21. http://www.wjxit.com/jpkc.asp

Ghosh, S. B. and Anup Kumar Das. 2006. "Open access and institutional repositories – a developing country perspective: a case study of India." Paper delivered at World Library and Information Congress, Seoul, Korea. https://drtc.isibang.ac.in/bitstream/handle/1849/272/157-Ghosh_Das-en.pdf?sequence=1

Gouzévitch, I. 1995. "Technical higher education in nineteenth-century Russia and France: Some thoughts on a historical choice". *History and Technology* 12 (2): 109-117.

Granovetter, Mark S. 1973. "The Strength of Weak Ties." *American Journal of Sociology* 78 (6): 1360-1380.

Hariyanto, Dedy. 2009. "Pemahaman siswa terhadap buku sekolah elektronik dan pemanfaatannya pada SMK Negeri 1 Blitar" [The students' understanding and use of electronic schools books at the National Senior High School 1 Blitar]. MA thesis, Faculty of Technology, State University of Malang, Indonesia. http://eprints.uny.ac.id/827/

Hayhoe, Ruth. 1987. "China's Higher Curricular Reform in Historical Perspective". *The China Quarterly* 110 (June): 196-230.

———. 1989. *China's Universities and the Open Door*. Armonk, NY: M. E. Sharpe.

———. 1991. "The tapestry of Chinese higher education." In *Chinese education: problems, policies, and prospects*, edited by Irving Epstein. New York & London: Garland Publishing.

———. 1996. *China's Universities, 1895-1995: A Century of Cultural Conflict*. RoutledgeFalmer Studies in Higher Education.

———. 2008. "Philosophy and Comparative Education: What Can we Learn from East Asia?" In *Comparative and International Education: Issues for Teachers*, edited by Karen Mundy, Kathy Bickmore, Ruth Hayhoe, and Meggan Madden. International Perspectives on Education Reform Series. New York: Teachers College.

Hecker, Frank. 2000. "Setting Up Shop: The Business of Open-Source Software." http://hecker.org/writings/setting-up-shop

HEEC. 2010. "The Introduction of the Higher Education Evaluation Center of the Ministry of Education." Higher Education Evaluation Center of the Ministry of Education. Accessed August 20. http://www.pgzx.edu.cn/zxgk/zxgk_eng.htm

Hewlett Foundation. 2005. "Open Educational Resources Initiative." Accessed December 12. http://www.hewlett.org/Programs/Education/OER/Publications/oeroverview.htm.

———. 2006. "The Promise of Open Educational Resources." http://www.hewlett.org/uploads/files/ChangeArticle.pdf

Huang, Futao. 2005. "Qualitative Enhancement and Quantitative Growth: Changes and Trends of China's Higher Education". *Higher Education Policy* 18: 117-130.

Huaqin. 2010. "Jingpin kecheng pingtai" 精品课程平台 [Top Level Courses platforms]. Hubei huaqin jiaoyu ruanjian jishu youxian gongsi 湖北华秦教育软件技术有限公司. Accessed August 21. http://www.51tek.com/category-476.html

Husén, Torsten. 1991. "The idea of a university: changing roles, current crisis and future challenges." In The role of higher education in society: quality and pertinence. The 2nd UNESCO-Nongovemmental Organizations Collective Consultation on Higher Education, 8–11 April 1991. New Papers on Higher Education 1. UNESCO, Paris, France.

Håklev, Stian (2010). "Key numbers from China's 2010-2020 education plan". Random Stuff that Matters (blog), February 28. http://reganmian.net/blog/2010/02/28/key-numbers-from-chinas-2010-2020-education-plan/

Jiaoshi wangluo peixun. 2010. "Jingpin kecheng jianshe zhuanti" 精品课程建设专题 [Topics related to the construction of Top Level Courses]. Quanguo gaoxiao jiaoshi wangluo peixun zhongxin 全国高校教师网络培训中心. Accessed August 21. http://www.enetedu.com/topic/content/zhuanti/

Jingpinke. 2010. "Zhiliang gongcheng jieshao" 质量工程介绍 [Introducing the Quality Project]. Guojia jingpin kecheng ziyuan wang 国家精品课程资源网 [National Top Level Courses Project resource

network]. Accessed August 20. http://www.jingpinke.com/xpe/portal/c7d2ddfa-11b1-1000-9721-4db6c3cdd0ed

JOCW. 2010. "About JOCW." Japan OpenCourseWare Consortium. Accessed August 23. http://www.jocw.jp/AboutJOCW.htm

Kathryn Anderson-Levitt. 2003. *Local Meanings, Global Schooling: Anthropology and World Culture Theory*. Palgrave Macmillan.

Kobayashi, Toshio and Akemi Kawafuchi. 2006. *Japan Open Course Ware Consortium (JOCW): A Case Study in Open Educational Resources Production and Use in Higher Education.* OECD/CERI Report. http://www.oecd.org/dataoecd/61/2/37647892.pdf

Kopetz, Hedwig. 2002. *Forschung und Lehre: Die Idee der Universität bei Humboldt, Jaspers, Schelsky und Mittelstraß*. Vienna: Böhlau Verlag.

Korol, Alexander G. 1957. *Soviet Education for Science and Technology*. New York: Wiley and the Technology Press.

Lee, Haishuo 李海硕. 2010. "Kaifang shi kecheng (OpenCourseWare) zai Taiwan: Jiaotong Daxue kaifang shi kecheng zhi qiyuan, yingxiang, yiji Taiwan Kaifang shi Kecheng Lianmeng zhi fazhan" 开放式课程(OpenCourseWare)在台湾: 交通大学开放式课程之起源、影响、以及台湾开放式课程联盟之发展 [OpenCourseWare in Taiwan: The Origin and Influence of National Chiao Tung University's OCW and the Development of Taiwan OCW Consortium]. MA thesis, National Chiao Tung University, Taiwan. http://ndltd.ncl.edu.tw/cgi-bin/gs32/gsweb.cgi/ccd=_Tk68k/search?q=auc=%22%E6%9D%8E%E6%B5%B7%E7%A2%A9%22.&searchmode=basic#XXX

Lee, Mimi Miyoung, Meng-Fen Grace Lin, and Curtis J. Bonk. 2007. "OOPS, Turning MIT Opencourseware into Chinese: An analysis of a community of practice of global translators". *The International Review of Research in Open and Distance Learning* 8 (3). http://www.irrodl.org/index.php/irrodl/article/viewArticle/463/980

Lee, Thomas H. C. 2000. *Education in traditional China: a history*. Boston: E. J. BRill.

Lewin, Keith M., Xu Hui, Angela W. Little, and Zheng Jiwei 2004. *Educational innovation in China: Tracing the impact of the 1985 reforms*. Harlow, UK: Longman.

Li, Bin 李斌. 2007. "Wo guo gaoxiao benke jiaoxue 'zhiliang gongcheng' dadao yuqi mubiao" 我国高校本科教学"质量工程"达到预期目标 [Our country's university teaching "quality project" reached its targets]. Jingpinke.com. http://www.jingpinke.com/xpe/portal/5b076385-11d6-1000-9287-bd80a6bd4b60?uuid=710e048f-129c-1000-9e97-00f8fbf4139d

Li, Jun and Jing Lin. 2008. "China's Higher Education Expansion: A Policy Analysis from a Rational Framework". In *The Worldwide Transformation of Higher Education,* edited by David P. Baker and Alexander W. Wiseman. International Perspectives on Education & Society, 9. Bingley, UK: JAI Press.

Li, Song 李松, Huang Ronghuai 黄荣怀, Ceng Lanfang 曾兰芳, Chen Li 陈莉, and Zhang Yan 张燕. 2007. "Guojia jingpin kecheng yu MIT OCW kecheng bijiao fenxi" 国家精品课程与MIT OCW课程比较分析 [Comparative analysis of National Top Level Courses and MIT OpenCourseWare]. Paper presented at 2007 National Educational Technology Doctoral Seminar. http://www.docin.com/p-12909882.html

Liu, Kefu 刘克苏. 2006. "Cong masheng ligong xueyuan OCW tan woguo gaoxiao jingdian jiaoyu" 从麻省理工学院OCW谈我国高校经典教育 [Discussion of classical education in our national universities based on MIT OpenCourseWare]. Shandong gongshang xueyuan xuebao 山东工商学院学报 20 (6).

Liu, Zenghui 刘增辉. 2009. "Jingpin kecheng cujin rencai peiyang zhiliang de tigao" 精品课程促进人才培养质量的提高 [The Top Level Courses Project promote increasing the quality of talent training]. *Zhongguo yuancheng jiaoyu* 中国远程教育 2. http://www.xuexigang.com/ycjy/fmzt/14361.html

Lu, Xinmin 路新民. 2008. "Jingpin yu fanpin" 精品与泛品 [Top level and mass-produced]. *Kaifang Jiaoyu Yanjiu* 开放教育研究 14 (1).

Makoshi, Nobuyasu 2006. "TokyoTech OCW WG and Japan OCW Consortium." Paper presented at joint OECD/AIDE conference. http://www.oecd.org/dataoecd/60/33/37649652.pdf

Makriyannis, Elpida 2010. "Enter the Dragon: The Rise of Open Educational Resources in China." Elpida's blog. Open Learning Network. http://olnet.org/node/190

Mao, Lirui 毛礼锐, and Shen Guanqun 沈灌群. 1989. *Zhongguo Jiaoyu Tongshi* 中国教育通史 [General History of Chinese Education]. Shandong Jiaoyu Chubanshe 山东教育出版社.

Mao, Yaqing, Du Yuan, and Liu Jingjuan. 2009. "The Effects of University Mergers in China since 1990s: From the Perspective of Knowledge Production." *International Journal of Educational Management* 23 (1), 19-33.

Meyer, John W., Francisco O. Ramirez, David John Frank, and Evan Schofer. 2006. "Higher Education as an Institution. Center on Democracy, Development and the Rule of Law". Working Paper, Stanford University, CA. http://cddrl.stanford.edu/publications/higher_education_as_an_institution/

Meyer, John W., John Boli, George M. Thomas, and Francisco O. Ramirez. 1997. "World Society and the Nation-State." *The American Journal of Sociology* 103 (1): 144-181.

Mike Caulfield. 2009. "Openness as reuse, and openness as transparency". Tran|script (blog), January 25. http://mikecaulfield.com/2009/01/25/openness-as-reuse-and-openness-as-transparency/

Mintrom, Michael. 1997. "Policy Entrepreneurs and the Diffusion of Innovation." *American Journal of Political Science* 41: 738-770.

Mintrom, Michael and Sandra Vergari. 1998. "Policy Networks and Innovation Diffusion: The Case of State Education Reforms." *The Journal of Politics* 60 (1): 126-148.

MIT news. 2001a. "MIT to make nearly all course materials available free on the World Wide Web." MIT news, April 4. http://web.mit.edu/newsoffice/2001/ocw.html

———. 2001b. "Mellon, Hewlett Foundations grant $11M to launch free MIT course materials on web". MIT news, June 18. http://web.mit.edu/newsoffice/2001/ocwfund.html

MIT OCW 2007. MIT Marks OpenCourseWare Milestone. http://ocw.mit.edu/about/media-coverage/press-releases/milestone/

———. 2010a. "About OCW." Accessed August 20. http://ocw.mit.edu/about/

———. 2010b. "Our History." Accessed August 20. http://ocw.mit.edu/about/our-history/

———. 2010c. "Privacy and terms of use." Accessed August 20. http://ocw.mit.edu/terms/#cc

———. 2010d. "MIT OpenCourseWare Reaches 2,000 Course Milestone." http://ocw.mit.edu/about/media-coverage/press-releases/milestone/

MIT OpenCourseWare. 2005. *2005 Program Evaluation Findings Report*. Boston, MA: MIT OpenCourseWare. http://ocw.mit.edu/ans7870/global/05_Prog_Eval_Report_Final.pdf

MoE. 2001. "Guanyu jiaqiang gaodeng xuexiao benke jiaoxue gongzuo tigao jiaoxue zhiliang de ruogan yijian" 关于加强高等学校本科教学工作提高教学质量的若干意见 [Some ideas about strengthening undergraduate teaching and improving pedagogy in higher education]. Ministry of Education of the People's Republic of China. http://www.jingpinke.com/news/details?uuid=eee83724-123b-1000-96c5-dbe8a79b2de0&objectId=oid:eee83724-123b-1000-96c4-dbe8a79b2de0

———. 2003. "Jiaoyubu guanyu qidong gaodeng xuexiao jiaoxue zhiliang yu jiaoxue gaige gongcheng jingpin kecheng jianshe gongzuo de tongzhi" 教育部关于启动高等学校教学质量与教学改革工程精品课程建设工作的通知 [Announcement by the Ministry of Education about initiating the teaching quality and teaching reform project for colleges and universities, the construction of Top Level Courses]. Ministry of Education of the People's Republic of China. http://www.jingpinke.com/news/details?uuid=eeea5b93-123b-1000-99ec-dbe8a79b2de0&objectId=oid:eeea5b93-123b-1000-99eb-dbe8a79b2de0

———. 2004. "Guojia jingpin kecheng jianshe gongzuo shishi banfa" 国家精品课程建设工作实施办法 [Method of implementation for the construction of National Top Level Courses]. Ministry of Education of the People's Republic of China. http://dean.yytc.net.cn/html/guizhangzhidu/jiaoyubuwenjian/20071226/38.html

———. 2010. "Higher Education in China." Ministry of Education of the People's Republic of China. Accessed August 20. http://www.moe.edu.cn/english/higher_h.htm

NCTU. 2010. "Guanyu kaifang shi kecheng" 关于开放式课程 [About OpenCourseWare]. National Chiao Tung University. Accessed August 24. http://ocw.nctu.edu.tw/about.php

Norman, Solvig and David Porter. 2007. “Designing Learning Objects.” Knowledge Series. Vancouver, BC: Commonwealth of Learning. http://www.col.org/resources/publications/trainingresources/knowledge/Pages/designLO.aspx

NTCP. 2010. “Gaodeng xuexiao jingpin kecheng jianshe gongzuo” 高等学校精品课程建设工作 [Institutions of higher education Top Level Courses development work]. National Top Level Courses Project. Accessed September 3. http://www.jpkcnet.com/new

O’Brien, Kevin J. 2006. “Discovery, Research (Re)design,and Theory Building.” In *Doing Fieldwork in China*, edited by Maria Heimer and Stig Thøgersen. Honolulu: University of Hawai‘i Press.

OpenCourseWare Consortium. 2010a. “Members.” Accessed August 20. http://www.ocwconsortium.org/members/members

———. 2010b. “Making the Case to Higher Administration.” Accessed August 22. http://www.ocwconsortium.org/community/documents/doc_download/33-making-the-case-to-higher-administration

———. 2010c. “Making the Case to the Mid-Level Administration.” Accessed August 22. http://www.ocwconsortium.org/community/documents/doc_download/34-making-the-case-to-the-mid-level-administration

———. 2010d. “Making the Case to the Faculty.” Accessed August 22. http://www.ocwconsortium.org/community/documents/doc_download/35-making-the-case-to-the-faculty

———. 2010e. “Making the Case to the Information Technology Team.” Accessed August 22. http://www.ocwconsortium.org/community/documents/doc_download/36-making-the-case-to-the-information-technology-team

———. 2010f. “About us.” Accessed September 3. http://www.ocwconsortium.org/about-us/about-us.html

Otsuka, Yutaka 2001. “Japan's Involvement with Higher Education in Manchuria: Some Historical Lessons from an Imposed Educational Cooperation.” In *Education, Culture, and Identity in Twentieth-Century China*, edited by Glen Peterson, Ruth Hayhoe, and Yongling Lu. University of Michigan Press, 54-81.

Pepper, Suzanne 1990. *China's Education Reform in the 1980s: Policies, Issues and Historical Perspectives*. China Research Monograph 36. Berkeley: University of California Press.

Phillips, David. 2004. “Toward a Theory of Policy Attraction in Education.” In *The Global Politics of Educational Borrowing and Lending*, edited by Gita Steiner-Khamsi. New York: Teachers College Press.

Pretorius, S. G. and Y. Q. Xue. 2003. “The Transition from Elite to Mass Higher Education: A Chinese Perspective.” *Prospects* 33 (1).

Qin, Lijuan 秦丽娟. 2008. “Guojia jingpin kecheng tuiguang moshi yanjiu” 国家精品课程推广模式研究 [Research on the methods of promoting Top Level Courses]. MA thesis, Future Education Research Center, Department of Educational Technology, South China Normal University.

Reed, Gay Garland. 1992. “Modeling as a Pedagogical Technique in the Art and Life of China”. *Journal of Aesthetic Education* 26 (3): 75-83.

Reed, Gay Garland. 1998. “Is Lei Feng Finally Dead? The Search for Values in a Time of Reform and Transition”. In *Higher education in post-Mao China*, edited by Michael Agelasto and Bob Adamson. Hong Kong University Press.

Baraniuk, Richard G. 2008. “Challenges and Opportunities for the Open Education Movement: A Connexions Case Study.” In *Opening Up Education: The Collective Advancement of Education through Open Technology, Open Content, and Open Knowledge*, edited by Toru Iiyoshi and M. S. Vijay Kumar, 229-246. Boston, MA: MIT Press.

Schriewer, Jürgen and Carlos Martinez. 2004. “Constructions of Internationality in Education.” In *The Global Politics of Educational Borrowing and Lending*, edited by Gita Steiner-Khamsi. New York: Teachers College Press.

Silova, Iveta. 2009. “Varieties of Educational Transformation: The Post-Socialist States of Central/Southeastern Europe and the Former Soviet Union”. In *International Handbook of Comparative Education*, edited by Robert Cowen and Andreas M. Kazamias. Springer.

Skyclass. 2010a. “Tiankong Jiaoshi” 天空教师 [Sky classroom]. Nanjing yixue jiaoyu ruanjian youxian gongsi 南京易学教育软件有限公司. Accessed August 21. http://www.skyclass.cn/visual.htm

———. 2010b. “Chongci 2010 Guojia jingpin kecheng: 3D guojia jingpin kecheng peixun yaoqing” 冲刺2010国家精品课程3D国家精品课程培训邀请

[2010 National Top Level Courses sprint: Invitation to 3D National Top Level Courses training]. 南京易学教育软件有限公司. Accessed August 21. http://www.skyclass.cn/train.htm

SocialLearnLab. 2010. "Jiaoyu dafaxian" 教育大发现 [Great educational exploration]. SocialLearnLab. Accessed August 22. http://sociallearnlab.org/

Steiner-Khamsi, Gita. 2004a. "Blazing a trail for policy theory and practice." In *The Global Politics of Educational Borrowing and Lending*, edited by Gita Steiner-Khamsi. New York: Teachers College Press.

———. 2004b. "The Politics of Educational Lending." In *The Global Politics of Educational Borrowing and Lending*, edited by Gita Steiner-Khamsi. New York: Teachers College Press.

———. 2006. "The Economics of Policy Borrowing and Lending: A Study of Late Adopters". *Oxford Review of Education* 32 (5): 665-678.

Steiner-Khamsi, Gita and Hubert O. Quist. 2000. "The Politics of Educational Borrowing: Reopening the Case of Achimota in British Ghana". *Comparative Education Review* 44 (3): 272-299.

Steiner-Khamsi, Gita and Ines Stolpe. 2006. *Educational Import: Local Encounters with Global Forces in Mongolia*. Palgrave Macmillan.

Stevenson, Harold W. and James W. Stigler. 1992. *The Learning Gap: Why Our Schools Are Failing and What We Can Learn from Japanese and Chinese Education*. New York: Summit Books.

Tan, Feng 谭凤. 2008. "MIT OCW de chenggong zhi dao dui woguo jingpin kecheng jianshe de qishi" MIT OCW的成功之道对我国精品课程建设的启示 [The inspirational success of MIT OCW for the construction of National Top Level Courses]. Zhongguo dianli jiaoyu 中国电力教育 3.

Tapscott, Don and Williams, Anthony D. 2006. *Wikinomics: How Mass Collaboration Changes Everything.* New York, Portfolio.

TOCWC. 2010. "Lianmeng shuoming" 联盟说明 [Explanation about the consortium]. Taiwan OpenCourseWare Consortium. Accessed August 24. http://www.tocwc.org.tw/about.php

UNESCO. 2002. Final report. Forum on the Impact of Open Courseware for Higher Education in Developing Countries, Paris 1-3 July. http://unesdoc.unesco.org/images/0012/001285/128515e.pdf

———. 2003. Synthesis report on trends and development in higher education since the World Conference on Higher Education (1998-2003), Paris 23-25 June. http://portal.unesco.org/education/en/files/20031/10561417481synthesis_report.pdf/synthesis_report.pdf

Vest, Charles M. 2006. Open Content and the Emerging Global Meta-University. *Educause Review* (May/June): 18-30. http://net.educause.edu/ir/library/pdf/ERM0630.pdf

Vidovich, Lesley, Yang Rui, and Jan Currie/ 2007. "Changing accountabilities in higher education as China 'opens up' to globalisation." *Globalisation, Societies and Education* 5 (1): 89-105.

Wang, Hongju 王洪菊. 2009. "MIT OCW yu woguo jingpin kecheng bijiao" MIT OCW与我国精品课程比较 [Comparison between MIT OCW and our Top Level Courses]. Keji xinxi 科技信息 32.

Wang, Peng 王鹏. 2008. "2003-2008 nian guojia jingpin kecheng pinggu zhibiao tixi de bianhua yu qushi fenxi" 2003—2008 年国家精品课程评估指标体系的变化与趋势分析 [Analysis of the change and trends in evaluation indicators of the National Top Level Courses Project from 2003-2008]. Pingjia yu guanli 评价与管理 15.

Wang, Xiufang. 2003. *Education in China since 1976*. Jefferson, NC: McFarland & Company.

Wang, Xiuhua 王秀花. 2008. "Jingpin kecheng jianshe jiqi pingshen de wuqu" 精品课程建设及其评审的误区 [The construction of Top Level Courses and mistaken concepts in evaluation]. *Zhiye jiaoyu yanjiu* 职业教育研究 1.

Wang, Xueyin 王雪引. 2008. "Qianyi jingpin kecheng zai jiaoxue gongzuo zhong de zuoyong" 浅议精品课程在教学工作中的作用 [Discussing the use of Top Level Courses in the process of teaching]. *Gansu keji zongheng* 甘肃科技纵横 37 (1).

Wei, Runfang 2008. *China's Radio & TV Universities and the British Open University: A Comparative Study*. Yilin Press.

Wen, Heping 文和平. 2007. "'Zhiliang gongcheng' quanmian qidong" '质量工程'全面启动 [The quality project has fully started]. *Zhongguo daxue jiaoyu* 中国大学教学 2.

Wiley, David. 2003. "A Modest History of OpenCourseWare". Autounfocus (blog). March 21.

http://www.reusability.org/blogs/david/archives/000044.html

———. 2007. “On the Sustainability of Open Educational Resource Initiatives in Higher Education.” Paper commissioned by the OECD’s Center for Educational Research and Innovation (CERI) for the project on Open Educational Resources. http://www.oecd.org/dataoecd/33/9/38645447.pdf

Xu, Bill and Richard Stallman. (2010). “Free Software Movement: From Genesis to the GNU GPL version 2.” Accessed August 20. http://www.zeuux.org/philosophy/billxu-rms-fsm-ancient-to-gplv2.html

Yang, Pingzhan 杨平展, Wang Bin 王斌, and Luo Yangyuan 罗光元. 2007. "Masheng ligong daxue de kaifang kejian dui woguo daxue jingpin kecheng jianshe de qishi" 麻省理工大学的开放课件对我国大学精品课程建设的启示 [Inspiration from MIT OpenCourseWare for construction of National Top Level university courses]. *Hunan di yi shifan xuebao* 湖南第一师范学报 7 (2).

Yang, Rui. 2004. "Toward Massification: Higher Education Development in the People's Republic of China since 1949." In *Higher Education: Handbook of Theory and Research*, edited by John C. Smart. Dordrecht: Kluwer. 311-374.

Young, Jeffrey 2010. “China's Answer to MIT's OpenCourseWare May Get Reboot.” *The Chronicle of Higher Education*, September 10. http://chronicle.com/blogPost/Chinas-Answer-to-MITs/26833/

Zeng, Haijun 曾海军, Zeng Dekao 曾德考, Fan Xinmin 范新民. 2007.“Jiyu jingpin kecheng pingshen zhibiao tantao wangluo jiaoyu ziyuan de jianshe yu gongxiang" 基于精品课程评审指标探讨网络教育资源的建设与共享 [Based on quality standards of network course to explore e-learning resources building and sharing]. *Zhongguo Yuancheng Jiaoyu* 中国远程教育 10, 47-52.

Zhou, Yan 周燕. 2009. “MIT OCW xiaoguo pingjia dui woguo jingpin kecheng de qishi” MIT OCW 效果评价对我国精品课程评价的启示 [What have we learnt from MIT OCW in appraising quality courses]. *Heilongjiang jiaoyu (gaojiao yanjiu yu pinggu)* 黑龙江教育 4.

Zhou, Yuliang 1986. *Education in Contemporary China.* Hunan Education Publishing House.