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REPORT 04

Network-Based Distance Education in Chinese Universities

Cathy Deng (Yanlai Deng)

February 2004

Edited by Paul Bacsich

Disseminated by The Higher Education Academy

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Editor's Introduction

This paper, written by a Chinese Visiting Researcher at UKeU, gives an overview of e-learning at four high ranking Chinese universities.* It is in our view particularly valuable that it is written from a Chinese analytic perspective, rather than from a Western standpoint. Several universities and agencies have found to their surprise that favourite Western techno-pedagogic approaches of collaborative learning using bulletin boards, a strong focus on textual resources, and questioning of authority via group emails, do not necessarily transport well to the Chinese system.

About the Author

Yanlai Deng studied IT at university in mainland China. In 2003 she won a scholarship from the Chinese government to carry out research in the UK under Professor Paul Bacsich at Sheffield Hallam University, but since Paul and many of his core team were moving or had moved to UKeU, it was agreed that Yanlai would come instead to UKeU to work with him. UKeU was very interested in mainland China as a potential market for its courses, as well as being managers of the HEFCE-funded eChina programme (see below), and there were particular technical challenges in adapting the UKeU learning environment to cope with Chinese script.

Yanlai arrived in England in late August 2003 and stayed for a 6-month visit, leaving UKeU in February 2004. While in the UK she preferred to be known in English-speaking circles by the name "Cathy" given to her in language classes by her English teacher back home. She worked on a number of reports while at UKeU, of which this is the most comprehensive and relevant to a general audience. She also assisted UKeU liaison with a number of incoming high-level Chinese delegations.

Acknowledgements

We are particularly pleased to thank the noted e-learning expert Professor Curtis Bonk of Indiana University, and Miss Tingting Zeng, for their assistance in providing critical reading and updating/explanatory footnotes for this report.

The original document now follows, starting on the next page.

* All four of the universities reviewed here, Beijing Normal University, Tsinghua University, China Central Radio & TV University, and Beijing Foreign Studies University, are well known, though of them only Tsinghua University is considered to be in the very top tier of Chinese universities.

0. Executive Summary*

The theory and application of e-learning in Chinese colleges and universities is an interesting issue. Some factors affecting Network-Based Distance Education (NBDE), such as platform, delivery system, curriculum, and management, etc. will be analyzed in this report. The methodology used in this report is the in-depth case study.

Some aspects of Chinese distance education, in particular the purpose and the operational program of distance education, the government policy about e-learning of HEIs, the technical partners of HEIs, the platforms for distance education, some famous persons in the distance education field, and the problems of e-learning in Chinese universities, will be introduced.

Most materials in this report were collected from the relevant Web sites which are built by Chinese universities. The aim was to analyze these materials and draw some conclusions about NBDE in China.

The cases we chose were four leading Chinese Universities in the NBDE field: Tsinghua University (THU), Beijing Normal University (BNU), Beijing Foreign Studies University (BFSU), and the China Central Radio and TV University (CCRTU).

1. Network-Based Distance Education in Chinese Institutions

1.1 Background

In recent years, China has had an increasing rate of average annual economic growth as compared with other developing countries. Economic development not only enables the substantial enhancement of Chinese people's living standard, but also catalyzes the demands of education from Chinese people.[†]

From a 1997 total of approximately 3.2 million students in regular higher education (about 4% of the 18-22 age group), numbers reached a staggering total of nearly 7 million in 2000 (about 10% of the cohort), The Ministry's target, including adult and distance enrolments, is 16 million enrolments by 2010.^{‡§}

* From this point on the text is from the Cathy Deng report. (Editor)

[†] A 2002 report from International Data Corporation predicted that by 2005 e-learning in Mainland China would be worth US\$60 million and that the annual growth rate for e-learning during that period would be greater than 40%; see the March 2002 report "*The eLearning Market in Asia-Pacific*," at <http://www.apconnections.com/perspective/02-March.html>.

[‡] Interestingly, the number of enrolments had already reached 19 million in 2003, according to the 2003 MOE Statistical report; see <http://www.moe.edu.cn/edoas/website18/info5515.htm>. In 2004, enrollments exceeded 20 million students and recruitments of 4.2 million students were about 4 times the rate from 1998; see the report from the China Research and Education Network (CERNET) at <http://www.edu.cn/20041208/3123816.shtml>.

[§] Huang and Zhou (in press) note that this sharp increase in enrolments combined with situational factors such as SARS, especially in the first half of 2003, created an environment ripe for experimentation

Since 1999, the Ministry of Education (MOE) of China has authorized a total of 67 universities to offer Networked-Based Distance Education programmes (NBDE).^{*} The universities selected are all leading universities; each of them established a special institution of online distance education to take exclusive charge of their networked-based higher education programmes, offering primarily degree/diploma based distance education and delivered via the Internet or their private network in conjunction with other media.

The approach of networked-based education in Chinese universities is described as the “wall-crushed university” by Chinese people. In the past five years, the Chinese Ministry of Education (MOE) has realised that the education of only the “prime” students (the elite) could not meet the demands of social development and the updating of knowledge to the general population. This situation implies that China must develop education of the general populace and lifelong education (as above-mentioned points). Chinese higher education institutions began to recruit more students on-campus in recent years, even though many students still could not attend the higher education courses because of the finite limits on teachers, facilities, residence halls, etc. Thus, the question was: how to develop the higher education of China so that more and more students could attend a university’s courses?

With the development of Internet technology, the schools of networked-based Chinese universities began to offer all kinds of higher education services.

In 1997, Hunan University began to develop networked-based distance education.

In 1998, Tsinghua University began to deliver postgraduate courses.

In 1999, these above-mentioned two universities together with Zhejiang University and the Beijing University of Post and Telecommunications were authorized by the MOE as the first batch of experimental networked-based universities in China.

Although the evolution of this concept has come very far, many people still can only imperfectly perceive the advantages of networked-based distance education. Some older members of the families of students still oppose these instructional methods of networked-based education. They raise questions such as: “There is not a teacher in the classroom, is this instructional activity?”, “Does the diploma of the networked-based distance education get accepted by the national council and employer?”, and “What is the difference for the diplomas between networked-based distance education and the traditional Radio and TV University?”

with forms of e-learning, and in particular, blended learning. See Huang, R., & Zhou, Y. (in press), “Designing blended learning focused on knowledge category and learning activities – Case studies from Beijing Normal University”, to appear in C. J. Bonk & C. R. Graham (Eds.) *Handbook of blended learning: Global Perspectives, local designs*, San Francisco, CA, Pfeiffer Publishing.

^{*} In the year of 2004, 68 universities were authorized for NBDE programmes. However, in the year of 2005, only 64 of them are allowed to enroll students. This reduction suggests that there are some recent problems during this experiment or perhaps some of the authorized universities are not yet ready for e-learning. See <http://www.moe.edu.cn/edoas/website18/info3623.htm> and <http://gaokao.chsi.com.cn/gkxx/zcdh/200504/20050407/10990.html>. In 2004, enrollments exceeded 20 million students.

On the other hand, there is no blackboard, chalk and teacher in the school of networked-based distance education, but only the internet and courseware. Students will learn their courses according to the schema of self-learning; they can freely view any web page of any course, and most of them are inclined to think that learning is an interesting thing.

As a new phenomenon of instruction, the development of networked-based distance education is also dependent on the social context. From the survey returns of 40 employers in Beijing concerning the work status of graduate students, the diploma of networked-based distance education has been identified by most employers as similar in esteem to the diploma of the traditional university. But some national institutions and the national corporations are less sure of the value of the diploma of networked-based distance education than some local companies and foreign capital corporations are.

Thus, networked-based distance education needs to control the quality of networked-based courses; it is a main task in the development of distance education.* To ensure the quality of distance education, the MOE decided to accredit 67 key universities as experimental networked-based distance education institutions. One of the officers said: "We are sure these key universities should attach importance to their credibility."[†]

1.2 The Model of Network-Based Distance Education

At present, the instructional model adopted by the universities in network-based distance education can generally be divided into two sorts: distance *teaching* mode and distance *self-learning* mode.

* According to Zhang (2005), not only is it a quality control issue here: distance education, through correspondence or online, has always been questioned about its credibility in China. In a personal communication of May 2005, she noted that the same is true in Taiwan. But the government in Mainland China has been consistently supportive, whereas she notes that in Taiwan the policies are more contradictory. See Zhang, K. (2005), "China's online education: Rhetoric and realities" in A. A. Carr-Chellman (Ed.), *Global perspectives on E-learning: Rhetoric and reality*, 21-35, Thousand Oaks, CA, Sage Publications.

[†] In a recent conference presentation, Zhang and Hung (2005) critically reviewed e-learning in Taiwan's higher education system, focusing on policy, practice and problems. They noted that the scepticism about distance education is typical in Chinese culture, in part, due to the fact that non-traditional students who take distance education courses do not have to go through the annual national college/university entrance exam, which is highly competitive. They argue that because students do not have to go through the entrance exam, the resulting student body in distance education is generally considered of lower quality, and, thus, people perceive distance education as a much easier alternative to traditional higher education. Interestingly, they also point out that although it is much easier now to pass the entrance exam, and e-learning is often associated with high-technology courses and occupations, which are highly valued, the perceived quality and credibility of distance education has not yet changed much. See Zhang, K., & Hung, J. (April, 2005), *E-learning in Taiwan: Issues with Technology*, paper presented at the Annual Meeting of Chinese American Educational Research and Development Association, Montreal, Canada.

Distance Teaching Mode

This mode can simply be described to be: the live broadcasting room *plus* self-learning online, online discussion, questions and answers (Q&A), and tutorship off-campus.*

Through the communication satellite or two-way interaction of videoconference systems on the Internet, the universities broadcast real-time teaching by the teacher in the classroom. Non-traditional students gather together in a local learning centre, attending the lessons in the multi-media class-room, and watching the teacher's real-time lecture on the projection screen. The students may ask their questions to the teacher through the satellite equipment or video "net meeting" system. So two-way teaching and learning can occur and foster real-time information exchange.

In the multi-media classroom, students can access the distance teaching Web site of the university on the Internet, order courseware, browse learning materials, test themselves online, discuss online more extensively with the other classmates and teachers, use a bulletin board system or email to ask questions and get answers, hand in schoolwork and consult the learning information.

Each local learning centre is responsible for the regular face-to-face teaching, and guiding the students to complete the learning practice, do semester examinations and graduate dissertation and thesis work.

This mode is used widely in the distance education systems of Chinese universities such as Tsinghua University, Beijing Normal University, Shanghai Communication University, Southern China University of Science & Technology, and Central Radio & Television University.

Distance Self-Learning Mode

This mode can simply be described as: self-learning courseware, discussion and question and answer online, and tutorship off-campus.

The university records the teacher's real-time lecture into the audiovisual courseware, the teacher makes CAI courseware according to the teaching content and explanatory logic, and records the courseware on a compact disc – this is distributed to various local teaching centres, or to the students directly through the postal system. Students can gather together at the local learning centre to study the courseware – they can also order the courseware to study at home via the internet. Basically, students can self-study using the courseware and teaching material so as to complete the study task.

The local learning centre also regularly gives face-to-face question and answer teaching to the students, arranging teaching practice, handling semester examinations and guiding the graduation dissertation.

* According to Zhang (2005), this model can be traced back to the CRTVU/Dianda system since the 1960s. See Zhang, K. (2005), "China's online education: Rhetoric and realities", in A. A. Carr-Chellman (Ed.), *Global perspectives on E-learning: Rhetoric and reality*, 21-35, Thousand Oaks, CA, Sage Publications.

Universities adopting the mode of distance self-study include the Chinese People's University, South-east University, Beijing Foreign Studies University, etc.

The two modes are generally used in a mixed instructional system, but the distance teaching mode demands a higher level of hardware environment for the distance education than the distance self-learning mode.

1.3 Network Learning Environment

The Network Learning Platform

Almost each university which provides NBDE has developed its special platform (software system) to support its distance education, in term of the different instructional programmes. Each platform of the NBDE universities is somewhat different. The main function of each platform is to support multimedia real-time interaction, non-real time interaction instruction and distance education administration. The platform is developed in line with the relevant criteria of technology standards and the platform provides different functional zones to different consumers, e.g. students, teachers, administrators. The technology features generally depend on the specific instructional techniques but typically include: bandwidth automatic adaptation; online courseware management; copyright encrypted protection; online expressions input; online phonetic transmission; Chinese internal statement number (ISN) automatic transformation; online whiteboard instruction; multi-platform technology; information compression for transmission, etc.

These platforms were developed by the universities themselves or in cooperation with a partner, often a professional technical company. Some of these companies are multinational, with abundant foreign capital and powerful technology.

The Course Delivery Systems

A "3-network collaboration" mode was generally adopted by most NBDE universities in Chinese higher education: Internet network, satellite digital network, and cable TV network in combination. In China, these three network systems jointly have coverage through the country.

The network system of communication satellite can provide live broadcast and non-real time audio-video broadcast. Teaching materials are included: both audiovisual and live broadcast of teaching. This is a modern distance education, multi-media transmission platform of satellite broadband with the additional function of two-way interaction.

The Internet network delivers the courses via the public telephone network, or the ISDN network (often also used for video conferencing). This Web-based learning setting supports question and answer, online discussion, bulletin boards, Web courseware download, and email communication, thus supporting real time interaction and non-real time interaction on the Internet.

More recently, at the beginning of 1999, the MOE embarked on a special project of The National Program of Modern Distance Education (NPMDE). The major contents of NPMDE include two parts, one of them is the construction of a hardware environment, namely, to establish a professional network system on the internet: this is the network system named the Chinese Educational Research Net (CERNET).^{*} Depending on the national backbone, the bandwidth of the network is up to 34 Mbps.[†]

The CATV broadcast network is a closed-circuit television system, which delivers from the teaching station the audiovisual courseware to students gathered together in local learning centre (where they also receive face-to-face tutoring)

Online Courses and Resources

The other part of the NPMDE project is to establish resource databases in order to provide extensive coverage of the instructional area with complete functionality. Resource databases include the resource information centre of the central distance education agency, the databases for subject species, regional resource databases and school resource databases.

Material in these resource databases includes: teaching programs, examination guidance, textbooks, audiovisual resources, CAI courseware, network courseware, etc. This supports a modern distance educational paradigm and a well-managed service.

1.4 Learners

There are 67 universities which are developing network-based distance education in China. More than one million students attend network-based distance educational courses.^{‡*}

^{*} For information in English on CERNET and related educational topics (including distance learning) see <http://www.edu.cn/HomePage/english/>.

[†] CERNET2, the second generation of CERNET, was deployed in 2004. CERNET2 is helping move China from follower to leader status in terms of next-generation Internet networks. Its maximum bandwidth is presently 2.5 to 10 gigabits per second which is a substantial increase over CERNET. Twenty-five universities in 20 cities presently connect on the CERNET2 at a speed of 1 to 10 gigabits per second; see http://www2.chinadaily.com.cn/english/doc/2004-12/27/content_403512.htm.

[‡] The number of enrolments of NBDE is about 2.5 million. See <http://www.edu.cn/20041124/3121889.shtml>. Huang and Zhou (in press) also note similar trends. They also point out that the over 2 million registered students are served by 13,540 teachers distributed in about 2,790 learning centres throughout China. See Huang, R., & Zhou, Y. (in press), "Designing blended learning focused on knowledge category and learning activities – Case studies from Beijing Normal University", to appear in C. J. Bonk & C. R. Graham (Eds.), *Handbook of blended learning: Global Perspectives, local designs*, San Francisco, CA, Pfeiffer Publishing.

A survey delivered from a famous network-based distance educational web site generated responses from over 20 thousand students living in 29 provinces. About 89% of these students are between 21 and 35 years old, implying that young people are the main group of students.

Of all the students who responded, 31% have been in work for only 1 to 2 years; the others are those who have worked for more than 3 years. Thus, not only young people but also somewhat older people seem to need life-long education. In China, some even believe that the best approach to life-long education is network-based distance education.[†]

Looking at the regional distribution of students, 95% of persons live in a local capital (of the province or county). A noticeable proportion is the 15% of persons who live in the local capital of a county (not of a province); this was a much lower proportion even a year earlier. The increase implies that the students who attend network-based distance education are now distributed in a vast area, and the local learning centres are now established in many more remote areas. Most students who attend undergraduate courses would like to gain a bachelors degree, but this is not the only purpose to attend distance education; other important purposes include developing expertise in one's profession.

These non-traditional students are normally admitted on criteria based on a mixed system of free admission and entrance exam admission. They are given a flexible time span for their course study.

Most of these distance educational institutions adopt a credit system based on different lengths of study, depending on the online program pursued by students.

The students who attend distance education in these universities are divided mainly into the following five types according to the difference of the degree and diploma.[‡]

Advanced Studies of the Graduate Courses

Students attending graduate courses must already have the academic degrees of undergraduate and above granted by the ordinary colleges or universities, or by the Adult Education Universities. The universities will look at the students' school status to decide whether to exempt them from the examination for enrolment. After obtain-

* Given the explosion of online learning growth in China during the past few years combined with the forecasted distance education needs, it is not too surprising that WebCT, a key e-learning and learning-management system (LMS) vendor, announced it that was establishing an office in Shanghai and more extensive presence within China. At the time of this announcement (March 15, 2005), they already had 25 universities in greater China among their customers. (see press release <http://webct.com/service/ViewContent?contentID=25484014> and <http://www.offshoring-digest.com/item/135840.html>). Such a move may counter the trend of each NBDE university having its own special platform, as was mentioned earlier in this report.

† Most experts would find that position rather extreme, while accepting that NBDE can play a key role in lifelong learning.

‡ In 2005, MOE instructed the authorised universities to focus their attention on continuing education for people with jobs. See <http://gaokao.chsi.com.cn/gkxx/zcdh/200504/20050407/10990.html>

ing enough academic points, the students who take an elective course for the post-graduate degree can then enter the paper writing stage. Those students who passed their essay can apply to the National Academic Degree Office for the degree of graduate student, with an equivalent educational level to that obtained by the conventional route.

Currently, only Tsinghua University, Beijing University of Science & Technology and Shanghai Communications University are able to afford to provide distance education at this high academic level.*

Undergraduate Courses for Students with a Two-year College Qualification

Student attending undergraduate study on this route must already have obtained the diploma which is awarded by the government via a two-year college in the relevant speciality; at the same time, the students must attend an entrance examination organized by the universities. Provided that they are qualified (have matriculated), they can be enrolled. The certificate of diploma will be awarded after the student has finished their set academic points, so long as their record is eligible; those who have attained a degree qualification will be conferred with the relevant certificate of degree.

Some 92% of the universities are entitled to offer distance education of this type.

Undergraduate Courses for Students with a Senior High School Qualification

Senior high school graduates who attend the undergraduate courses of study should commonly participate in the national entrance examination in the same year; their enrolment will depend upon the local grade boundary line. Students who graduated in previous years and the two-year college students also need to attend the entrance examination organized by universities. The certificate of diploma will be awarded after a student has finished their set academic points so long their record is eligible; those who have attained degree qualification will be conferred with the relevant certificate of degree.

The Three-year Courses of Ordinary Technological Academy

Students attending this kind of diploma education get an education basically identical to that of studying undergraduate courses with the starting point of senior high school. The only difference lies in obtaining the “certificate of special subject” when the students graduate from the school.

* There may be other universities who were offering distance graduate education at that time such as Beijing University (also known as Peking University), which began to offer distance graduate education in year 2002. See: <http://www.pkudl.cn/zszl/zsjz/zsjz.htm#aaa>.

Courses of the Second Bachelors' Degree

Students wishing to take a second bachelors' degree must already have obtained a relevant certificate from one of the conventional colleges or universities, or from the adult education universities, or have some higher qualification. The distance education universities will exempt students from having to take the examination for enrolment, depending on their record of study.*

1.5 e-Learning Costs

When experts discuss the costs of e-learning in Chinese universities, they often focus on the tuition fees of NBDE paid by the students, because the tuition fee is the main source of the benefits to the NBDE universities. As the student's performance evaluation system is based on credit hours, the tuition fee of NBDE is also based on the points of the credit hours which are gained by the student.

However, the costs are different in different regions, partly because of the unbalanced economic development in China. Tuition fees are determined by a complex mix of national, municipal and institutional policies, varying by location and institution, and also often differentiated by subject.

For example, the region which has the highest cost for NBDE is the area of southern China. There on average each credit point costs ¥175[†] for the students studying the undergraduate course with the diploma of special school, while each credit point costs ¥200 for the students with the diploma of senior high school. By the time when a student who studies the undergraduate course with the diploma of special school completes all the credit hours, the fee amounts approximately to ¥16,000. But for a student who studies the undergraduate course with the diploma of senior high school, the fee amounts approximately to the much higher sum of ¥36,000.

Shanghai is the area of second highest cost for NBDE: when a student who studies the undergraduate course with the diploma of special school completes all the credit hours points, the fee amounts approximately to ¥16,000. For a student who studies the undergraduate course with the diploma of senior high school, the fee amounts approximately to ¥28,000.

In the Beijing area, the tuition fees for a student studying the undergraduate course with the diploma of special school range from ¥8,000 to ¥10,000. But for a student graduated from senior high school, the fee is around ¥16,500.

The tuition fees in the Western areas are comparatively lower. For a student studying the undergraduate with the diploma of special school is around ¥6,500. For a student

* According to Professor Ke Zhang of Texas Tech University (May 2005, personal communication), in addition to the above mentioned programmes, another type of quite popular e-learning programme in China is related to highly demanded certificate programmes provided through partnership among top-tier universities, well-respected corporations, and certain government agencies. She documented some of these trends in a 2002 conference paper, "An e-learning dot com in China" at the Annual Meeting of the Association for Educational Communications and Technology, Dallas, Texas.

[†] The exchange rate of Chinese Yuan to pounds sterling is roughly 16:1.

graduated from senior high school, the fee is around ¥9,750; each credit hours point only costs ¥65 on average.

This asymmetric distribution of costs is very interesting, but it is a typical Chinese feature, mainly affected by the local economic level.

There are even some colleges and universities who used to charge higher tuition fees to some students with below average entry grades; but this is outlawed by the government.

The other important proportion of costs in Chinese NBDE is the expensive communication fee to non-traditional students.

1.6 Methodology

The purposes of this research are to analyze Chinese NBDE and to find some common features. In this report, I chose the case study as the main methodology.

Since 1997, the Chinese central government and the MOE have sponsored the NBDE project. Up till now, there are 71 colleges and universities that have been chosen as pilot universities.

In this report, I cannot analyze all of these colleges and universities. Therefore, I chose four universities from these colleges and universities as cases. They are:

- Tsinghua University
- Beijing Normal University
- Beijing Foreign Studies University
- China Central Radio and TV University.

They are among the leading universities in the 71 pilots which are organizing and managing NBDE.

NBDE includes many elements which will influence its process. The ideal for this report would have been that all of them would be analyzed and compared. However, this is not a reality due to the natural limitations on time and effort. However, I have found the analytical method of case studies very useful to study the present situation of Chinese NBDE universities.

Through the comparison of different universities, one can learn the main operational systems of Chinese NBDE universities. All universities are similar in some ways, but each university has its specific features and will have a different purpose for its NBDE initiative.

2. Case One: Tsinghua University

The specific initiative we study here is Tsinghua Webschool. The Web site is <http://www.itsinghua.edu.cn>.*

2.1 Introduction

Tsinghua University was established in 1911. Currently, there are 9 colleges and 42 departments included in this university. It is one of the best and most famous comprehensive universities in China. There are 330 million books and magazines stored in the university's library, which is a comprehensive library system. There are 7,178 staff in this university, of which 3,505 people are teachers and 5,267 people are academic staff. The total students comprise 19,939, which can be categorized into undergraduate and postgraduate students (data from year 1999). In the last few years, many international universities and famous companies are cooperating with this university.

At the turning point of the new century, distance education has grown rapidly in developed countries; citizens in China are in great need of education, all of which has accelerated the development of modern distance education in the country. In February 1996, President Wang Dazhong first proposed the concept of developing modern distance education in China. The objectives were to establish Chinese modern distance education network to be multi-specification, multi-hierarchy, and multi-function by 2010.

In November, the Office of Directing Universities and the Office of Postgraduates in the former National Education Committee gave approval that Tsinghua University could launch their pilot project of modern distance education. In September 1997, the core system was already nearly complete, with the provision of almost ten courses and some lectures and the establishment of more than ten off-campus teaching stations.

In November 1997 and November 2000, Vice Premier Li Lanqing inspected the work of distance education in Tsinghua University twice and gave very important instructions for the development of distance education in China.

In 1998, the system of distance education in Tsinghua University received generous contribution and support from Mr Cao Guangbiao of Hong Kong Yongxin Corporation, which has facilitated the smooth establishment of the system.

In 1999, the Education Ministry approved that Tsinghua University could extend its pilot project in modern distance education to a nationwide roll-out.

Conforming to the instruction of the Education Ministry that before 2010 China should have the most modern distance education network (with Chinese features, multi-standards, multi-levels, multi-forms and multi-functions), distance education in Tsinghua has continued to combine internet, satellite digital network and cable TV together. Up till now, 98 off-campus teaching centres have been set up in 30 prov-

* The Web site does not appear to have any content in English. However, the main Tsinghua University Web site does have an English section, at <http://www.tsinghua.edu.cn/eng/>.

inces, municipalities (directly under the central government) and autonomous regions.* The distance education network system has been set up all over the country with appropriate use of the three networks (satellite, Internet, cable).

In July 2000, Tsinghua Webschool was established. This is the teaching and administration platform of distance education. It has taken full advantage of the network to develop on-line teaching. Now more than 50 on-line courses have been provided. The students of the distance education programme can register, select courses, ask questions, download course wares and hand in homework in an on-line "lyceum". At present, there are more than 10,000 students in the lyceum and the number of hits amounts to more than 500,000 since its establishment. Furthermore, on-line teaching and administration of teaching affairs have also been brought about.

Distance education in Tsinghua University is an integrated system, including computer network, satellite-based digital network, and cable television broadcasting network. At present, there are established 98 instructional centres outside of the university, which are distributed all over the country. In other words, a pilot distance education system is already in existence in Tsinghua University.

2.2 Learning via Distance Education

Classes for Advanced Studies at Postgraduate Level

These classes cover: Business Management, Computer Application Technology, and Civil and Commercial Law. Now Tsinghua has 35 on-line classes and more than 4,500 online students.†

Adult Continuing Education

Beginning in 2000, Tsinghua started to enrol students who graduated from the two-year college system to study for their bachelors' degree. Now there are six majors: Economics, Law, English, Art and Design, Environmental Art Design, and Garment Art Design.‡

Table 1 (on the next page) describes a schema of one term of courses (spring 2003) for adult continuing education.

* As of May 2005, there were 114 teaching centres. <http://www.itsinghua.edu.cn/website/jxz/zdyl.htm>.

† In 2005, a new class called Education Economics and Management was also being offered, <http://www.itsinghua.edu.cn/website/wdxt/xytd/kcjs.htm>.

‡ In the year of 2005, only four majors are offered through distance education: Economics, Law, English, and Art and Design; see <http://www.itsinghua.edu.cn/website/wdxt/xytd/kcjs.htm>.

<i>Serial number</i>	<i>Course number & Appellation</i>	<i>Period (hour)</i>	<i>Instructional technique</i>	<i>Student type</i>
1	3004 Higher mathematics	48	Satellite live broadcast	Economics first-year
2	3005 Numismatology	48	CD-ROM courseware, live broadcast	
3	3006 Computer language	48	CD-ROM courseware, live broadcast	
4	3010 Database principium & application	32	CD-ROM courseware, live broadcast	Economics second-year
5	3011 Probability Statistics	48	CD-ROM courseware, live broadcast	
6	3013 Cameralistics	48	CD-ROM courseware, live broadcast	
7	3014 Administration information system	48	CD-ROM courseware, live broadcast	Jurisprudence first-year
8	3103 Civil law	56	CD-ROM courseware, live broadcast	
9	3105 Copyright law	32	CD-ROM courseware, live broadcast	
10	3106 Code of civil law	48	CD-ROM courseware, live broadcast	Jurisprudence first- and second-years
11	3110 Legal System History of China	32	CD-ROM courseware, live broadcast	
12	3111 Chinese Composition	48	CD-ROM courseware, live broadcast	
13	3112 International Economics	48	CD-ROM courseware, live broadcast	Jurisprudence second-years
14	3113 Economics Law	48	CD-ROM courseware, live broadcast	
15	3205 Synthetic English	60	CD-ROM courseware, live broadcast	English first-years
16	3206 English Audition	48	CD-ROM courseware, live broadcast	
17	3208 English Compensation	48	Live broadcast	
18	3213 Advanced English	60	CD-ROM courseware, live broadcast	English second-years
19	3214 Advanced Audition	48	CD-ROM courseware, live broadcast	
20	3215 English Audition	32	CD-ROM courseware, live broadcast	
21	3212 English-Chinese Translation	48	CD-ROM courseware, live broadcast	
22	3211 English-Chinese Colloquial Translation	48	audiovisual broadcast (not live)	
23	3223 French	48	Live broadcast	English beginners
24	3224 UK & US literature	48	Live broadcast	
25	3225 Chinese Culture Conspectus	32	Live broadcast	
26	3226 Philology Conspectus	32	Live broadcast	

27	3503 Data Structures	64	CD-ROM courseware, live broadcast	Computer technology & practice
28	3504 Microcomputer technology	48	CD-ROM courseware, live broadcast	
29	3505 VC++ Object & Video Program Design	48	Live broadcast	
30	9004 Commonality English	60	CD-ROM courseware, live broadcast	Non-English first-years
31	9003 Theory of Deng Xiaoping	32	CD-ROM courseware, live broadcast	All specialties first-years

Vocational Training Education

Two courses, Business Administration and Information Technology, are offered to staff in some companies in Beijing who do not have enough time to study on campus.

Students in these courses number more than 8,000. Other courses are also provided, including: Management, Information Technology, Art and Design, English, Teacher Training, Architecture, and Materials.

The objective of this programme is to share the university's excellent educational resources with society and to strive for training one million persons per year.

2.3 Network Learning Environment

Network Learning Platform

With the development of information technology and network technology, modern distance learning technology in Tsinghua University has become highly developed. By now the nationwide transmission system of distance education (comprised of Internet, satellite digital net and cable TV network) has nearly been completed.

The platform can transmit Tsinghua's courses at the speed of 6 Mbps on a Ku-band satellite channel, and provides the means for both real-time communication and non-real-time communication. The platform can realize real-time communication either by using the satellite VSAT* station to set up a two-way virtual classroom, or by using video telephony over ISDN to process the discussion and answer questions.

Through the Internet, the platform does not only support on-line learning, including asking and answering questions, but also provides the functions of distributing information on-line, courseware download and email service. Through the cable TV network, courseware can be transmitted to innumerable homes at very high speed.

* VSAT is short for Very Small Aperture Terminal – basically a satellite dish used for reception and often also for transmission (back to the satellite).

Learning Approach

The overall model is Web-based distance learning combined with face-to-face tutoring. The distance learning uses Internet-based resources combined with printed-based materials, self-learning and group learning using online discussion and Q&A, asynchronous interaction with email and bulletin board systems, and synchronous interaction with ISDN and/or VSAT videoconferencing.

Specific teaching and learning methods can be adopted by staff in each local off-campus learning centre.* All the local learning centres are operated directly by Tsinghua University. This means that the courses, instructional programmes, teaching material, examinations, and the qualification are the same. The face-to-face tutoring is charged for by the local learning centres.

Network Learning Process

The overall network learning process comprises four steps, as follows:

- Admission
- Enrolment
- Choose courses and make Learning Plan
- Attend class (two methods).

Local Learning Centre

The local learning centre can provide learners with courseware, video material, face to face tutoring, topic discussion, and test preparation.

Network-Based Study

Learners can use videoconferencing, broadcast courses, question and answer online, bulletin board systems, and email when they are engaging in the learning process and communicating with other participants.

Their learning performance can be assessed by their accomplishing schoolwork (assignments), carrying out experiments, surveys, practice, testing, a dissertation, and, finally, a competitive examination.

* Doris Lee (2004) argues that Web-based instruction fosters a different type of pedagogy and learning model that has been the norm in China. Instead of passive, rote learning from teachers in an information and test-cantered curriculum, e-learning encourages a constructivist approach where students are more engaged in their own learning and must be more self-reliant and personally solve real-world problems. She argues that teachers in China need to realize that their role in learning is changing. See Lee, D. (2004), "Web-based instruction in China: Cultural and pedagogical impressions and challenges", *Educational Technology Research and Development*, 52(1), 101-104.

Learning Resources

Learning resources in the network-based learning environment include teaching programs, examination guidance, textbooks, video-tapes, CAI courseware, network-based courseware, and web-based tutoring. These learning resources need not be provided in every class, but subsets are provided according to the course characteristics of the students and the instructional requirements.

2.4 WMDEUP – Network Learning Platform

The learning platform used for Tsinghua Webschool is WMDEUP (What Modern Distance Education Universal Platform). This is developed by the company Wh@ty (<http://www.whaty.com>).

Brief Introduction to the Platform

The main function of the WMDEUP platform is to support multimedia real time interaction, non-real-time interaction, and distance education administration. The platform can simulate instructional processes. It was designed to remedy the shortage of traditional face-to-face education in China by providing tools for tracing, calculating, and analysing a student's instructional progress and results in the distance learning situation.

The platform is divided into three communities or zones according to each different kind of users: (1) the student's learning zone, (2) the teacher's working zone, and (3) the educational administration zone.

Features

Before the platform was developed, the members of the development team analysed many distance education platforms. In addition, they also carried out an in-depth analysis of network-based distance education in the Chinese setting.

Nine technology features are integrated into the new version of WMDEUP, which are listed as follows:

- Bandwidth automatic adaptation
- Online courseware management
- Copyright protection via encryption
- Online expression input
- Online phonetic transmission

* However, there is no material in English at the Web site.

- Chinese internal statement number (ISN) automatic transformation
- Online whiteboard instruction
- Multi-platform technology
- Information compression for transmission.

Platform Run Setting

Java technology is used in the WMDEUP platform. Java programs can be run in multiple systems and can be transported to different systems. Therefore, this platform could be run in current mainstream operating systems, such as Windows NT/2000, Linux, and UNIX. The database technologies of SQL Server and Oracle are chosen to develop databases in this platform. Different “application server” systems, such as Resin, Web logic, and Websphere, are also used in WMDEUP.

As regards the hardware, the WMDEUP software can be run on various servers, thus giving a range of different performances. The different configuration of the web server and database server can be easily chosen in terms of the different purposes, and different investment.

The developers claim that the flexibility of the WMDEUP system is that it can be used in various configurations – it does not need to be limited by other software and hardware – thus users can develop sustainable solutions for distance education from lower to higher performance in terms of their present and future budgets.

Courseware-on-Demand Platform

Features of this part of the overall system include:

- User management: including two types of identities – students and administrators
- Course management: all the courseware can be chosen, added, deleted, and amended by the administrators
- Learning resource management: all the courseware resources can be organized and managed
- Student management: the set of courses-on-demand orderable by students can be managed by administrators.

The course-on-demand platform is the “B/S structure webplatform”; it is developed using JAVA and XML technology. Therefore, there is no special requirement on users except to have one computer with Web browser which can access Internet.

Regarding the server, only one courseware (Web) server and one streaming-media server is needed. If there are a large number of courses, there might be a need for an additional courseware server.

Since the course-on-demand platform of WMDEUP system order platform is developed using Java web technology (JSP), the developers recommend the use of web servers with Resin and Websphere technology on the database side. In terms of the amount of users to support, the platform provides two versions: Oracle for large numbers and MySQL for smaller numbers. Currently, a new version is under development which does not need a specific database system.

WMDEUP Courseware Design Platform: Professional Version

This provides screen capture and video collection. The platform supports the integration of audio-visual and screen resources with the teaching. It supports immediate viewing based on a Web browser and the ability to record video on CD.

WMDEUP Courseware Resources

The Wh@ty Company is a professional developer in the network educational system field, both for instructional support and for instructional resources design. It serves not only the elementary education system but for the advanced education system.

Many courseware development contracts were awarded by the courseware competition hosted by the Ministry of Education (MOE) and caused a strong influence on all kinds of schools in the Web-based education field. Wh@ty developed 10 speciality courseware suites for Tsinghua University, including multimedia technology theory and practice, management economics, accountancy, management strategy, accounting theory, higher mathematics, human resource development and administration, administration research, operational research, and “neoteric economics” of China. The courseware on multimedia technology theory and practice was awarded the first-class award by the CIETE national multimedia educational software comparison in 2000.

3. Case Two: Beijing Normal University

The specific initiative for Case Study Two is the School of Network Education, Beijing Normal University. See [www.sne.bnu.edu.cn/].*

Beijing Normal University (BNU) was founded in 1902 as the first teacher-training Institution in China. It is now ranked among the top comprehensive universities in China. The faculties and research centres in BNU cover almost every discipline from arts to sciences. BNU is dedicated to international academic exchange and cooperation. It has established ongoing relationships with over 100 foreign universities and international organizations. Over 10,000 undergraduate and postgraduate students are enrolled, plus 8,000 distance-learning and 10,000 e-learning students.†

* Note that this URL can only be accessed from within CERNET. The URL for users outside CERNET is: www.bnude.com.cn. Note that the main university Web site has a good range of information in English – see <http://www.bnu.edu.cn/eng/>.

† In a paper on case studies of blended learning at BNU, Huang and Zhou (in press), argue that experiments with e-learning in China have not provided the results that were expected. Key factors limiting

School of Network Education

The School of Network Education (SNE) at BNU was established in 2000. It bears the following mission in mind:

- To accelerate teacher education through e-learning
- To promote cultural exchange
- To be a leader in the e-learning trend in China.

SNE's objectives in 2-3 years are:

- To focus on teacher education and training while expanding to other fields such as law and human resources:
- To build up a nationwide business network, thus increasing market share
- To promote international cooperation
- To strengthen its quality management and support systems.

SNE functions as the centre of all operational activities, which include:

- Planning the programs to be offered
- Sourcing suitable lecturers within or outside of BNU
- Organizing the development of e-learning courseware packages
- Transmitting courseware packages to learners and/or to local study centres (LSC)
- Providing managing and counselling services for learners.

The operating model of the e-learning programme in SNE is described in the figure on the next page.

the impact of e-learning in China include the Chinese culture of learning by rote, extensive instructor control, and student discomfort with self-regulated learning. In response, they propose a new model for creating blended learning instruction in China. See Huang, R., & Zhou, Y. (in press), "Designing blended learning focused on knowledge category and learning activities—Case studies from Beijing Normal University", to appear in C. J. Bonk & C. R. Graham (Eds.). *Handbook of blended learning: Global Perspectives, local design*,. San Francisco, CA, Pfeiffer Publishing.

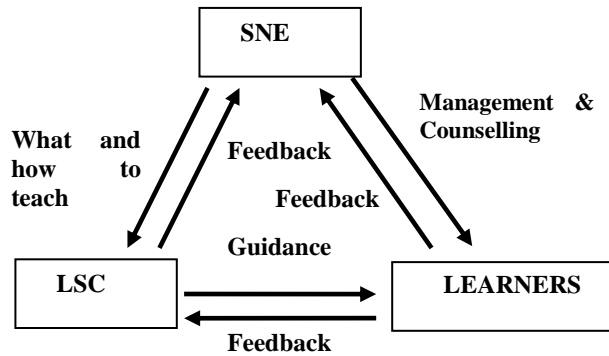


Fig. 1. Operating model of the e-learning programme in SNE.

Local Study Centres

Each Local Study Centre (LSC) is an institution where learners are registered for the e-learning programmes. Each is equipped with PC and multimedia facilities. Each carries out functions such as local promotion, recruitment, exam organization, and also provides certain instructional tasks and technical support for learners. The LSCs form a strategic network of e-learning programme delivery, indispensable operational partners of SNE.

Currently, 55 LSCs have been established across China for SNE. Teacher training colleges account for 35% of these and distance learning institutions for 30%.* Over 10,000 learners are registered, of whom 60% are in-service teachers.

Programmes Offered

SNE is currently running 8 part-time full undergraduate degrees: Chinese Language and Literature; Mathematics; Modern Educational Technology; Education Management; Pre-School Education; Primary Education; E-Commerce; and Business Administration.†

Apart from the subjects above, courses offered include e-business and English language. SNE is actively adding undergraduate, postgraduate and non-degree training programs to its current offerings.

Teaching and Learning Model

This can be described as follows:

- Web-based distance learning combined with face-to-face contact

* As of May 2005, there were 62 LSCs, see <http://www.bnude.com.cn/education/jxzd/zdfb.html>.

† In 2005, an undergraduate major in Law is also being offered via distance education, see <http://www.bnude.com.cn/education/enroll/zsjz.html#7>.

- Printed and electronic materials combined with Internet resources
- Self-study and group study combined with online discussion and Q&A
- Course study combined with special-topic reports and seminars
- Comparison activities and competitions.

Study resources comprise courseware (in two versions, for broadband and for dial-up networks), and online reference and guidance material.

Network Transmission

Like others, SNE is using the “3-network collaboration” technical model for transmission of e-courseware, guiding study, and conducting online tutoring. The three networks are: digital satellite broadcast, Internet and videoconference (over ISDN).

The 3-network collaboration model is shown in the figure below.

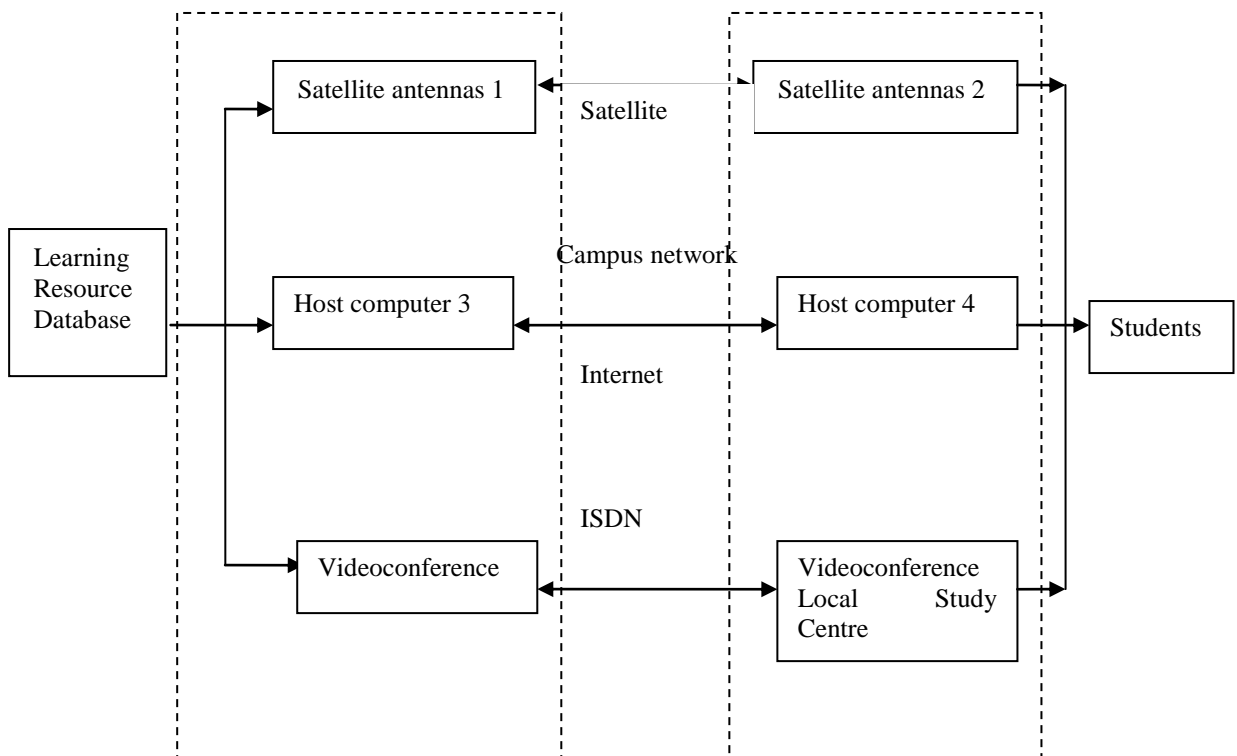


Fig. 2. Details of the 3-network collaboration model.

Learning Process

There is a description of the learning processes for learners. This includes as essential stages: Matriculation, Enrolment, Choose Courses, Attend Class, Local Study Centre Study, Courseware Learning, Site Tutoring, Face to Face Tutoring, Videoconference,

Test Tutoring, Network-Based Study, Course Broadcast, Question & Answer Online, Examination, Graduation (Undergraduate) Thesis.

Two slightly different situations will be found when learners graduate, depending on whether they have a qualification in English: Diploma of Graduation (Full Credit points) and Diploma of Degree (Full Credit points and National 4 Grade English Examination).

The instructional model is show in the figure below.

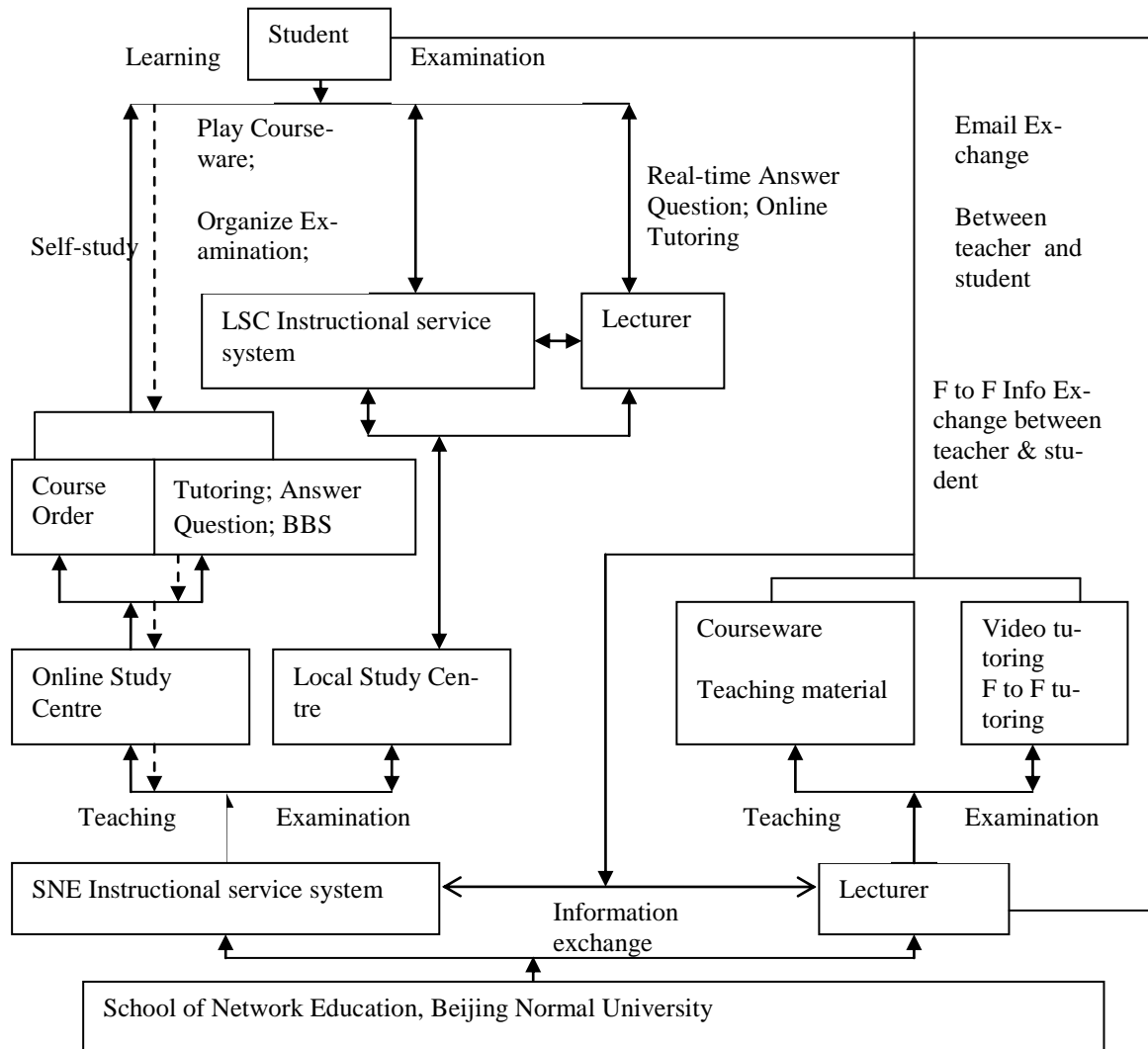


Fig. 3. Instructional model.

Quality Assurance

Strict quality standards and management mechanisms have been built up in SNE and are continuously improving. A periodic self-check and reporting system is compulsory for each local studying centre. Government support and supervision is also an indispensable part of the whole quality assurance system.

4. Case Three: Beijing Foreign Studies University

The specific initiative for Case Three is the School of Network Education, Beijing Foreign Studies University. For details see <http://www.beiwaionline.com>.*

4.1 Introduction

Beijing Foreign Studies University (BFSU), founded in Yan'an in 1941, was the first institution of higher education in China specializing in foreign language studies. It is one of the key universities directly under the control of the Ministry of Education. The university is located in the Haidian District of Beijing where most key institutions of higher learning are gathered. With the Third Ring Road going right through the university, transport is very convenient. The total area of the campus is just over 300,000 square metres.

At present, the university has eight language departments, seven schools and three research institutes. The university offers 31 languages and is the number one university in China that offers such a wide variety of foreign languages. Now the university has one postdoctoral programme (foreign languages research), seven Ph.D. programs, twelve MA programs and a state-approved key point program. The University has a teaching faculty of about 540 members, 290 of whom are professors or associate professors and 165 lecturers. All of them are scholarly, experienced and conscientious. Each year about 70 foreign experts and teachers are invited to teach in the university. There are more than 4,000 degree students at present.

The university actively conducts international academic exchanges and has established cooperation and exchange agreements with over 160 universities and institutions in more than 40 countries and areas.

As early as the 1950s, the university started to enrol overseas students. Each year there are about 1,000 long-term and short-term students from more than 30 countries studying at BFSU. In the course of its development over the years, the teaching has gradually acquired many distinctive features. Meanwhile the variety of languages taught at BFSU offers a unique language environment for both Chinese and overseas students in which to master their target languages. BFSU is trying to further improve the learning and living conditions so as to offer students a more friendly and comfortable environment on campus, aiming to develop the university into an internationally respected institution.

School of Network Education

BFSU is the first university which is authorized by MOE to engage with network-based distance education for foreign language teaching. The School of Network Education belongs to the BFSU, and is dedicated to the instruction and research of distance education. In the past two years, it has cooperated with over 40 universities in

* For material in English see <http://www.beiwaionline.com/english/>.

the country to establish tutoring centres of foreign language and local learning stations; now the distance educational students number over 7,000.

4.2 Network Learning Environment

The Features of e-Campus

In School of Network Education, Beijing Foreign Studies University, the main features included in their e-campus are: Online Application, Placement Test, Online Registration, e-Class, Course Orientation, Course Study, Process Monitoring, Course Assessment, and Certificates.

There are three modes of teaching and learning:

- Online learning and teaching: learning and teaching through e-Class online, online communication between the students and their e-tutor, phonic-chat through the VOB with classmates or e-tutor, doing exercises online using the web-based courseware.
- Online learning and face-to-face learning: online learning when students have no time to take part in face-to-face instructional activity (a flexible learning model).
- Teaching and Learning in the local learning centre: students go to the local learning centre, get the tutoring, and obtain personalised service.

Forms of Courseware

The online English learning of BFSU is delivered by the Internet and CD-ROM; all the courses are provided with both networked courseware and CD-ROM courseware.

The courseware has a standard structure: Objective; Warm-up; Activity; Review; Self-test; Reference. The activities include learning tasks – every task is structured with the introduction, content, exercise and feedback.

Assistance functions include learning tools, graphic calculator, print facility, help, font size adjustment and translation between Chinese and English.

Additional to the courseware in the e-class, there are also bulletin, schoolwork, system administration and interactive functions. The system administration of students includes individual information management, individual material management, learning planning management, course programme management, achievement management, and individual account management.

The interactive functions of students includes: tutoring online, BBS, group learning, messages, and email.

Learners

Courses are offered appropriate to the types of students who study with network-based distance education. Students who register for study can be categorised into three types:

- 1) Students who have obtained the diploma of a two-year college qualification, and who want to get the bachelors' degree
- 2) Students who have graduated from senior high school and who attend the undergraduate courses study
- 3) Students who want to get the diploma of two-year college qualification only.

4.3 Learning Issues

All the units of every course have a standard structure as earlier noted. Tutoring is provided for every course, for several purposes: answering student's question and disabusing them of mistakes, guiding the learning method, course tests, distributing the schoolwork (assignments), and marking the schoolwork. The tutors directly communicate with the students through the VOB chat room.

Course Analysis

In this part, I will analyse a course: Advanced English. The purpose is to exemplify how to offer course in this university via the network.

Advanced English (primary level)

English Phonetics (2); Comprehensive English I-II (10); Interactive English I-II (4); Enrichment Reading English I-II (6).

Total credit hour points: 20+2.

Learner: students who graduated from the senior high school.

Advanced English (secondary level)

English Composition I-II (6), Comprehensive English III-IV (12), Interactive English III-IV (7), Enrichment Reading English III-IV (9).

Total credit hour points: 34.

Learner: students who has obtained the CET-4 level qualification.

Advanced English (high-level)

English Composition III-IV (6), Comprehensive English V- VI (20).

Total credit hour points: 26.

Learner: students who has obtained the CET-6 level qualification.

Advanced English (spoken language I-level)

English Phonetics (2), Comprehensive English I (5), Interactive English I (2).

Total credit hour points: 9.

Learner: students who graduated from the senior high school.

Advanced English (spoken Language II-level)

English Phonetics (2), Comprehensive English II (5), Interactive English II (2).

Total credit hour points: 7+2.

Learner: Freshman or above.

Advanced English (spoken Language III-level)

English Phonetics (2), Comprehensive English III (6), Interactive English III (3).

Total credit hour points: 9+2.

Learner: Sophomore or Above.

Advanced English (spoken language IV-level)

English Phonetics (2), Comprehensive English IV (6), Interactive English IV (6).

Total credit hour points: 12+2.

Learner: students who has obtained the CET-4 level qualification.

Advanced English (composition I-level)

Comprehensive English III (6), English Composition I (3).

Total credit hour points: 9.

Learner: students who graduated from the senior high school, college student.

Advanced English (composition II-level)

Comprehensive English IV (6), English Composition II (3).

Total credit hour points: 9.

Learner: students who graduated from the two-year college.

Advanced English (composition III-level)

Comprehensive English V (10), English Composition III (3).

Total credit hour points: 13.

Learner: students who has obtained the CET-4 level qualification.

Advanced English (composition IV-level)

Comprehensive English VI (10), English Composition IV (3).

Total credit hour points: 13.

Learner: students who has obtained the CET-6 level qualification.

Details

The rate for tuition fee of online courses is ¥150 per point – for example, the English Composition course is 3 points, thus the tuition fee is $¥150 \times 3 = ¥450$.

The starting time is from the first time of using the course; the term is one year.

4.4 Management

The operation model for development of the system was that the School of Network Education cooperated with a professional company, dividing their work appropriately. This was felt to be of benefit to the best use of resources and the control of the market. The partner of BFSU is the Beijing Pacific Century Info-Tech Co. Ltd (Century Yinghua), founded in 2001. This is a joint venture company which has as investors the Foreign Language Teaching and Research Publishing Company (FLTRP), PCCW (Hong Kong),* and one new Internet investment trust, Won-der Vision Co. Ltd. It provides services for the distance education arm of BFSU and its income comes from the fees from the School for the services delivered.

The Beijing Pacific Century Info-Tech Co. Ltd provides technological support and network services, develops the English educational and training market with the BFSU, and creates an extensive and high-level online university operation to teach English.

* This is the famous Hong Kong company originally known as Pacific Century Cyber Works. See <http://www.pccw.com/eng/>.

5. Case Four: China Central Radio & TV University

The specific initiative for Case Four is China Central Radio & TV University. For details see <http://www.crtvu.edu.cn>.*

5.1 Introduction

China Central Radio & TV University (CCRTVU) is a dedicated distance education institution, which offers multi-media university courses through radio, TV, print, audio-visual materials and computer software. It is located in Beijing and is under the direct supervision of the State Education Commission (SEDC). The CCRTVU together with 28 Provincial TV University (PRTVU) organisations was established on 6 February 1979, and the first nationwide transmission of the RTVU courses via China Central TV (CCTV) was on 8 February 1979.

At present this distance education system is made up of the CCRTVU, 44 (up from 28) PRTVUs, more than 690 branch schools at prefecture and city level, 1,600 study centres at county level and 13,000 teaching classes.† The system is run and operated at different levels, both central and local, on the basis of overall planning with the CCRTVU as its centre.

5.2 The Responsibilities of RTVUs at Different Levels

The CCRTVU acts in accordance with the needs of economic construction and social development. Its responsibilities are: (1) to offer nationwide unified subjects in degree education, which involves formulation of corresponding curricula and course syllabi; (2) to produce print, audio-visual materials and computer software; and (3) to set up and prepare end-of-term examinations for these courses.

In addition, the CCRTVU is also responsible for the teaching management of the China TV Teachers College, the Central Radio & TV Specialized Secondary School and the China Liaoyuan Radio & TV School. The CCRTVU offers a wide variety of vocational training and continuing education courses at different levels in terms of “open entrance students” and “BA courses” also fall into the CCRTVU’s responsibility. It is conducting evaluation on teaching to ensure teaching quality, training of teaching, technical and managerial staff, and development of distance education research and information. The CCRTVU provides supervision and teaching service for RTVUs (Radio and Television Universities) throughout the country. PRTVUs (the Provincial RTVUs) may offer subjects based on their local needs, formulate the corresponding curricula and course wares and produce print, audio-visual materials and computer software for their own courses. They operate and mark end-of-term examinations set by the CCRTVU for the centrally unified courses and set examinations for their own courses.

* For the English version see the cryptic URL http://www.crtvu.edu.cn/English_crtvu/index_en.html.

† There were 930 branch schools, 2021 study centres, and 22,237 teaching classes as of May 2005. See <http://www.crtvu.edu.cn/topicpage/xitong/?TopicCode=05>.

According to the regulations set by educational authorities and the CCRTVU, PRTVUs draw up detailed rules and regulations for teaching, teaching management, testing and registration.

They are also responsible for student enrolment, awarding degrees, issuing certificates, training teaching staff, conducting research and promoting interchange of experience in both teaching and management. They also provide supervision in teaching and student counselling for branch schools. Branch schools teaching activities in accordance with curricula set by the CCRTVU and the PRTVUs, which involves scheduling tutorials, organizing counselling, assessing assignments, and organizing examinations, laboratory work and field studies. They carry out all the rules and regulations for teaching, teaching management, testing and registration. They oversee formation of classes and teaching administration in study centres. They are responsible for student counselling and may issue certificates. Study centres are responsible for recruiting tutors and teaching staff for non-degree courses, arranging every teaching stage and managing classes as well as student counselling.

5.3 Programmes

The Transmission of the Courses and Programmes

In the early years of its existence, the CCRTVU's courses were transmitted for 33 teaching hours per week nationwide via the microwave network of the CCTV.

On 1 July 1986 China Educational TV (CETV) was founded and started to transmit the CCRTVU's courses as well as three other channels to transmit programmes, mainly the CCRTVU's courses.

At the moment, the total number of programmes transmitted via both CCTV and CETV per year amounts to about 9,000 teaching hours. Meanwhile local TV and radio stations also transmit some of the CCRTVU's courses as well as local TVU's courses.

Courses and Examinations

RTVUs offer mainly two-year or three-year specialized college degree courses, aiming at training applied professional personnel at the grass-roots level, who develop in an all-round way – morally, intellectually and physically – to meet the requirements of socialist construction.

In 1996, the RTVU system altogether offered 529 specialities from 55 disciplines covering nine fields. Since its founding, the CCRTVU has offered 350 courses in 59 specialities from 22 disciplines covering the six fields of natural science, engineering, humanities, economics and management, agriculture and medical science. The CCRTVU has produced more than 1,000 titles of audio-visual teaching materials, including learner's guides and teaching guides as well as over 300 items of audio-visual teaching materials. All the curricula are devised through consultation with eminent specialists and professors. The university is always ready to offer new courses and

subjects in line with the national and local needs of economic construction and social development.

RTVUs offer two- or three-year degree courses with a yearly credit system. The academic year is divided into two terms, each with 18 teaching weeks. The credit is calculated in terms of teaching hours and one credit is awarded for every 18 hours. Including credits given for field study, a minimum number of credits required is 76. A RTVU student must obtain no less than 60% of his/her total credits through courses offered by the CCRTVU.

PRTVUs may set mid-term exams for some of the courses, but end-of-terms for unified courses are set by the CCRTVU and held at the same time through the country. Passing the examination earns the corresponding credit. The student who has completed the specified courses, obtained the total credits required and been assessed as morally qualified can be granted a certificate of graduation. Both the two-year and three-year degree courses are recognized as tertiary education by the government.

The pilot programme of “open entrance students” adopts the credit system, that is any credit gained within eight years will be valid. Once the student has obtained the total credits specified in the curriculum, qualified for practical experience or field study and moral assessment, he/she will be granted a certificate of graduation which is also recognized by the government.

The Continuing Education Programme

The CCRTVU offers a wide variety of vocational training and continuing education courses at different levels in terms of non-degree education.

Since 1986, the CCRTVU has cooperated with more than 40 institutions, including governmental departments, vocational organizations, academic bodies, universities and colleges and large enterprises to run some 60 projects in non-degree education, which has resulted in around four million trainees. In addition, PRTVUs have also offered non-degree education courses with a total number of over 30 million trainees. Two million secondary and primary school headmasters have received training through satellite TV teacher training programmes.

Since 1990, the China Liaoyuan Radio & TV School has developed skills-based practical courses for rural areas and up to now millions of farmers have viewed its programmes.

5.4 Learners

The target students of RTVU degree courses are Chinese citizens with secondary education qualification or the equivalent. The students have to pass the national entrance examinations set by the State Education Commission (SEdC) for either fresh school leavers or for adult higher education. They can study full-time, part-time or in their spare time. Students in continuing education and in other forms of non-degree education who want to extend their knowledge and to upgrade their professional skills are not required to take entrance examinations. They can obtain certificates on graduation. Up to 1996, nearly 3 million students had been enrolled on degree courses with

the RTVU system, from which over 2 million have graduated. The total number of undergraduates at present is 690,000 (including 150,000 “open entrance students” who are not required to take entrance examinations).

Over 600,000 secondary and primary school teachers have completed the satellite teacher training programmes and received diplomas or certificates at either tertiary level or secondary level. Furthermore, around 500,000 in-service adults have followed the courses offered by the Central Radio & TV Specialized Secondary School and received certificates. This category of students following courses at the moment numbers 400,000. The pilot programme of “BA courses” has 3,000 students.

At present, the number of all types of undergraduate within the RTVU system exceeds one million.

5.5 Projects

The CCRTVU is a member of the International Council for Open and Distance Education* and a member of the Asian Association of Open Universities.† It has over the years built up and maintained good relations with other open and distance education institutions and international organizations (e.g. USA, UK, Canada, Australia, Japan, Thailand, India as well as Hong Kong and Macao). Their contacts have provided a valuable forum for discussions and exchanges of ideas and have been of mutual benefit.

The British Council has cooperated with the CCRTVU since 1981 and has sent English language teaching experts to provide assistance in the production of both printed and audio-visual teaching material.

The Japanese government funded the programme to produce Japanese language courses covering trade, science and travelling subjects as a result of cooperation between the CCRTVU and Japan NHK International Inc. In 1995 the CCRTVU, the US-China Distance Education Development Foundation and the San Francisco State University College of Business cooperated to develop and offer three courses on Marketing, Finance and Accounting to RTVU students. After the students have completed the courses, they can obtain the course certificate jointly issued by the CCRTVU and San Francisco State University.

In 1996, the CCRTVU worked with Novell, USA in offering a Novell Network Administration Training Course to the public.

* See <http://www.icde.org/>.

† At last, the AAOU has a Web site – <http://www.aaou.net/>. This confirms that CCRTVU is a member, as are several of the regional TVUs.

5.6 Other Points*

After two decades of effort, the CCRTVU has formed a modern distance education system with Chinese characteristics. It has seven main features and advantages:

- 1) The state government provides the large scale transmitting system via both microwave network and satellite.
- 2) RTVUs can select and invite eminent professors, specialists and scholars throughout the country as main writers and presenters of their courses.
- 3) They can use modern teaching media to conduct multi-media instruction.
- 4) They are responsible for setting end-of-term examinations for nationally unified courses to ensure teaching quality.
- 5) They achieve high efficiency by overall planning, operation at different levels, bringing both central and local initiatives into play and making full use of their systemic potential.
- 6) RTVUs are oriented towards grass-roots units, rural areas, remote areas and minority nationality regions and have established the operational mechanisms to meet the needs of national and local economic development with degree and non-degree education developing hand in hand.
- 7) At present the RTVU system has become an important component in China's higher education. It makes great contributions not only in extending the scale of higher education by training a large number of qualified professional personnel for economic construction and social development, but also in adjusting the disciplines for higher education and improving the imbalance in the geographical distribution of higher education in China.

6. Conclusion

The Chinese Ministry of Education has increased the investment in IT and network-based distance education in recent years. In the present situation of Chinese HEIs, the rapid consumer take-up, a tradition of mass distance learning and state backed e-learning in selected universities, suggests this as a growth area.

We find that almost all the schools of network-based distance education have adopted a 3-network collaboration mode for the communication of information; these three networks are Internet, the satellite digital network, and the cable TV network. This situation means not all the networked courses are studied totally online: the non-

* Hou (2004) recently described a proposal by the China Central Radio and Television University to establish a "public commonwealth support system of e-education" or (PCSSODE) that more effectively meet the distance education needs of China. For a copy of her report, see Hou, T. (2004). Open and public commonwealth support system of distance education (PCSSODE): A practice of supplement quality assurance system of e-education in China. *International Journal of Instructional Technology and Distance Learning*, 1(12). http://www.itdl.org/Journal/Dec_04/Dec_04.pdf

traditional students still need to attend some networked-courses in the local learning centres at the appointed time due to the great difference of information technology facilities in the different regions of China, and the expensive communication fees which must be paid by non-traditional students for their online learning. So this mode of 3-network collaboration plus learning centres is a suitable mechanism for the Chinese approach to network-based distance education.

In some parts of China, network-based education institutions (NEIs) have to adopt a one-way-interaction for instruction, due to poor infrastructure in some parts of the broadband internet and digital satellite systems. At present, the broadband internet is not very general in China – especially in some remote regions – and the digital-satellite system is expensive. So many NEIs have to utilise face-to-face instruction and post all kinds of learning materials such as CD-ROMs, books and tapes to non-traditional students. The direct approach is establishing some local learning centres to support their instructional activities.

Tuition fees are determined by a complex mix of national, municipal and institutional policy, varying by location and institution. Fees are also often differentiated by subject. The average fee, which is about ¥10,000 per year, has risen quite quickly in recent years and represents a significant proportion of institutional income. The traditional university tuition average fee is about ¥5,000–6,000 per year in China; the non-traditional students do not need to pay the accommodation fees, but must pay the communication fees for online learning, these fees are about ¥100 per month. So there are not too many differences in the costs between the traditional universities and non-traditional universities.

The costs of network-based distance education are not cheaper than traditional education, there is not an advantage of costs over traditional education, but rather of convenience for those people who need to work or are not able to access the campus.

7. References

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The Observatory on Borderless Higher Education, 2003, 1: Higher Education in China. See <http://www.obhe.ac.uk>.*

* Only subscribers to OBHE can access the full text of articles.

Appendix A: Further Reading on e-Learning in China

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For additional information see the footnotes to the Report. A more general bibliography of Internet in China, compiled by Randolph Kluver of Nanyang Technological University in Singapore, can be found on the *China-Wired.com* site at <http://www.china-wired.com/field/kluver/bibliography-kluver-2005J25.htm>.

The eChina Programme

The eChina programme, funded by HEFCE, has its own Web site at <http://www.echinaprogramme.org>. This gives descriptions of the overall programme and the five main projects that currently comprise it. Two papers from these projects are of particular relevance to this report:

- “eLearning in China: Recent history and current situation”, by Professor Kang Feiyu, Tsinghua University – <http://www.echinaprogramme.org/downloads/feiyuKANG.ppt>
- “Modern Distance Education in China”, by Professor Zheng Shiqu, Beijing Normal University – <http://www.echinaprogramme.org/downloads/profzheng.ppt>

The University of Nottingham is the leader of the research component of the programme – see <http://www.nottingham.ac.uk/education/centres/crsflp/eChina/>.