How ICT is used in On-line Education School of China University:

Results of the Surveys about China Higher Education

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1. Background of ICT in China
Higher Education
The ICT implement in China higher education started from 1994. *China Education & Research network* (CERNET)

At the beginning, CERNET developed rather slowly

In 1999, the rapid expanding of China higher education: policy of from Elite Higher Education to Mass Higher Education, the increase of new students.

It directly results to the development of ICT use in universities and colleges around the China.
# The Development of CERNET

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Amount of Higher Institutions that have Campus Network and Connected to CERNET</th>
<th>Percentage of China Higher Institutions (%)</th>
<th>Total Amount of Users in CERNET (Ten Thousand)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>10</td>
<td>0.9</td>
<td>0.2</td>
</tr>
<tr>
<td>1995</td>
<td>108</td>
<td>10.2</td>
<td>3</td>
</tr>
<tr>
<td>1996</td>
<td>200</td>
<td>18.9</td>
<td>8</td>
</tr>
<tr>
<td>1997</td>
<td>344</td>
<td>32.6</td>
<td>20</td>
</tr>
<tr>
<td>1998</td>
<td>450</td>
<td>39.1</td>
<td>80</td>
</tr>
<tr>
<td>1999</td>
<td>550</td>
<td>53.8</td>
<td>200</td>
</tr>
<tr>
<td>2000</td>
<td>800</td>
<td>74.6</td>
<td>500</td>
</tr>
<tr>
<td>2001</td>
<td>895</td>
<td>83.5</td>
<td>747</td>
</tr>
<tr>
<td>2002</td>
<td>932</td>
<td>92.1</td>
<td>800</td>
</tr>
</tbody>
</table>
### ICT Infrastructure of China Universities and Colleges (2002)

<table>
<thead>
<tr>
<th>The Conditions of ICT Facilities in China Higher Institutions (%)</th>
<th>All Institutions</th>
<th>Ministry University &amp; College</th>
<th>Province University &amp; College</th>
<th>Community College</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of Faculty Offices Connected to Network (%)</td>
<td>81.6</td>
<td>84.9</td>
<td>81.0</td>
<td>81.1</td>
</tr>
<tr>
<td>Percentage of Classrooms Connected to Network (%)</td>
<td>41.1</td>
<td>40.9</td>
<td>41.8</td>
<td>39.3</td>
</tr>
<tr>
<td>Percentage of Classrooms with Fixed LCD Projector (%)</td>
<td>19.2</td>
<td>20.3</td>
<td>21.0</td>
<td>13.0</td>
</tr>
<tr>
<td>Percentage of Student Dormitories Connected to Network (%)</td>
<td>36.0</td>
<td>47.5</td>
<td>35.1</td>
<td>32.4</td>
</tr>
<tr>
<td>Percentage of Institutions had Wireless LAN (%)</td>
<td>3.6</td>
<td>4.2</td>
<td>3.0</td>
<td>1.3</td>
</tr>
</tbody>
</table>
The Appearance of On-line Education School (OES)

- In 1999, with the authorization of MOE, four China universities founded the first group of OES and began recruiting students at the same year.
- In the first two years, the OES can recruit the students just graduated from high schools. But from 2002, the MOE limited the enrollment scope of OES in adult students.
The Development of OES from 1999 to 2002

<table>
<thead>
<tr>
<th>Year</th>
<th>The Number China Universities that Founded OES</th>
<th>The Total Amount of Enrollment Student in OES (Ten Thousand)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>4</td>
<td>0.5</td>
</tr>
<tr>
<td>2000</td>
<td>31</td>
<td>4</td>
</tr>
<tr>
<td>2001</td>
<td>45</td>
<td>23</td>
</tr>
<tr>
<td>2002</td>
<td>67</td>
<td>60</td>
</tr>
</tbody>
</table>
2. Prototype of ICT use in China University: On-line Education School (OES)
(1) Introduction to the OES
(2) How does the OES use ICT in instruction process?
Introduction to OES

The On-line Education School (OES), is a special separate organization in some China universities:

- It is responsible for instruction activities of all subjects of the university by use of ICT means,
- The OES students need not come to campus for study, they can study at home or at local learning center scattered in various cities.
- Most of the OSE have the right to recruit students and issue special diploma.
Learning Center Outsides Campus (LCOC)

- On-line education means to transmit teaching by network to the OES students around various regions. However, the Internet in most of China regions is not good enough to support the on-line learning, the cost of linked to Internet is high, some students even have not their own computers.

- To solve those problems, the OESs have to set up Learning Center Outsides Campus (LCOC).

- The responsibility of LCOC:
  - Enroll new students for the OES in local area,
  - manage students and organize test
  - Provide network and computer classroom for local OES students
The LCOC Number of Different OESs

<table>
<thead>
<tr>
<th>The Percentage of OESs (%)</th>
<th>The Number of LCOCs Founded by OESs in Different Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2</td>
<td>1-20</td>
</tr>
<tr>
<td>16.1</td>
<td>21-50</td>
</tr>
<tr>
<td>23.7</td>
<td>51-80</td>
</tr>
<tr>
<td>31.8</td>
<td>81-100</td>
</tr>
<tr>
<td>14.2</td>
<td>Above 100</td>
</tr>
</tbody>
</table>
(2) How does the OES use ICT in instruction process?
The whole instructional process of On-line Education School consists of two parts: ICT mode and traditional mode.

(1) ICT mode includes:
- Internet-related tools (such as CMS, e-mail)
- Satellite-related tools (TV, IP broadcast)

(2) traditional mode includes:
- Face-to-face instruction
- Concentrated exam
The Whole Instruction Process of OES (Example of OES in Peking University)
Unit Ten: GOING HOME

Probably the story is one of those mysterious bits of folklore that reappear every few years, to be told anew in one form or another. However, I still like to think that it really did happen, somewhere, sometime.
## The Instruction methods used in OES

<table>
<thead>
<tr>
<th>Teaching Tools Used in OES of China Universities</th>
<th>Percentage of OES using the Teaching Tool (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curriculum Management System</td>
<td>100</td>
</tr>
<tr>
<td>Video Conference System</td>
<td></td>
</tr>
<tr>
<td>One-way Video Conference System</td>
<td>89.8</td>
</tr>
<tr>
<td>Two-way Video Conference System</td>
<td>84.2</td>
</tr>
<tr>
<td>Web Courseware</td>
<td></td>
</tr>
<tr>
<td>Text-only Courseware</td>
<td>100</td>
</tr>
<tr>
<td>Stream Media Courseware</td>
<td>92.5</td>
</tr>
<tr>
<td>E-mail</td>
<td>100</td>
</tr>
<tr>
<td>Chat Room</td>
<td>96.2</td>
</tr>
<tr>
<td>BBS</td>
<td>100</td>
</tr>
<tr>
<td>Satellite TV Communication</td>
<td></td>
</tr>
<tr>
<td>Two-way Satellite TV Communication</td>
<td>5.3</td>
</tr>
<tr>
<td>One-way Satellite TV Communication</td>
<td>8.1</td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
<tr>
<td>CD-ROM (Courseware)</td>
<td>94.3</td>
</tr>
<tr>
<td>Telephone, Fax</td>
<td>100</td>
</tr>
<tr>
<td>Traditional methods</td>
<td></td>
</tr>
<tr>
<td>LCOC</td>
<td></td>
</tr>
<tr>
<td>Face-to-face Instruction</td>
<td>100</td>
</tr>
<tr>
<td>Concentrated Exam</td>
<td>100</td>
</tr>
</tbody>
</table>
Use Frequency of ICT Mode in OES

- The ICT mode occupies more teaching time than traditional methods in the majority of OESs. But among Internet-based ICT tools, their use frequency is different greatly each other:
  - the courseware, E-mail, and CD-ROM belong to the tools that used most frequently in instruction process
  - Next is Curriculum Management System (CMS), BBS, and chat room
  - video conference system (VCS) is the tool that use least in on-line instruction process
  - percentage of OESs that using satellite-related ICT tools is very low
The time and frequency of such traditional teaching methods as face-to-face instruction and concentrated exam is very less than that of ICT:

- the face-to-face instruction is used only one time a semester
- LCOCs will be responsible for the implement of exams once a semester
3. Some Problems in ICT Use in OES
(1) Teachers’ Attitude to ICT Use in OES

- The survey shows, some university teachers do not like to use ICT facilities in their teaching, whatever in traditional classroom or in OES.
  - “It takes me much more time to prepare the lesson than before”
  - “Though I take more efforts in OES teaching than ordinary students on campus, I do not know if they can learn as good as the latter.”

- The size of OES class:
  - The amount in one class even comes to two hundred or three hundred students
  - the teacher actually can not provide effective supervision for all students
(2) The Criterion of CMS and Digital Resources

- There is no a uniform technical criterion in the CMS and courseware in many OESs.
- The courseware developed by various OESs is different each other in data standard.
- The courseware produced by one OES based on its CMS can not be used in another OES CMS, which results in enormous waste of time and money.
Thank you for your time

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