ICT for Teaching and Learning in Mongolia

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Acad. JADAMBAA Badrakh
President of Mongolian State University Of Education, president@msue.edu.mn
Ph.D TSEDEVSUREN Danzan
Chair of Bachelor Academic Affaires Office in MSUE, tsedevsuren@msue.edu.mn
Content

- Current ICT Environment in Education
  - Digital environment and hardware
  - ICT Facility in Education
  - ICT Human Resources
  - Electronic materials and electronic resources in Mongolian Language
  - Other Capability
- ICT and Learning & Methodology
  - ICT and pre service teacher training
  - ICT and in service teacher training
- Conclusion
Current Situation ICT in Education
Policy on ICT Application in Education

- The Mongolian Government pays greater attention on ICT applications in Education Sector. Some examples of ICT policy in Education Sector:
  - “National Program on Distance Education 2002-2010” (Government of Mongolia, 2002);
  - E-education sub program in “E-Mongolia National Program” (Government of Mongolia, 2005)
  - Education Sector Master Plan, 2006
  - …
- The Mongolian parliament has passed several important laws on ICT applications.
Digital environment and hardware

- Number of children in a computer

<table>
<thead>
<tr>
<th>Year</th>
<th>TVET</th>
<th>Secondary School</th>
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<tbody>
<tr>
<td>2007</td>
<td>43.8</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>31.3</td>
<td></td>
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<tr>
<td>2009</td>
<td>25.2</td>
<td></td>
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<tr>
<td>2010</td>
<td>21.1</td>
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As of end of 2010, average number of computers at secondary schools was 23, and 2 copy machines, 1 or over LCD projectors.
Internet connection

- Computer & Internet Connection

446 secondary schools connecting to internet (59.3%).

E-Schools (Secondary)

- Some secondary schools have already started electronic schools.
  - In Ulaanbaatar city
    - Number 1
    - Number 84
    - Number 33
    - “New Mongolia”
    - ...
  - Darkhan city
    - “Star” Complex School
Many educational organizations operate in Mongolia have their own websites. About 11 percent of all websites in Mongolian language was designed in the fields of education, culture and science.

The Distance Learning Centers were established in 21 province centers and UB.
ICT Projects

- IIREM
- FTI
- Second Education Development Project
  - ICT technical support
  - Developing ICT skills of teacher training institutions teacher
- ICT in Education Project (Tokyo Tech, MSUE)
  - Methodology development
  - [www.bagshiinkhugjil.mn](http://www.bagshiinkhugjil.mn)
- Sakura Project
- One computer per child
- READ
- ....
Electronic Materials and Electronic resource

- About 200 different electronic materials and learning contents are in actual use today.
- There are over 20 TV channels broadcasting some public educational programs.
- Some websites specializing in E-books and several educational websites, from which students and teachers can get the latest information about Mongolian Education and ICT environment.
It’s important to improve ICT literacy among the public.

- In accordance with 10-11 years of secondary education since 2004, the schools have started teaching Informatics subject since the 5th grade.

- The Informatics subjects 5 domains
  - Information
  - Computer
  - Algorithms
  - Model
  - Information System
ICT Literacy for Child

- Has began to develop the national curriculum for subject “Informatics” since 2008 academic year
- Have had several testing of the 8th and 9th grade the curriculum and improved it to be more effective and useful for learners (before were 5 domains, after development it became 8)
ICT Literacy for Child

- The 8 domains:
  - Basic Understanding of ICT
  - Using Computer and File Managing
  - Using Word Processing
  - Using Spreadsheet
  - Using picture tools (image processing)
  - Using Presentation & Multimedia
  - Using Databases
  - Using Internet and Communication
Informatics subject

- Primary education: 5 grade 35 hours
- Lower secondary education: 7-9 grades $35 \times 3 = 105$ hours
- Upper secondary education: 10-11 grades $35 \times 2 = 70$ hours
ICT for pre service training
Informatics teacher

- There are 24 ICT educational institutions in Mongolia, which train ICT professionals, of which 7 are public institutions, and the remaining are private institutions.

- According to the statistics, in the 2009-2010 academic years, 5871 are studying for bachelor’s, 77 are studying for their master’s and 12 are studying for their doctorate.
Informatics teacher

- MSUE-Mongolian biggest university of Teacher Education
  - Informatics Teacher
  - Informatics and Mathematics Teacher
  - Physics and Informatics Teacher
- NUM:
  - Mathematics and Informatics Teacher
- Other Universities and Institutes (over 20)
  - Informatics Teacher
For all teacher students

• Subject name
  • Information Technology its application-1 (**ICT Literacy**)
    • 2 credits, 64 hours in one semester
    • Contents
      • Understanding ICT, IT, Computer hardware & Software
      • File managing
      • Information & Communication
      • Using Word processing
      • Using Excel
      • Using Powerpoint
For all teacher students

- Information Technology its application-2 (ICT using subject and to integrate teaching methodology)
  - 1 credits, 32 hours in one semester
  - Contents:
    - Using excel creating and developing easy learning database and electronic evaluation materials
    - Using FOSS for Education
    - Create and use learning presentation
    - ICT using subject
      - Using Internet resource
      - Using learning blog
      - Processing learning electronic materials using Internet free resources
In service teacher training & ICT
Teacher ICT Skill Development 
modules

- Modules of Computer Science & Information Technology School of MSUE
  - Basic module teacher ICT literacy
  - Methodology of using ICT in learning process
  - Methodology of processing learning electronic content
  - Informatics Subject Methodology

- Teachers School of MSUE
  - Informatics Didactics (for Primary Education Teachers)

- eLearning national center
  - Methodology of processing learning electronic content
Teacher ICT Skill Development modules

- Educational Study School of MSUE
  - Set up 2008
  - UNESCO Resource Center - 2011
- “ICT in Learning Process” trainings for teacher training institute and university’s teachers
- “ICT using teacher training” training for teacher training institute and university’s teachers
- “ICT in Learning Process” national seminar for teacher training institute and university’s teachers
Teacher ICT Skill Development modules

- eKnowledge NGO:
  - Online training (20 hours)
    - eLearning Planning
    - eLearning Teaching
    - eLearning Content Development
Multimedia national competition

- Modules of Computer Science & Information Technology School of MSUE (Japan Kakugei University)
  - “Using multimedia technology in teaching” national competition (Started 2007)
  - **Objective:** how to better use multimedia technology in classroom learning process and spread the teacher experience
  - Багш сургалтын үйл ажиллагаандаа мультмедийн программ хангааж бэлэглэж байгааг тодруулах, бусад түүхэн дэлгэрүүлэх
  - **Title:** Free
  - **Participate:** Secondary school teacher
In 2009, according to the implementation of the project “Initiative partnership to achieve the result of public education”, trainings such as “Increasing consumption ability of ICT” and “Using ICT in trainings” were organized among over 4000 secondary school teachers.
Measures Taken to Improve Teachers’ ICT Use

- 2220 (using ICT for Learning Basic Module) + 10000 (using ICT for Learning Advanced Module) primary, math, informatics teachers will attend a series of training courses by the “Education for All – Fast Track Initiative” project and 60 will be trained as national trainees in 2008-2009.
Every school has 1-3 informatics teacher.
Training and improved their ICT knowledge, making them about 14% of the over 26000 total of all teachers working at secondary schools.
Conclusion

• Paying a special consideration on the creation and development of the ICT technical environment in the field of education. About 61 percent of computers, used in secondary schools are acceptable for today’s demand.

• Although certain measures improve the ICT knowledge of teachers are being taken to and help them to use ICT in their training process.

• Distribute good experience of the project
Conclusion

- Implement standards
  - ICT Teacher Skills Standard
  - Secondary school ICT environment (eSchool)
  - …
- Build National eLearning System
- Teacher digital collaboration field
Thank you for your attention.