e-Learning in Primary & Secondary Education

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I. Overview
1. Vision

Lifelong Learning Society

**Improve Quality of Public Education Through e-Learning**
- Integrate centralized e-Learning projects
- Customize programs for teachers

**Develop Key Human Resources through e-Cluster**
- Build e-cluster
- Improve university competitiveness

**Develop Vocational Education**
- Diversify specialized e-Learning institutes
- Provide customized e-Learning service

**Regional Integration Through e-Community**
- Improve information accessibility for the disadvantaged
- Establish regional e-Community

**Collaborative Network**
- Collaborative system between ministries and organizations

**Revise Laws & Regulations**
- Enactment for e-Learning
- Establish the Education Resources Sharing System

**Increase Public Awareness**
- Reduce gap between technology & practical use
- Globalization of e-Learning
2. Directions

- Globalization of e-Learning
- Building Competitiveness of e-Learning industry
- Regional and social integration by resolving information divide through e-Learning
- Systematic integration of between education & economy through e-Learning
## 3. History

<table>
<thead>
<tr>
<th>Period</th>
<th>Key words</th>
<th>Teaching-Learning Model</th>
<th>Feature</th>
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</thead>
</table>
| ’87~’95  | Computer education, PC, DOS, Network                                                                                                        | Use of application programs as educational tools, CAI                                    | ▪ Computer literacy training  
▪ Use CAI to support lecture  
▪ Spread computer and network in schools |
| ’96~’00  | Education Informatization, IT, Internet, Windows                                                                                              | Internet as edu. tool, Cyber learning programs, National guidelines of using ICT in every subject | ▪ Integrated ICT literacy training  
▪ Individualized learning using cyber learning materials  
▪ Education infrastructure completed |
| ’01~’03  | ICT in Education, ICT, e-Service                                                                                                             | Searching, Analysis, Guidance, Web discussion, Collaborative study, Expert relations, Web penpal, Knowledge creation | ▪ 8 models of using ICT  
▪ How to use of information  
▪ Diversified methods using internet  
▪ Infrastructure (broadband)  
▪ Wide use of ICT materials |
| ’04~Present | e-Learning, Ubiquitous                                                                                                                        | Self-directed Learning                                                                    | ▪ Learning in School→Learning in Anywhere (home, society)  
▪ [Just for me] Education  
▪ Change of Educational Paradigm  
▪ Streaming video through internet |
4. e-Learning Progress in Korea

<Infrastructure>

<table>
<thead>
<tr>
<th>Year</th>
<th>Main User</th>
<th>Teacher</th>
</tr>
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<tbody>
<tr>
<td>80s</td>
<td>A/V Ed</td>
<td>BE</td>
</tr>
<tr>
<td>Early 90s</td>
<td>CLM</td>
<td>EOD</td>
</tr>
<tr>
<td>Mid 90s</td>
<td>CBE</td>
<td>CHLS</td>
</tr>
<tr>
<td>Late 90s</td>
<td>EBE</td>
<td>ERS</td>
</tr>
<tr>
<td>2000s</td>
<td>BE</td>
<td>TLC</td>
</tr>
<tr>
<td>Mid 2000s</td>
<td></td>
<td></td>
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</table>

<Inter-operability>

- Low
- High

<Year>

- 1.2~2.4Kbps
- 9.6~14.4Kbps
- 2Mbps
- 5Mbps
- 10Mbps
- 50Mbps

<Main user>

- A/V Ed: Audio & Visual Education
- CAI: Computer Assisted Instruction
- CCLS: Computer Communication Learning System
- CLM: Cyber Learning Material
- CBE: Computer based Education
- IBE: Internet based Education
- ICT-BE: Information & Communication Technology based Education
- BE: Broadcast Education
- EOD: Education on Demand
- ERS: Educational Resource Sharing System
- TLC: Teaching & Learning Center
- CHLS: Cyber Home Learning System

※ m-Learning: Mobile Learning
 u-Learning: Ubiquitous Learning
t-Learning: TV (interactive & broadband TV) Learning

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Unit-based Service
Integrated Service
Educational Content
Educational Broadcasting
Teaching-Learning method

1. e-Learning Progress in Korea
II. e-Learning Services for K12
1. National Teaching-Learning Center-EDUNET (www.edunet.net)

- Integration of educational resources
  - Quality contents service
  - Increment of educational resources
  - Increase quality of educational service

- Personalized knowledge (customized service)
  - Interchange between community & school
  - Facilitate interchange of all stakeholders

- Integrated search
  - Teacher: Teachers, Head teachers, librarians
  - Student: K12, College, Special
  - Parents: Children Edu., Life-long Edu.
  - Administrator: Principle, Supervisor, Policy makers

- EDUNET
  - Knowledge Warehouse
  - eCRM/CMS
EDUNET Subscribers (Dec. 2005)

- **Subscribers**
  - Teachers: 412,000
  - Elem. Students: 753,000
  - Middle School St.: 1,090,000
  - High School St.: 963,000
  - Parents: 367,000
  - Others: 2,304,000

- Total Subscribers: 5,910,000
  - 100% of all teachers
  - 35% of all students

- Total Population of Korea: 49,000,000
2. Cyber Home Learning System

- Internet-based learning service
- Support self-directed learning

- Student-centered
- Home connected
- Online
- Curriculum-based

1:1 Learning Management
Community
Customized learning

Major Services
- Customized learning
- Q&A
- Level Diagnoses
- Career counseling

Self-directed learning after school hours
Cyber learning incorporated with class

DLS
KEM
LMS
LCMS
ERSS
3. Digital Library System (dls.edunet.net)

Regional Offices of Education

Library administrative assistant service

Digital Library
System

inter-organizational
information exchange

Index service

Reading assistant service

Library

Index development & operation

• Librarian

Search, problem solving

• Student

Support class materials, Reading assistance

• Teacher

Internet-based One-Stop Library Service
3. Digital Library System (Continue)

<table>
<thead>
<tr>
<th>Year</th>
<th>No of Schools using DLS</th>
<th>No of Bibliographies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>3,201</td>
<td>50,000</td>
</tr>
<tr>
<td>2004</td>
<td>5,504</td>
<td>70,167</td>
</tr>
<tr>
<td>2005</td>
<td>7,107</td>
<td>85,379</td>
</tr>
</tbody>
</table>
4. Educational Resources Sharing System

- Expand creation and distribution
- Utilization of educational knowledge

Educational Resources Sharing System

School

Regional Office of Education

School Homepage

Specialized Institutions

DLS

- Primary
- Middle
- High
- Special

Education Science Institutions
- Training agency
- ICT Agency

National Standard of Educational Metadata

• KICE
• KRIVET
• KEDI
• KISE
5. e-Administration System: NEIS (www.neis.go.kr)

**Parents & Citizens**
- Certificate Service, etc.
- DB Use (Educational Statistics & Policies, Student Records, etc.)

**MOEHRD**
- Policy Making
- Analysis on Policy Implementation & Educational Statistics

**MPOEs**
- Management & Analysis of Policy Implementation
- Budgeting, Personnel Mgmt, Facility Mgmt, etc.

**Sub-Local Offices of Education**
- Implementing Policies
- Budgeting, Personnel Mgmt, Facility Mgmt, etc.

**Schools**
- Academic Affairs
- School Finance, Administration

**Ministries & Organizations**
- Sharing DB (Resident Registration No. School Registration Status, etc.)

**School Administration**
- Planning
- Qualification Exam
- Corporate Body
- Public Relations
- Lifelong Education
- Facilities
- Laws
- Health
- Assets
- Audit
- Civil Defense
- Equipment
- Asset registration
- Physical Education
- Budget
- Statistics
- Teaching Staff Mgmt
- Finance
- Admission
- Administrator Mgmt
- School Finance
- Supervision
- Salary
- School Meals
- Academic Affairs
- Civil Service
- Systems

**NEIS**
- MOEHRD
  - Statistics DB
  - Internal Administration DB
  - Index DB
- Regional Offices of Education (ROEs)
  - Public Service DB
  - Educational Administration DB

**Security**
- Internet

**Public Authentication**
- Internet
- MPOEs
III. e-Learning Initiatives
2. e-Learning Standardization

- Educational Metadata Standardization (KEM)
- Research on Ontology-based Semantic Web thru Advanced KEM
  - Intelligent Agent-based Search Environment
- Question & Test Interoperability Standardization Research
- Research on Collaborative Learning Management Standardization Linking with SCROM-based Content
  - Link Collaborative Learning Activity with Sequencing & Packaging
  - Research on Sequencing Rule, Utilizing External Evaluation System
- Development of e-Learning Standardization R&D Web Site
  - Link with ADL Academic Co-Lab Link and Information Sharing
3. Teaching-Learning Model

- **Research on e-Learning Model and Prototype Development for Excellence in Education**
  - Enhancing Problem-Solving Abilities for Excellent Science Learners
  - Developing Learning Tools (ex, Online Thinking Tool by Intel)

- **Research on Ubiquitous-based Learning Model and Prototype Development**
  - Learning Scenario Development thru Media Convergence
  - Fostering Ubiquitous Learning Environment for Convergence Learning Model Application

- **Research on e-Learning Effectiveness Analysis Model Development**
  - Developing Effectiveness Measurement Model thru e-Learning Application by Education Field
  - Research on Ultimate Goals of e-Learning by Education Field
4. Contents Development

- Teaching-learning model
- Teacher training programs
- Contents for e-Learning-based teacher training

- Develop multimedia contents
- Teaching-learning module using ICT
- Develop instructional software

- Develop contents for special & vocational education
- Nationwide educational software contest

- Operate ICT model school project
- Software quality assurance
- e-Learning Expo (8 round)

Multimedia Educational Resources

- Total 81,819
- Pictures 24,832
- Sound 11,508
- Video 5,219
- Module 6,337
- Animation 3,439

Completion of developing educational contents for 10 compulsory subjects (2003. 12)
### 5. Teacher Training

- Develop ICT teaching-learning model and strategy
- Plan integrated training program for teachers
- Expand nationwide subject study society network
- Nationwide contest on how to adapt ICT in teaching

#### Old ICT Training

<table>
<thead>
<tr>
<th>Teacher centered</th>
<th>ICT literacy centered</th>
<th>Delivering centered</th>
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<td>Delivering centered</td>
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</tbody>
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#### New Training Program

- **Focused on students’ activities & higher order thinking skill**
- **Focused on ICT integrated with Curriculum**
- **Focused on active participation (Learning by doing)**

#### 2000 - 2005

- off-line ICT training program : 34 unit
- on-line ICT training program : 17 unit
- Nurture innovative teachers : 3,679
IV. Introduction to KERIS
1. Vision & Goals

**Leading Innovator**
in educational and technological changes thru quality future forecast

**Top Benchmarking Model**
to globally recognized institutions in applying ICT in education

**Global Leader of Education Informatization**

**Specialized Institution**
in resolving educational pending issues thru effective use of innovative technologies

**Global Leader**
with best human resources and outstanding achievements
2. Organizational Structure

- Legislative basis: The Act of KERIS (Apr. 21, 1999)
- Budget: Total US$ 42Mil. (2005)
- Organization: 1 Offices, 4 Centers, 2 Divisions (138 Staff)
3. History

- Sept. 1996: EDUNET began its operation
- May. 1998: RISS began to operate
- Mar. 2001: Assigned as “NEIS Center” by the MOE & HRD
- May. 2002: Nation-wide Educational Resources Sharing System (ERSS) was completed
- Dec. 2004: KEM (Korea Educational Metadata) was certified as Korean Standards ()
4. Major Roles

- Support Policy-Making & Implementation
- Promote e-Learning
- Enhance Academic Resources Sharing
- Facilitate e-Administration
- Expand Global Cooperation
5. Tasks(1)
Support Policy-making

- Study national ICT master plan
- Issue white paper and periodic journals
- Analysis of ICT policy
- Conduct international collaborative studies
- Develop and distribute educational contents
- Operate u-Learning model school pilot project
- Quality assurance
5. Tasks(2)

Educational Information Service

EDUNET Operation  www.edunet.net

- Extensive system used by all stakeholders of education
- User specific customized content for teachers and students

Major implementing bodies

- 16 Metropolitan and provincial offices of education and KERIS
- Current number of subscribers exceeds 5.5 million people
• Establish research information exchange system among all universities and related institutions in Korea

• Provide technical consulting and training for university libraries /research information organizations

• Four major services
  - Union Catalog Service
  - ILL (Inter-Library Loan) Service
  - Full Text Service
  - Database Overseas Content Service
5. Tasks(4)

NEIS Development & Operation

- Manage NEIS infrastructure and analyze operational statistics
  - Provide technical support and consulting for central center and regional office of education

- Integrated management of NEIS
  - Organize steering committee
  - Develop and diffuse best practices

- Build and operate NEIS user support system
  - Operate call centers to respond users’ needs

- Enhance security system
  - Protect from hacking and viruses
  - Develop training program for administrators
5. Tasks (5)

Build & Operate Information Systems

- Standardization of educational information
- Facilitate knowledge creation and sharing
- Contribute national competitiveness

KEM standard & ERSS
EDUNET
RISS
Develop & manage system and software
5. Tasks (6)

Global Cooperation

Strengthening Partnerships with Int’l Orgs
- OECD, UNESCO, World Bank
- APEC, ASEM, SEAMEO

Cooperation with e-Learning partners
- MOU and joint seminars
- e-Learning Expo

e-Learning Consulting
- Infrastructure support
- Training programs (with 16 MPOEs)
Thank You!

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