Role of National Agency for ICT in Education: Progress of Korea’s ICT in Education & KERIS

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What kind of support does KERIS *get from the government*, if any, to ensure such functions?

Are there any *recommendations* for countries who wish to establish a dedicated national agency to support the effective implementation of ICT in Education?
Establishment of a New Organization: You have to consider ...

- Level of expertise required to perform tasks
- Degree of client homogeneity
- Coordination efficiency, etc.
- Accountability
- Transaction cost(s)

(Garnett, 1984; Thomas, 1993)
Importance of National ICT in Education Agency Development

- To implement evidence-based ICT in education policy at the national level
- To respond to rapid change & technology development
- To expand industry-academia-government cooperation for policy impact
- To harmonize policy efforts between central & regional government
- To scale up local innovation to policy mainstream
What undertakings has KERIS done in order to play a bridge role between policy & practice in educational innovation?

- **Policy Think Tank**
  - Develop ICT in Education Master Plan
  - Propose new policy agenda to the government

- **Lead local innovation cycle**
  - Research → Development → Dissemination → Support
  - Pilot program → M & E → Best Practice → Scale up
  - Community of Practice → Propose new policy

- **Coordination between policy & practice**
  - Public awareness
  - Minimize resistance from ground level
  - Communication windows among different stakeholders

- **Link between central & local government**
  - Training program, content development & quality control, pilot program & monitoring
What are actual examples where KERIS research findings successfully informed policy, especially for sustaining & mainstreaming innovative practices?

- SMART Education Initiative
  - Digital Textbook, Future School Model, Online Class, Teaching and Learning Pedagogy, Teachers Competency Training
- Cyber Home Learning System
- KOCW (Korea Open Courseware) Service
- Education Statistics Service: Evidence-based policy
- Monitoring for use of ICT in education in regional office of education
- Cyber ethics & security
- Copyright issues on educational use
- Evaluation of university library
  - Developed indicators & measuring instruments
What mechanisms exist to ensure KERIS’s voice & the ear of policy makers? What were the challenges in playing such roles?

- Policy Studies
  - ICT in Education Master Plan
  - Annual programme budget: Propose new policy agenda & programmes
- Performance Evaluation by Ministry of Education, Ministry of Finance and National Assembly
- Regular information meetings between MOE, Regional Offices of Education & KERIS
- Regular symposiums, forums and expert meetings
What kind of support does KERIS get from the government, if any, to ensure such functions?

- Financial support
  - Continued evolvement of the organization
  - Long term commitment
- Legal Framework
  - Written in the national law: Establishment Act of KERIS in 1999
  - Indicates role of KERIS, government financial support and long term commitment for the organization
- National laws & Acts: closely linked with major programmes
  - University Disclosure Special Act: Specialized institute for education statistics
  - National Education Law
  - National Research Promotion Act
  - National Higher Education Act
  - Enactment of Informatization Stimulation Act (1996)
  - Legal basis for Informatization Promotion Action Plan & Promotion Fund
Are there any recommendations for countries who wish to establish a dedicated national agency to support the effective implementation of ICT in Education?

- Firm leadership & long term commitment
- Financial support from the government
- Transparency
- Establish specialized agency for policy implementation
- Public vs. Private
- Expert group as policy a think tank for national policy development
- Building trust in beginning stages of the institutes
- Trust from all stakeholders: government, academia, industry partners, parents & students
Korea Education & Research Information Service

Legal Basis

Act on KERIS (Korea Education & Research Information Service)
[Act No. 9,414 Enacted on Jan. 21, 1999)

Roles

- Advisor for Policy Development
- Coordinator for Policy Implementation
- Think-Tank for Research and Development
- Center for Service Operation
History

June 1996  KMEC (Korea Multimedia Education Center) est.
          KRIC (Korea Research Information Center) est.
Dec. 1996  EDUNET launched
Sept. 1996 Research Information Sharing System (RISS) launched
KMEC & KRIC consolidated into KERIS
May 1998  Designated as NEIS operation center
Apr. 1999  Designated as Central Center for Cyber Home Learning
           1st UNESCO–King Hamad Prize for ICT Use in Education
           IMS Learning Impact 2007 Platinum Award for Cyber Home Learning
Apr. 2002  Opened Education Cyber Security Center (ECSC)
July 2004  Designated as Distance Education & Training Support Center
           Launched education & research information mobile services (CHLS & KOCW)
Jan. 2007  Selected for KOCW App, App Award Korea BEST 30
           Establishing strategies for implementing SMART Education
           Designated as institution for e-Learning Standardization & Quality
Organization

US$100 Million annual budget (2013)

270 staff

5 divisions & 2 members

Board of Directors

President

The Office of Audit & Inspection

Management & Planning Division

Smart Education R&D Division

Academic Research Information Division

Educational Administration Financial Information Division

Information Technology Division

Global Cooperation & Policy Research Center

Management Support Center
Progress of ICT in Education

II. Major Services

Preparation for information society
- Standardization & distribution of educational PCs (16 bit) (1989)
- Installation of first educational computer (1971)
- School Computer Education Master Plan (1987)

Building infrastructure
- Completion of educational ICT infrastructure
- Guidelines for ICT in Education in primary & secondary schools (2000)
- RISS (1998)
- EDUNET (1996)
- ICT in Education Master Plan I (1996)

Teaching & learning with ICT
- Development & distribution of content
- Improving teaching methods
- e-Learning Global Cooperation Center (2006)
- ICT in Education Master Plan II (2001)
- NEIS (2002)

U-Learning & Smart Education
- Ubiquitous society
- Ubiquitous learning
- Operation of Digital Textbook Model Schools (20, 2008)
- Digital Textbook Development Plan (2007)
- U-classroom (2007)

Customized Learning
- Customized learning
- Kindergarten Information Disclosure Public Service (2012)
- Operation of Smart Model Schools (2012)
- SMART Education Strategy (2011)
- Operation of Smart Model Schools (2012)
- Kindergarten Information Disclosure Public Service (2012)
- SMART Education Strategy (2011)
EDUNET, the 1st Educational Portal Service

National teaching-learning center since 1996

- Nationwide education information sharing system (G4–G12)
- Made for all people to use high quality educational information
- 6.4 million EDUNET members (100% teachers & 30% students in 2012)

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
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<tbody>
<tr>
<td>National Level</td>
<td>Developing national standards, models, and guidelines by working in close cooperation with educational organizations of cities &amp; provinces</td>
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<tr>
<td>Provincial Level</td>
<td>Developing &amp; distributing contents based on national standards, models, &amp; guidelines</td>
</tr>
<tr>
<td>School Level</td>
<td>Using the teaching &amp; learning contents provided by the central &amp; local teaching &amp; learning centers through EDUNET</td>
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<www.edunet4u.net>  <good.edunet4u.net>  [Mobile service]
Cyber Home Learning System

On-line learning service to support self-directed learning
(Since 2004, G4, G10, 4.5

<table>
<thead>
<tr>
<th>5 Core Subjects</th>
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<tbody>
<tr>
<td>Korean, Social Studies, Science, Mathematics, English</td>
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<table>
<thead>
<tr>
<th>3 Levels</th>
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<tbody>
<tr>
<td>Basic, Supplementary, Advanced</td>
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<table>
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<tr>
<th>2 Types</th>
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<tbody>
<tr>
<td>Class Allocation Type</td>
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<tr>
<td>Self-Study Type</td>
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<tr>
<th>Main Services</th>
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<tbody>
<tr>
<td>Learning Management System</td>
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<tr>
<td>Cyber Teacher</td>
</tr>
<tr>
<td>Learning Diagnosis &amp; Prescription System</td>
</tr>
<tr>
<td>Video Lecturing</td>
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<tr>
<td>Consulting System</td>
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Diagram:
- Customized Lessons based on their Academic Level
- Diagnosis of Learning Performance
- Consulting for Education
- Learning Management
- Questions & Answers/Search
- Feedback on Test Results/Aids of Learning Activities
- Records of Learner’s Activity
- Cyber Tutors
- Cyber Consultants
- Feedback on Test Results
- Teachers (In School)
- Parents (At Home)
Digital Textbook

Teaching-learning material which contains various types of up-to-date information, provides support tools for learners’ expressive activities & learning assessment.

2002-2006
- Basic research on future education & textbook

2007-2012
- Development of Prototypes
- Apply prototypes to pilot schools
- Development of Digital Textbook Platform

2013-
- Distribute to elementary level schools

Paper textbooks
- Limited content
- Hard to reflect latest info
- Limited learning activity

Rich learning materials
- No needs for reference books and workbooks
- Management suited for individual levels
- Learning textbook perfect for self-directed learning
Teacher training in ICT use

Training Level

Introductory Course for ICT Use
- Information search & ICT tool use

Basic Course for ICT Use
- Concept of ICT use class & preparation

Advanced Course for ICT Use
- Design & operation of ICT use class

Leadership Course for ICT Use
- Enhancement of learning by ICT use, construction of strategy for ICT in schools

Target Group

Teachers
- Beginner teachers
- Senior teachers

School CEOs

Teacher’s Career Cycle

Teacher Training Information Service: ttis.edunet4u.net
NEIS, National Education Information System

A Web-based integrated administration system for educational organizations

- 17 Metropolitan & Provincial Offices of Education
- 177 Local Offices of Education
- 11,510 Schools (Elementary, Middle, High, & Special Schools)

- **General affairs**
  - Handling general administrative affairs for teaching & non-teaching staff & education organizations

- **School affairs**
  - Handling student information & school administrative affairs

- **Civil services**
  - Home-Edu
  - Parent Service
  - Public Announcements of all schools
**NEIS, National Education Information System**

Ministry of Public Administration & Security

NEIS Admission
Elementary school

NEIS Admission
Middle school

NEIS Admission
High school

Univ. applications
University

**Effects**

- Reducing teachers’ workload
- Enhancing conveniences for civilians & parents
- Enhancing efficiency in school administration
- Economical benefits
- Promoting domestic software industry

**Satisfaction ratio with reduced teacher workloads**

- E-approval: 40%
- Admission process: 17%
- Management of student records: 16%
- Transfer process: 12%
- Recording school life activities: 6%
- Grade processing: 5%
- Etc.: 4%
RISS, Research & Information Service System

Single gateway that provides university libraries nationwide with access to journal articles, theses & dissertations
(Higher education service since 1998)

Producer
699 Univ. Libraries
NII, Japan
CALIS, China
OCLC, USA
Univ., Institutes
Academic Societies
MEST, KEDI, KRIVET, etc.
e-Learning Support Center

Collect & Process

Union Catalog & Inter-Library Loan
Thesis & Dissertation
Korea Open Course Ware
Journal Articles
Video Lectures & Syllabus
Foreign Research DB

[www.riss.kr]
[Facebook RISS page]
**KOCW, Korea Open Course Ware**

Free & open online lecture contents service for higher education *(since 2007)*

- **Domestic Universities**
  - Online lecture contents & related course materials opened by universities
  - Humanities, Social Sciences, Natural Sciences, Engineering, Pharmacy, Education

- **Universities overseas**
  - Lectures from MIT OCW, Stanford Engineering Everywhere, Open Yale, TED, YouTube/EDU

- **Noble Laureates series**
  - Lectures by Nobel Prize winners from their specific fields

- **Special pages**
  - Let’s learn Korean
  - KOCW learning languages
  - Pre-prep university introduction courses

**Courses & Materials**

<table>
<thead>
<tr>
<th>Year</th>
<th>Courses</th>
<th>Materials</th>
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<tbody>
<tr>
<td>2009</td>
<td>500</td>
<td>5,974</td>
</tr>
<tr>
<td>2010</td>
<td>1,297</td>
<td>14,739</td>
</tr>
<tr>
<td>2011</td>
<td>2,769</td>
<td>37,714</td>
</tr>
<tr>
<td>2012</td>
<td>4,637</td>
<td>63,353</td>
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<www.kocw.net>
International Cooperation

**Strengthening International partnerships**

- KERIS visiting program
- Global symposium on ICT in Education
- Regional Policy Forums
- Solar Powered Internet School project

**Knowledge Sharing and Policy Dialogues**

- Cooperate with UNESCO, the World Bank, APEC, ADEA and IDB
- E-Learning International Conference
- ICT in Education Indicators and Policy Review

**National ICT in Education Project through Bilateral Agreement**

- Projects with Uzbekistan
- Project with Colombia
Way forward

1. Policy

- Plan for transformation of education
- Integrate new competencies in the curricula & in assessment framework
- Implement new forms of continuous professional development as a long-term national plan to nurture digital environment & lifelong learning
- Train, motivate & reward teachers to use ICT in education
- Adopt ICT strategy into the school's overall strategies & activities
- Encourage positive attitudes towards ICT to develop into efficient widespread practice
Way forward

2. Academic & Research

- Consider context-sensitive & process-oriented research methods
- Create closer links between research & practice
- Encourage qualitative international research on the impact of ICT in education
- Rethink the approach to evidence & its relation to decision making
- Support both large & small-scale studies on the impacts of ICT & base decisions on both quantitative & qualitative evidence
Way forward

3. Further Cooperation

- Public Private Partnerships (PPP)
  - Finance
  - ICT infrastructure
  - Risk sharing & synergy effects

- International Organizations
  - Harmonized international cooperation & alignment among various organizations
  - Open active discussions & share practices & knowledge
SMART education R&D services and SNS

EDUNET  www.edunet.net
SMART education  smart.edunet.net
Future classroom experience hall  future.keris.or.kr
E-textbook  book.edunet.net
Teacher training information service  ttis.edunet4u.net
Creative experience activities total support system(EDUPOT)  www.edupot.go.kr
EDUNET me2day  me2day.net/keris_edunet4u
EDUNET Twitter  @KERIS_Edunet4u
KERIS and SMART education Facebook page  www.facebook.com/groups/smartereducationforum

Academic Research Informatization services and SNS

Academic research information service  www.riss.kr
KOCW  www.kocw.net
DDOD(Overseas Phd and original thesis service)  ddod.riss.kr
UNICAT(Total context service)  unicat.riss.kr
Librarian community  librarian.riss.kr
Academic information statistics system  www.rinfo.kr
Cyber university total information system  cuinfo.net
Edudata system  edss.moe.go.kr
School information disclosure  www.schoolinfo.go.kr
Kindergarten information disclosure  e-childschoolinfo.moe.go.kr

Education Financial Information services

NEIS  www.neis.go.kr
NEIS Business portal  neis.<Metropolitan and Provincial Offices of Education domain>.go.kr
Edufine  lef.moe.go.kr
Business Management system  bms.<Metropolitan and Provincial Offices of Education domain>.go.kr

IT Support service and SNS

Education Public Key Infrastructure Center  www.epki.go.kr
KERIS e-learning quality management Facebook page  keris.qm

Global Policy Support SNS

KERIS English Facebook Page  GlobalpartnerKERIS

Institution homepages and SNS

KERIS Korean homepage  www.keris.or.kr
KERIS English homepage  english.keris.or.kr
KERIS Twitter  @keris_in
KERIS Facebook  kerispage
KERIS me2day  me2day.net/keris_in
Jongwon SEO (jseo@keris.or.kr)
Senior Researcher
KERIS (Korea Education & Research Information Service)