The past, present and future of the National Education Information System (NEIS)
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I Overview of NEIS
What is NEIS?

National Education Information System (NEIS)

“NEIS”

A Comprehensive education administrative information system

12 thousand schools, 17 Metropolitan And Provincial Offices of Education, 176 education support offices, and the Ministry of Education

Processes all education administrative information electronically, and jointly uses the administrative information of related organizations
What is NEIS?

NEIS *(for teachers, staffs)*

NEIS public service *(for parents, students, graduates)*
Why NEIS is important?

- **NEIS is the ROOT system processing educational data**
  - NEIS contains user information of students, teachers, staffs, etc.
  - NEIS contains organization information of affiliated individuals, facilities
  - NEIS is connected with many government organizations where data can be exchanged online

Who runs NEIS and who uses it?

- **MOE, schools, offices of education, the public**
  - MOE (with KERIS) improves and updates the NEIS application weekly
  - Elementary, middle, and high-school teachers and staffs use NEIS everyday
  - Parents and students can access the NEIS public service at any time
What is NEIS?

System diagram(1)

NEIS at province centers

Each NEIS center is connected
- The same 17 sets of Servers/networks at provincial education centers
- They are connected via an online IPSEC VPN
- Most 'data transfer' goes through KERIS (more efficient to spread data)

NEIS at KERIS center

KERIS is a hub and a gateway
- KERIS is also connected via the online IPSEC VPN
- KERIS and other government orgs are connected via the IPSEC VPN or a leased line
- The KERIS center runs 24/7/365 with operators
What is NEIS?

System diagram (2)

Province 1

KERIS

Province n

School/Office user

NEIS WEB

NEIS WAS

DB

Public NEIS WEB

Public NEIS WAS

Public NEIS DB

NEIS WEB

NEIS WAS

NEIS DB

Ministry of Interior and Safety

Military Manpower Administration

Leased Line

IPSEC VPN (Internet)

IPSEC VPN (Internet)

...
NEIS Data Connection

School

Education agency

Ministry of Education

Policy statistics DB

Academic affairs
School statistics
Learning performance

General admin
system

personnel
Faculty statistics
School lunch

Information

School record

certificates

College entrance info

Customize statistics

Education statistics

All citizens

Parents (child info)

Civil complainter

400colleges

policy manager

All citizens
Inter-conduction of educational information produced by NEIS and information produced by each Government and associated agency.

An individual’s Resident Registration Number is the identifier that verifies and relates to the information.

Information is interlinked with 15 external agencies. (IE: Government Employees Pension Service, Military Manpower Administration, etc.)
Progress of linking information with other services

2011
10 types of information with 8 external agencies
Salary (Government Employees Pension Service)
Details of deduction (The Korean Teachers’ Credit Union)
Notice of burden (Teachers’ Pension)
Family dependents, Civil affairs certification (Ministry of the Interior and Safety)
Graduation, Acceptance certificate (National Institute for Lifelong Education)
Student records (Middle & High Schools) (Military Manpower Administration)
Food codes (Korea Agro-Fisheries & Food Trade Corp.)
Teacher training records (National Training Institute)

2012
2 types of information with 2 external agencies
Student volunteer activities certification records (Ministry of the Interior and Safety)
Student vaccination records (The center for Disease Control & Prevention)
### Progress of Linking information with other services

<table>
<thead>
<tr>
<th>Year</th>
<th>Type of Information</th>
<th>External Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>1 type of information with 1 external agency</td>
<td>Standard learning records (National Training Institute)</td>
</tr>
<tr>
<td>2014</td>
<td>2 types of information with 3 external agencies</td>
<td>Education expense records (Ministry of Health and Welfare), Lifelong education (Ministry of the Interior and Safety, Local Government)</td>
</tr>
<tr>
<td>2015</td>
<td>3 types of information with 4 external agencies</td>
<td>North Korean defector scholarly information (Ministry of Unification), Teaching institute records (National Tax Service, Local Government), Broadcasted school information (Korean Educational Development Institute)</td>
</tr>
</tbody>
</table>
Concept chart of linking information with other services

9 Unit work in NEIS

- Human Affairs
- Health
- Education Expenses
- Salary
- Qualification Examination
- Public Affairs
- School/Academic Affairs
- School meals
- Lifelong Education

NEIS Internal Connected HUB

- Seoul NEIS System
- Busan NEIS System
- Gyengsangnamdo NEIS System
- Jeju NEIS System

15 External Agencies

- Military Manpower Administration
- The Center for Disease Control & Prevention
- National Tax Service, etc.
- Government Employees Pension Service
- Teachers’ Pension
- The Korean Teachers’ Credit Union
- National Institute for Lifelong Education
- Korean Agro-Fisheries & Food Trade Corp.
- Local Government, etc.
Sample Case

Home-Edu Public Complaint Service

- Internet-based comprehensive public complaint service for individuals to use whenever and wherever they wish.
- Users can retrieve and print documents (diplomas, scorecards, etc.) by the G4C portal or NEIS public service.
Student information is managed from the date of admission to elementary school.
Once the information is registered with NEIS, a unique identification code is generated. The unique identification codes act as identifiers for data links.

- A unique key should be encrypted and secured.
Enhance efficiency

- Reduction of official documents and processing time
  - Teaching institute closing records: reduction of 700 documents (per year), decrease in processing time (1 hour → 2 minutes, per task)
  - North Korean defector scholarly information: reduction of 1,200 documents (per year)

Improve convenience and reliability

- Improved national service satisfaction
- Improved reliability of data and services
II Progress of NEIS
Background

Legal grounds

- The Fundamental Education Act
  Article 23-2 (electronic improvement of schools and education administrative organization affairs),
  Article 23-3 (principles of protecting student information)

- The Elementary & Secondary Education Act
  Article 30-4 (establishment and operation of an education information system),
  Article 30-5 (operations conducted via information systems)

- Rules (ordinances on operation of an education information system, etc.)
Background

Promotion background(1)

Schools / Offices of Education

School Information Management System (SIMS)
- Client/Server system
- High maintenance cost
- Need for high-end security

Student Information System (SIS)
- Stand-alone PC program
- Local rules and regulations
- Difficulties in data sharing

Difficulties with information sharing,
Difficulties with financial support for each school system in providing the most recent systems and maintenance

More effective system
- e-Government, legal system
- Standardizes work processes
- Standardizes document forms
- Rules for sharing information
- Provides high quality educational services
Increased need to convert the existing document-oriented administration to digital administration and provide advanced education administrative services, due to the ultra high-speed internet and development of information technology.

Need to provide and support research time for teachers by promoting measures to reduce teacher work in schools due to adoption of a student-oriented differentiated education curriculum.

E-government initiatives (Small but effective)
- NEIS was selected as one of 16 E-government projects.
### Progress of NEIS

#### Phase

**Before NEIS**
- Development and dissemination of the School Information Management System (SIMS) in 1997
- Established IT infrastructure in elementary and middle schools nationwide in 2000

**1st Gen**
- NEIS – General Affairs
- Established the 2nd phase of education informatization development in 2001
- NEIS General Administration Service in 2002
- NEIS Academic Administration Service in 2003

**2nd Gen**
- NEIS – School Affairs
- Online College Entrance Examination Service in 2004
- Academic Administration Affairs System in 2006
- The Parents’ Service in 2005
- The School Information Disclosure Service in 2008

**3rd Gen**
- Public service And Security
- Service renewal with the RIA Platform in 2011
- the Student Service in 2012
- Online survey of school violence Service in 2013
- OPEN API public service in 2015
- Acquisition of ISMS Certification in 2015

**4th Gen**
- Planning
- Full support of Web standards (HTML5, mobile)
- Enhanced security such as 2 factor authentication (OTP)
- More flexible and active system architecture to support educational policy
- Disaster Recovery Center (DR Center)

#### Key Concept

**School Administration**
- 1997 ~ 2000

**NEIS – General Affairs**
- 2001 ~ 2003

**NEIS – School Affairs**
- 2004 ~ 2010

**Public service And Security**
- 2011 ~ Now

**Planning**
- 2022 ~

**General Progress**
- BPR/IS
- ISP
**Mission**
- Who will use the system?
- Why do we need the system?

**Integration**
- Integration of working processes
- Integration of resources

**Security**
- The most important value
- ISO-27001 recommended

**Successful Service**
- As people use system frequently, more meaningful data will be collected
Thank you