Economic Development and Human Resources Development in Korea

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Dr. SooBong UH(soobong@koreatech.ac.kr)
Professor, KoreaTech.
I. Brief History of Skills Development Policies in Korea

➢ From an *impoverished* country to a modern industrial state

*Chong-gye stream, Downtown Seoul (1950s)*  *Chong-gye stream, Downtown Seoul (2000s)*
1.1. Long-term Trend of Per Capita Income (1953~2013; US$)

Source: Bank of Korea.
### 1.2 Outcome of Economic Development: 1960 vs 2005

→ Korea, one of the least developed countries in terms of industrial development in the early 60s

→ Transformed into one of leading industrial countries in the world during the last 40 years

<table>
<thead>
<tr>
<th></th>
<th>1960</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP per capita (in US$)</td>
<td>82</td>
<td>16,291</td>
</tr>
<tr>
<td>Share of Manufacturing (in GDP(%))</td>
<td>14.4</td>
<td>32.0 (2004)</td>
</tr>
<tr>
<td>Major Industries</td>
<td>Wigs</td>
<td>Shipbuilding (world no.1)</td>
</tr>
<tr>
<td></td>
<td>Eyelashes</td>
<td>Automobile (world no.5)</td>
</tr>
<tr>
<td></td>
<td>Clothes</td>
<td>Semiconductor (world no.3)</td>
</tr>
<tr>
<td></td>
<td>Plywood</td>
<td>Steel (world no. 5)</td>
</tr>
</tbody>
</table>

Source: Bank of Korea
1.3 Export Profile

Source: Bank of Korea
1.4 Korea’s Industrial Development Strategy

(Step 1) Selection of Strategic Sectors

(Step 2) Promotion of Large Companies for Global Market Access

(Step 3) Promotion of Small and Medium Enterprises (SMEs) for Job-Creation

(Step 4) Aligning Human Resource Development (HRD) with Labor Demand
1.5 Selection of Strategic Sectors

Objective

Maximizing the ROI through “Selection and Concentration” basis

Industry Linkage b/w Strategic Sectors in Korea (1970s)

- Raw Materials
  - Petrochem
  - Steel
- Processed Materials
  - Textile
  - Electronics
- Parts
  - Apparels
  - Autos
- Assembly
- Distribution
- End User

Strategic Sectors

- Oil & Gas
  - Petrochem
  - Electronic Parts
- Iron Ore
  - Steel
  - Auto Parts
  - Ship-bldg Parts

Foreign Buyers

General Trading Co’s
## 1.6 Aligning HRD with Labor Demand

### Objective

Efficient supply of workforce based on industrial demand

| Input-driven Industrialization | Innovation-driven  
<table>
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<th></th>
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<tbody>
<tr>
<td><strong>Industry</strong></td>
<td></td>
</tr>
<tr>
<td>• Light Industry</td>
<td>• Heavy &amp; Chemical Industry</td>
</tr>
<tr>
<td>• Wig, Plywood, Garment, Textile, Shoes</td>
<td>• Big 5 + 1</td>
</tr>
<tr>
<td>• Export Promotion Policy initiated</td>
<td>• Steel, Autos, Shipbuilding, Petrochemical, Semi-Conductor, Construction</td>
</tr>
<tr>
<td><strong>Demand for labor</strong></td>
<td></td>
</tr>
<tr>
<td>• Simple but abundant labor</td>
<td>Skilled workers and Technicians</td>
</tr>
<tr>
<td><strong>HRD Policy</strong></td>
<td></td>
</tr>
<tr>
<td>• Massive migration from rural to urban</td>
<td>• Vocational Educations and Training</td>
</tr>
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<td>• Formal compulsory Education</td>
<td>• Vocational High School, Technical College, Training Center</td>
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<td>• Korean model of factory-school-dormitory</td>
<td>• National Skills Qualifications</td>
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1-7. Korean Model of Factory-School-Shelter

- By Law, large factories must operate formal schools with boarding.
- Then, youth were truly workers-cum-students.
1.8 Lessons from Korean economic growth

1. Korean people should run faster than others, but did not jump.
   - Jump was not possible in the industrial worlds
     as well as in the skills worlds.

2. HRD is not an option, but mandate to the Korean people with little natural resources.

3. Best practices of skills development have been well compensated in the Korean society.
   - Skilled workers in 1980s became the middle class in 2010s.
   - Skills are the key to success.

4. At each stage of economic development, industrial demand for skills were well aligned with their supplies.
1.9 Meaning of Initial Education to the Job World

1. **Value on Work**
   - People must work for living
   - Hard working is better

2. **Work Ethics**
   - punctuality, diligence
   - patience, cooperation

3. **Basic Employability Skills**
   - Language, Communication skill, Numerical Skill ,,,,
1.10 Meaning of HRD to the People

1. **Activate** people to the job world
   - say, peer pressure in the same training class
   - employability

2. **Match** better people to jobs
   - efficiency of labor markets

3. **Work** in more productive ways
   - productivity

4. **Stay** longer in the labor markets
   - life-time security
2. TVET System in Korea

1. Beginning in the 1970s
   - Government lead Technical Vocational Training
   - Compulsory TVET (’76): large companies were asked by Gov’t to supply mono-skilled workforce → Skill Craftsman
   - According to Economic 5 yr plan many craftsman required

2. Growth in the 1980s
   - Focus in training shifted from mono-skilled to multi-skilled and multi-functional workforce
   - Increased support for training facilities, and others at workplace
2. TVET System in Korea

3 Transition in the 1990s

- Compulsory Vocational Training → EI Training ('95)
- Compulsory training/ training levies
  → EI contributions/training subsidies
- Production workers in manufacturing
  → All workers in all industries
- Large-scale training for the unemployed during the financial crisis

4 Innovation in the 2000s

- Closer business-school links to produce professional workforce
- Life-long skills development system
- Special supports to disadvantaged workers (SMEs, non-regular, etc.)
3. National Qualification System

1. Overview

As national technical qualification system needs national framework including kinds of class, enactment of relevant law, establishment of testing organization, classification of qualification trades, making questions & management, form of test, testing procedure, and so on.

2. Definition

Qualification is one standard represented by a certificate, diploma or some evidences and recognized officially about a set of standards. As a result, qualification is an evaluation process judging whether it is suitable for the settled criteria and standards and all processes to confirm an evaluation result.
3.1 NCS

NCS (National Competency Standards)?

1) National
- Mandatory, set by the Government
- Nation-wide, Industry-wide, therefore common to industries

2) Competency
- knowledge, skill, attitude required to perform a job or task effectively
- based on industrial demand

3) Standards
- established by public authority
- common in each industry or occupation
NCS (National Competency Standards)

Common knowledge, skills, and attitude, standardized by public authority, required to effectively perform a job or task in each industry.
3.1.1 Structure of NCS

A set of competency units = National Competency Standard
3.1.2 Development of NCS


- 2003: First 5 NCS were developed (Auto maintenance, Beauty(Hair), Welding...)

- 2014: 856 NCS were developed in 24 major industrial area

- 2015: National Skills Qualification based on the NCS being developed (about 600 qualifications)

- 2014–5: Korean Apprenticeship being launched based on the NCS (about 2,000 companies participated)

- 2016 and after: Korean Model of NQF will be developed
### 3.1.3 NCS–based skills training: Korean model of dual system

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator</td>
<td>Individual company or Training center (not school)</td>
</tr>
<tr>
<td>Target group</td>
<td>People between 15 and 29 years old who want to get a job</td>
</tr>
<tr>
<td>Status of trainee</td>
<td>Worker under the Labor Law: Labor contract</td>
</tr>
<tr>
<td>Program</td>
<td>- At least 6 months up to 4 years</td>
</tr>
<tr>
<td></td>
<td>- Off-JT + S-OJT (Structured On the Job Training)</td>
</tr>
<tr>
<td></td>
<td>- Each company makes its own program based on NCS</td>
</tr>
<tr>
<td>Trainer</td>
<td>One with advanced competencies and qualifications</td>
</tr>
<tr>
<td>Evaluation &amp; Certification</td>
<td>- Project-based evaluation</td>
</tr>
<tr>
<td></td>
<td>- Government certifies trainees’ competency based on the NCS</td>
</tr>
<tr>
<td>Employment</td>
<td>More than 90% of trainees have been employed to the company</td>
</tr>
</tbody>
</table>
3.1.3 Process

Select Companies ➔ Develop Programs ➔ Recruit Apprentices ➔ Off-JT (70%) ➔ Assess Competencies ➔ Employ

Verifying Programs ➔ Monitoring Quality of Training ➔ Awarding Certifications

Ministry of Employment and Labor HRD Service of Korea
3.1.3 Further Development

Piloting (2013)

- Selecting 50 most successful firms (medium/small-sized)
- Developing training programs with firms

Launching (2014)

- 7 strategic industries (e.g. Machine, Software, Electronics)
- Selecting 1,000+ firms

Expanding (2015 ~)

- Expanding up to 10,000 firms & 70,000 trainees
- Providing standards and curricula for apprenticeship programs
- Officially recognizing the skills qualification based on the NCS
Government Supports

For companies

- **Program development cost** (per company)
  - Program development: 9,000,000 KRW (8,000 USD)
  - Teaching materials development: 3,000,000 KRW (2,600 USD) (p/c)

- **Operation cost** (per year)
  - In-company trainers’ allowances: 8,000,000 KRW (7,000 USD)
  - HRD staff’s allowances: 3,000,000 KRW (2,600 USD)
  - Training support fees: actual expenses

For apprentices (per year)

- Apprentice allowance: 4,800,000 KRW (4,200 USD)
- Boarding: 2,550,000 KRW (2,200 USD)

Source of Finance:

Training levy under Employment Insurance System introduced in 1995
3.2 National Qualification Framework (NQF)

NQF : A National framework in which alternatives of forming competencies are assessed and recognized as equi-valence
# 3.2.1 NQF Level Framework

(KSA: Knowledge, Skill, Attitude; A: Autonomy)

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Title</th>
<th>Qualification</th>
<th>Academic Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>[KSA] Creating new theory using the highest degree of knowledge and [A] Assigning the obligations and responsibilities for organization and the whole work process</td>
<td>Executive Director</td>
<td>Master Craftsman/Professional Engineer</td>
<td>Doctorate</td>
</tr>
<tr>
<td>7</td>
<td>[KSA] Not only using specialized knowledge and theory, also using related knowledge and theory [A] Assigning the obligations and responsibilities for others' consequences</td>
<td>General Manager</td>
<td>Craftsman/Professional Engineer</td>
<td>Master</td>
</tr>
<tr>
<td>6</td>
<td>[KSA] Accomplishing tasks within independent authorization [A] Using knowledge and theory relevant to field</td>
<td>Deputy Gen. Manager</td>
<td>Engineer</td>
<td>Bachelor</td>
</tr>
<tr>
<td>5</td>
<td>[KSA] Accomplishing tasks within overall authorization [A] Using knowledge and theory somewhat relevant to field</td>
<td>Manager</td>
<td>Technician</td>
<td>Associate</td>
</tr>
<tr>
<td>4</td>
<td>[KSA] Accomplishing tasks within general authorization [A] Using knowledge and theory somewhat relevant to field</td>
<td>Assistant Manager</td>
<td>Technician</td>
<td>Associate</td>
</tr>
<tr>
<td>3</td>
<td>[KSA] Accomplishing tasks within limited authorization [A] Using basic knowledge and theory relevant to field</td>
<td>Senior Staff</td>
<td>Craftsman</td>
<td>High School</td>
</tr>
<tr>
<td>2</td>
<td>[KSA] Accomplishing tasks under the supervision and basic instructions [A] Using basic knowledge relevant to field</td>
<td>Staff</td>
<td>Craftsman</td>
<td>High School</td>
</tr>
<tr>
<td>1</td>
<td>[KSA] Accomplishing tasks under thorough supervision and specific instruction [A] Using basic knowledge, understanding vocabulary, ability to calculation, etc.</td>
<td>Intern</td>
<td>Craftsman</td>
<td>High School</td>
</tr>
</tbody>
</table>
3.1.3 Development of Korea’s Skills Qualification

1. Implementation and Application of NCS

   - Focusing on Close Linkage between HRD and Qualification System based on Industry Demands

   - Reflecting industry demands to vocational education & training and qualification system under general framework of human resource development at national level.

2. Building up of Korea’s NQF

   - The NQF connects systematically work experience, vocational education and training, and skill qualifications.
4. Policy Recommendations

- Formulation of comprehensive national development plan for strategic sectors required
  - e.g., Petrochem Sector Development Plan or National ICT Master-plan
- EDB needs to coordinate with line ministries to formulate strategies
- Utilize international experience (e.g., Cyber Korea 21 Plan)

- Well-defined HRD policies corresponding to the industrial need of the future is required
  - Provision of employment information to job seekers, financial assistance for firms hiring qualified professionals in the field, provision of education and training in the field, etc.
- Co-work between EDB, Secretary of Education, and Labor Authority is required

- Implementation and monitoring of HRD programs required
- Vocational Training initiated by ex-President Park Jung-Hee
- Strong coordination between executing agency, line ministries, education and training authorities required
4.1 Identify Skills Needed in Strategic Industries

Build-up HRD Planning for Strategic Industries and Skills

**Driving Economic Growth**
- Timely supply of workforce for each phase of industrial development ("light → heavy/chemical → high-tech industry")
- Abundant quality workforce as a driving force behind the rapid economic growth

**Flexible Policy responses**
- Policy responsive to changes in industrial structure
  - Basic training in manufacturing → Basic & Upgrade training in overall industries
- Private sector-led initiatives
  - Public training → Private & Voluntary training with govt. support
4.2 Korean Model of Training Consortium for SMEs

- Trainers: 20% from Academy and 80% from Industry
- Trainees: 20% from Large Enterprises and 80% from SMEs
ex) Building-up the Training Consortium for SMEs

Operation model as a leading university “A model of university-industry cooperation to develop skills of practical engineers”

A non-active relation model

A active relation model
4.3 Skills Up for the Future

ex) Reform the Engineering Schools to train Practical Engineers

- Input-driven development
- Innovation-driven development

* Practical Engineer: engineer who can design and operate the production system
4.4 Further Discussion

• In the beginning stage, how to solve technical difficulties in designing and operating vocational training institutions and supplying qualified instructors due to the lack of experiences and expertise?

• Which governance system is to be established to build up training infrastructure and manage skills development more efficiently?

• How to coordinate criteria between skill training and qualifications testing to meet industrial demands better?

• How to provide individual workers with lifetime training opportunities whether within employed or not?

• How to combine training opportunities and employability of the unskilled?
Thank you