“Economic Development and Policies of Vocational Education in South Korea”

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I. Educational System
Formal Education System by Ministry of Education, Korea

- Kindergarten (3 yrs)
- Primary School (6 yrs)
- Middle School (3 yrs)
- General High School (3 yrs)
- Vocational High School (3 yrs)
- Vocational College (2-3 yrs)
- University (4 yrs)
- Graduate School
Education Governance

• The Ministry of Education
  - Education Minister is appointed by the President

• Office of Education (17 provinces)
  - Superintendent is elected by local residents.
  - Regional office of education

• Public Schools
  - Principal is appointed by Superintendent.
Vocational Education & Training

- **Vocational education** is implemented in the **formal education system** administered by the **Ministry of Education**.

- **Vocational training** is carried out as a non-formal learning administered mainly by the **Ministry of Employment & Labor**.
II. Economic Development and Vocational Education
South Korea - Before 1960

<Threats>
Japanese Colonization (1909-45, 36 yrs)
Korean War broke out (1950-53)
Chinese & Soviet Army (Northern Part of the territory) vs. US Army (Southern part, still station in S.K.)

<Weakness>
Little education opportunity: under-educated people
Devastated, ruined society
Limited natural resources

<Strength>
Confucian Culture
- value of learning
- patriotism
- work hard for nation, company, family
- diligence
Abundant cheap labor

<Opportunity>
Class structure destroyed
- desire for upward social mobility
- mechanism: education
Before 1960
- Traditionally agricultural society
- Government planned to shift from agriculture to manufacturing which is more value-added (strategic industry)

From 1960s
- Industrialization
- Manufacturing industries
  - general merchandise
  - light industries (e.g. textile, footwear, wig)
- Labor intensive, export-oriented industries (Low skilled low waged workers to support labor intensive industries)
Government Policies of VET to support Economic Development

• Construction of infrastructure of vocational education, 1960s
  ✓ Primary education for six years has been compulsory to support industrialization.
  ✓ Public training centers were established.
  ✓ Vocational Training Act in 1967
Transitioned to Heavy and Chemical Industries, 1970s~1980s

Petro-chemical, shipbuilding, automobile, electric, electronic industries

★ Skilled workers and technicians were nurtured
- Government designed to expand vocational high schools, vocational colleges
- Increase in in-house training system
The advent of computer in 1990s has changed all social infrastructures, even production technologies. This variation has influenced on the manpower configuration of a factory. Demands for technical manpower has been quietly changed as follows.

Demands for Technical Manpower

1970s

Engineer
Technician
Craftsman

1990s

Automation
Technology-intensive Industries, 1980s~1990s

• Shifted to technology-intensive industries
  – High demand for high-skilled, multi-skilled technicians

❖ Expansion of 2-year vocational colleges, and 4-year universities, polytechnic colleges and universities

❖ Vocational Training
  – Employment Insurance System was established in 1995 as a social safety net for the unemployed as well as employed to be trained.
## Shift to Service Industry, 1990s

### Before 1980s
- Manufacturing Industry-oriented development

### From 1990s
- Services are key industries
- Knowledge-based economy
- Knowledge intensive and more highly skilled workers were needed
  - more expansion of vocational colleges & universities, higher education
Brief History of Skills Development Policies in Korea: Industry and Export Profile

Source: Bank of Korea
Industrialization and VET

Industry: Labor-intensive ➔ Heavy/Chemical ➔ Knowledge-based

Workforce: Unskilled Labor force ➔ Skilled Labor force ➔ Creative talent

Ed Investment: Primary/Middle ➔ High school/Voc. Ed. ➔ Higher Ed./lifelong
Knowledge-based Economy In 2000s

- IT, BT, NT, CT, ST, ET… knowledge intensive, more highly skilled workers were needed
- Labor cost raised high with increase of national income and more educational achievement.
- Low labor cost was not a comparative advantage for Korea any more
- Many developing countries retain lower waged labor-force
- Then high skills and knowledge are more needed to develop competitive knowledge economy
Creative Economy in 2013~

- Knowledge creation
- Idea oriented industries which benefit human living
- Added Value
- Core labor force to support creative economy with creativity, humanity, sensitivity, character
Step-by-step expansion of education to universal education:
primary → secondary → higher (tertiary) education

(Trow, “Forms and Phases of Higher Education”:
Elite <15% → Mass 15-50% → Universal >70%)
1965-1995: 100-times increase in GDP per capita from around $100 (1965) to $10,000 (1995), only in 30 years. Drastic development as shown in the graph

1995-currently: Entering a new phase in GDP per capita: increase two times in 15 years from $10,000 in 1995 to $21,529 in 2011
Schools: Then and Now
Seoul: Then and Now
Han River: Then and Now
Students: Then and Now
Night time factory school for young female workers in 1970s
III. Success Factors of Development
Success Factor 1. Government’s Leadership

Government initiated industrialization implementing a series of “Five-year Economic Development Plans”


- Government initiative to decide development path and allocation of resources, capital and labor
- Saemaul Undong
Success Factor 2. Leadership of Private Sector

- The major domestic companies such as Samsung, Hyundai, Kia, POSCO, LG, and Daewoo (shipbuilding, automobiles, construction, IT, heavy equipments) opened in the 1960s~1970s, have grown up and played key roles as global players.
Success Factor 3. Human Resources Development = Education and Training

<Chart> Pop. attained at least upper secondary ed. (2013)

The diagram shows a dichotomy between old and new generations, as indicated by the different age groups 25-34 year-olds and 55-64 years-olds.
Success Factor 4. Cultural Factors to support HRD

Confucian Culture: Positive influence

- People’s indigenous enthusiasm for education and work
- Diligence to work hard
- Aspiration for upward social mobility
- Loyalty to nation, workplace, and family
Confucian Culture: Negative influence

- Gender discrimination
- Patriarchal System
  - Men > Women
  - Son > Daughters
  - Husband > Wife
- Hierarchy
  - King as monarch
  - People as retainer
# Higher Education Enrollment Rates

<table>
<thead>
<tr>
<th>Year</th>
<th>Total (%)</th>
<th>Male (%)</th>
<th>Female (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980 (elite)</td>
<td>15.9</td>
<td>23.4</td>
<td>8.1</td>
</tr>
<tr>
<td>1990</td>
<td>33.2</td>
<td>55.6</td>
<td>24.3</td>
</tr>
<tr>
<td>1995 (mass)</td>
<td>55.1</td>
<td>63.8</td>
<td>34.4</td>
</tr>
<tr>
<td>1997</td>
<td>68.8</td>
<td>85.7</td>
<td>50.9</td>
</tr>
<tr>
<td>2000 (universal)</td>
<td>80.5</td>
<td>89.1</td>
<td>60.7</td>
</tr>
<tr>
<td>2008</td>
<td>83.8</td>
<td>84.0</td>
<td>82.2</td>
</tr>
<tr>
<td>2011*</td>
<td>72.5</td>
<td>70.2</td>
<td>75.0</td>
</tr>
<tr>
<td>2012</td>
<td>71.3</td>
<td>69.0</td>
<td>74.3</td>
</tr>
<tr>
<td>2013</td>
<td>70.7</td>
<td>67.4</td>
<td>74.5</td>
</tr>
<tr>
<td>2015</td>
<td>70.8</td>
<td>67.6</td>
<td>74.6</td>
</tr>
</tbody>
</table>

Source: Korean Education Development Institute (KEDI) 2014, Statistics Korea (KOSTAT) 2014

Notice: The counting formula has been changed from the number of accepted applicant to the number of enrollment (2011)
IV. Reform Policies of Vocational Education
Crisis of VET

- Mismatch in demand and supply for jobs due to rapidly growing number of college graduates
  - Shortage of low-skilled labor force to response to the demand of industries high-school graduate workers
  - Over supply of higher education resulting in youth unemployment rate increase

- Stigmatized as a second-class education for low-achieving and non-college bound students: avoidance of VE
• Ongoing disdain for VE and declining numbers

• Practical capability through cooperation between schools and industries is emphasized.
Trends in Number of VHS Students (1965-2013)
(unit: 10,000 persons)

Number of general high school students
Number of Vocational high school students

<Source: Korean Education Development Institute (KEDI) 2013>
Trends of secondary and post-secondary vocational education

<Vocational high schools>

<Vocational colleges>

* Source: Korean Education Development Institute
### Wage Differences by Educational Attainment

<table>
<thead>
<tr>
<th>Year</th>
<th>High School Graduates</th>
<th>Vocational College Graduates</th>
<th>(4-yrs) University Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>100</td>
<td>103.6</td>
<td>152.3</td>
</tr>
<tr>
<td>2006</td>
<td>100</td>
<td>108.0</td>
<td>155.4</td>
</tr>
<tr>
<td>2009</td>
<td>100</td>
<td>112.5</td>
<td>155.2</td>
</tr>
<tr>
<td>2011</td>
<td>100</td>
<td>115.9</td>
<td>156.5</td>
</tr>
<tr>
<td>2012</td>
<td>100</td>
<td>115.0</td>
<td>167.0</td>
</tr>
<tr>
<td>2013</td>
<td>100</td>
<td>116.0</td>
<td>164.0</td>
</tr>
</tbody>
</table>

Low-skilled Labor Market opened to Foreign Workers

- **Number of Foreign workers**
  In 2003: 351,000 (legal 61,000 + illegal 290,000)

  ★ **In 2004 Work permit was institutionalized**

  In 2009: 461,203
  In 2012: 908,944
  (legal 588,944 + illegal 320,000 estimated)

Reform of vocational high schools in 2007~

- Specialized Vocational High School,
- Meister High School
Vocational High Schools

- To provide skilled workers
- Innovative vocational high school policies
  - Specialized vocational high schools
  - Meister high schools
- Major areas: engineering, commerce, management, agriculture, home economics....
1. Specialized Vocational High Schools

- Number of vocational high schools: 498 (2015)
  - 21% of total number of high schools 2,322
- Number of vocational high school students: 302,021
  - 24% of total number of high school students 1,278,008

- Educational System
  - Develop basic core competency needed in one’s career life
  - Offers industry-demand oriented and customized curriculum with practical field training opportunities
  - Teachers with industrial experience
  - Provide field trip opportunities to selected students with outstanding quality to companies overseas
Specialized Vocational High Schools

• Graduates can choose to enter the labor market or to go to colleges.

• The curriculum respond to the needs of the industries.

• Unless the educational conditions fulfill the requirements as vocational high schools, they are asked to transfer to general high school by the Ministry of Education.
2. Meister High Schools: VET Reform

★ Meister High Schools are selected from specialized vocational high schools to produce young meisters more advanced than specialized vocational high schools (= master or master craftsman in German term)

Transition period for one year

- Before opening selected SVHS prepare the conditions of meister high school with government funding: curriculum, textbooks, facilities, equipment, teaching faculty, staffs, cooperation with industries
V. Vocational Training
Number of Trainees who underwent Vocational Training during the 2\textsuperscript{nd}(1967~) to 7\textsuperscript{th}(1992~) National Economic Development Plans

![Graph showing the number of trainees who underwent vocational training during the 2\textsuperscript{nd} to 7\textsuperscript{th} National Economic Development Plans. The graph includes data for the total number of trainees and the number of trainees involved in in-plant training. The data peaks in the 7\textsuperscript{th} National Economic Development Plan, reaching a total of 1,006,822 trainees.](image)
Employment Insurance (funding project for vocational training) was established by the Ministry of Employment and Labor in 1995 as a social safety net.

- levy-grant
- Training both for the employed (Job skills development program), and the unemployed (Unemployment benefits)

- Employment Stabilization Program
- Job Skills Development Program
- Unemployment Benefits
Polytechnic Colleges

• Publicly funded post-secondary vocational education and training institutes under the Ministry of Labor
• Provide two year programs to train multi-skilled technicians and 1-24 month programs to train master craftsmen in the specialized area of technology using employment insurance fund from 1995
• 11 polytechnic colleges, 34 campuses with a total enrollment of more than 10,000 students.
• 15,155 multi-technicians, and 325 master craftsmen are produced every year.
Seoul-Jeongsu Campus
Korea Polytechnics

Textile-Fashion Campus
Korea Polytechnics
Polytechnics in Korea

- The KOPO, head quarter of Korea Polytechnics, was separated from HRD Korea that established by MOL, in 1998.
- The KOPO is the biggest VT institution in Korea and trains about 20,000 technicians a year and over 85% of graduates are employed at enterprises.

**[Training Courses]**

- **College Graduates**
  - 2 years
- **High School Graduates**
  - 2 years
- **Craftsman**
  - 1 ~ 2 years
- **Residents**
  - 1 month ~ 1 year

**Polytechnics**

- **graduate**
  - Bachelor Deg
  - Associate Deg
  - No Degree

- **Engineer**
- **Technician**
- **Master Craftsman**
- **Craftsman**
Polytechnic Colleges

• Specialized Training Policies
• FL System
  – Factory Based Learning: Same Training Circumstance as Factory
  – Training Curriculum based on Job/task Analysis
• Extension of Convergence Technology
  – Technology combined with other Technology or Human Studies
• Strong Relationship with Companies
  – Various Affairs based on School-Industry Cooperation
  – One Professor connected with Ten Companies
  – Company centered Customized Training
Present Status of KOPO

- **Short-term Training Courses**: Up-grade, Residents, Inferior, Women, etc
- **Most of Training Dep’t concentrated on Technology Field.**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Training Dep’t</th>
<th>Regular Course</th>
<th>Short-term Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Trainee</td>
<td>(142)</td>
<td>Engineer: 400</td>
<td>Technician: 15,725</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Craftsman: 6,770</td>
<td></td>
</tr>
</tbody>
</table>
Industry & Academia Cooperation

• Companies pay high cost for reeducation of new employees
  – 20 months, 55,000 US dollars

• To minimize this reeducation cost, companies cooperate for college education
  - development of curriculum and textbook together, lecture, seminar, field training, internship

• SME global champions are needed

• (Location-wise, advantage of industrial complex)
Educational System of Korea

Age vs School Year

- Elementary School: 6 years (6-12)
- Middle School: 6 years (12-18)
- High School: 3 years (15-18)
- Vocational HS: 3 years (15-18)
- Vocational College: 3 years (18-21)
- University: 4 years (21-25)

VET Sector
- KUT
- Polytechnics
- VTIs

Compulsory Education

MOE

MOEL
## Classification of the Korean VTIs

<table>
<thead>
<tr>
<th>Classification</th>
<th>No.</th>
<th>VTIs/Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>2,777</td>
<td></td>
</tr>
<tr>
<td><strong>Public VTIs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-Total</td>
<td>79</td>
<td></td>
</tr>
<tr>
<td>Public Org.</td>
<td>40</td>
<td>KOPO, KUT, KEPAD</td>
</tr>
<tr>
<td>Local Govern.</td>
<td>8</td>
<td>Seoul, Other Provinces</td>
</tr>
<tr>
<td>Min. of Justice</td>
<td>31</td>
<td>Inmates’ Vocational Competency</td>
</tr>
<tr>
<td><strong>Private VTIs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-Total</td>
<td>2,698</td>
<td></td>
</tr>
<tr>
<td>Trg. Corporation</td>
<td>55</td>
<td>Non-profit Corporations</td>
</tr>
<tr>
<td>WRD Center</td>
<td>51</td>
<td>Women’s Vocational Competency</td>
</tr>
<tr>
<td>MOEL Designated</td>
<td>823</td>
<td>Individual Designated VTIs, KCCI</td>
</tr>
<tr>
<td>Others</td>
<td>1,769</td>
<td>Companies or Associations, etc.</td>
</tr>
</tbody>
</table>
VI. Directions of Vocational Education
Industry-Academia Cooperation

• Industries should invest in the workforce development and increase the field training opportunities to students, who would be their human resources in turn.

• Currently the government plans to implement “work-learning dual system” for vocational high school students.
Work-Learning Dual System

• The companies employ temporary student workers to train in the fields during a certain period (6-12 months).

• The student workers are evaluated and decided to be employed regular position.

• This system may help solve the skills mismatch in the labor market and reduce youth unemployment.

• The system intends improvement and substantialization of the field training system to enhance the field adaptability, and eventually help employment of students.
Work-Learning Dual System

• The government should support the small and medium sized enterprises to exercise the system properly and effectively.

• Industries provide opportunities to 7,000 student workers to experience in 1,300 companies in 2014; 70,000 in 10,000 companies in 2017.


• Quality control of field training program is necessary.

• Collaboration of Ministries can attain better results.
**Improvement in TVET system**
- Introduction of field-oriented training system through dual system of work & learning
  - Companies select high caliber student workers, and education and training curricula combined OJT and Off-JT
  - In European countries (Germany, Switzerland …) student apprenticeship is implemented practicing OJT actively.
- Academic achievement or qualification is granted upon evaluation of results following completion of education and training.

- Companies: manpower utilization
  Individuals: income earning through employment + possibility of acquiring both academic achievement & qualification

- Wage is partially supported by the government.
VII. Cooperation between India and Korea
The Korea Research Institute for Vocational Education and Training is a national policy research institute that conducts and provides policy options for vocational education and training. (established in 1997)

- It is a government-funded public institution, under the Prime Minister’s Office, that supports strengthening the Korean public’s lifelong career competencies, support national policy on human resources development and lifelong vocational competencies.

Total number of staff: 435 (Regular position 162 / Temporary position 273)
162 staff (71%) are researchers (most of them hold doctoral degrees)
Policy Research for MOE and MOEL

• Due to the nature of ‘Vocational Education and Training’ as a point where both education and labor concerns meet, KRIVET has maintained a close partnership with two ministries in particular - the Ministry of Education and the Ministry of Labor - regarding TVET and HRD policies and policy implementation.

• Research focused on VE and labor market policies:
  - policy of vocational schools, colleges, universities
  - development of industrial labor force
  - lifelong learning, human resources development
  - career development
  - qualifications
Total of 142 regular staffs

- Researcher: 77%
- Administrative Supporting Staff: 23%

Areas of specialization

- Education: 22.05%
- Vocational Education: 15.29%
- Economics: 27.41%
- Engineering: 7.06%
- Sociology: 5.88%
- Educational Tech, Biz, Law, Admin, Politics: 11.7%
Global Cooperation

• KRIVET is a UNESCO Regional Center of Excellence in Asia Pacific area.

• International networking with international organizations (UNESCO, OECD, CEDEFOP..), government agencies, and research institutes (BIBB, CEREQ, SWIFET, Eupolis Lambardia, OAED, NCVER, IAL, CETE, INCE, …)
**International Organizations**

- UNESCO, World Bank, CEDEFOP, Colombo Plan Staff College for Technician Education, SEAMEO VOCTECH (Brunei)

**Government Agencies**

- Institute for Adult Learning (Singapore), National Council for Technical and Technological Education (Sudan), Science And Technology Education Post-Basic Project (Nigeria), Ministry of Education (LAO PDR), Ministry of Public Education (Mexico), State Administration of Foreign Experts Affairs (China), Ministry of Education and Culture (Paraguay), Ministry of Employment and Labor and Security (Paraguay)

**Research Institutes**

- CICA (Australia), Cereq (France), CETE (USA), CIVTE (China), BIBB (Germany), NCVER (Australia), NIVT (Vietnam), SIHRD (China), SFIVET (Switzerland), TVTC (Saudi Arabia), VNIES (Vietnam), JILPT (Japan), ECSSR (UAE), INCE (Venezuela), TCTE (Taiwan), Eupolis Lombardia (Italy), OAED (Greece), TEVETA (Zambia), RSMC (Kazakhstan), School of Industrial & Labor Relations, Cornell University (USA)
India

- SWOT analysis
- Young and abundant population (strong point and weak point)
- Abundant natural resources (petroleum etc.)
- Low participation rate in labor market
- Reduction of informal industries
- Diversity,
  - still establishing education/training policies and systems

☞ Job-creation: key industry, strategic industry in the labor market
Directions of Cooperation with Korea

• Maximize comparative advantages of each other

• Activate collaboration through communication, exchanging development experiences and best practices each other
  - holding regular forum, analysis of needs and demands
  - contracting MOU between NCERT and Ministry of Education (Korea), or KRIivet (Korea Research Institute for Vocational Education and Training)
    - exchanging human resources so that we can learn from each other closely
- **Establishment of Government Policy Research Institute on VET** and collaboration with KRIVET
  - KRIVET (Korea); BIBB(Germany), NCVER(Australia)
  - Joint research (Outlook of Industrial workforce)
  - Exchange researchers
  - Joint (co-organizing) workshop, seminar
  - Sharing publications, experiences, information toward mutual development
  - Developing partnership with Ministry of Education, KRIVET, KERIS, …
Establishment of education & training system

- Model of Korea’s vocational training and education to support economic development
  - systems, policies
Role of TVET in national development

Training of Skilled Manpower

- Achieved #1 in a row since the 23rd (1977) World Skills Competition.

- Being placed 1st 17 times, including the 2013 competition in Leipzig, Germany.
Korean Model: Lessons

• A model of education-driven national development
  - Experience from desperate poverty to world 14th economy
  - GNI per capita: US$ 87 (‘62) → 26,204 (’13) * 200 times during 5 decades
  - Economic growth supported by sequential investment in education

• Particularly, it fits for those countries better
  - With few natural resources, but greater dependence on human resources
  - For countries highly-advanced systems hardly work
  - Having a centralized governance system and cultural legacy
Korean Model: Lessons

• **Government-led education development initiatives.**
  - In an early stage, policy coordination among stakeholders are necessary.
  - Strong government leadership is asked.

• **Step-by-step approach in consideration of economic situation**
  - Given the budget constraint, strategic investment is inevitable

• **Korean parents’ interest and fever for education and training**
Thank you!