Best Practice of South Korea

“Education to Work Transition and Transferable Skills”

Ji Sun Chung, Ph. D. (KRIVET)
I. Economic Development and Education & Training

II. Expansion of Vocational Education in the Process of Industrialization

III. Challenges of Vocational Education IV. Reform Policies to increase Youth Employment

IV. Vocational School Reform Policies

V. Performance and Improving Perception for VPET

VI. Directions of VPET
I. Economic Development and Education & Training
Expansion of Education to Support Economic Development

• Education and training has been expanded closely related to rapid economic development.
  
  - economic point of view, government-lead policy goal setting, select & concentration strategies, and policy implementation.

• Societal point of view, when the social class structure collapsed (Korean War, Japanese Imperialism), people regarded education is social ladder for social upward mobility.

• Cultural point of view, in Confucian culture, learning and work are important values and influenced aspiration for education.
In 30 years, 1965–1995, 100-times increase in GDP per capita from US$100 (1965) to $10,000 (1995) in 30 years.
VET Strategies in Response to Industrialization

1st – 2nd 5YEDP (1960s)
- Export-led growth – light industry (textile, wig)
- Comparative advantage: cheap abundant labor
- VE: Industrial Education Act (1963)
  - compulsory primary ed. For 6 yrs.
- Vocational high schools increased
- VT: Vocational training Act (1976)

3rd - 4th 5YEDP (1970s)
- Heavy & Chemical Industrialization
- Ship building, automobile, petrochemical, electric, electronics
- VE: Vocational Colleges increased
- VT: Compulsory In-plant Training
- Establishment of HS & Public Training Centers - ADB, IBRD loan
- National Qualification Act (1973)
VET Strategies in Response to Industrialization

1st – 2nd 5YEDP (1960s)

3rd – 4th 5YEDP (1970s)

5th – 6th 5YEDP (1980s)

7th 5YEDP (1990s)

- Technology-intensive industry
- VE: University, College ed.
  - High skilled, multi skilled
- Industry-Education Cooperation, Curriculum Reform

- Low-cost, high efficiency economy
- VE: Universities, polytech colleges
Step-by-step expansion:

primary → secondary → tertiary education
II. Expansion of Vocational Education in the Process of Industrialization
Skills Development Policies in Korea: Industry and Export Profile

Source: Bank of Korea
Success Factor 1. Government’s Leadership


- 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

In the land no natural resources, no accumulated capital, but human resources is the only factor for economic development.

<Tertiary Educational Attainment by Age Cohort>

Success Factor 4. Cultural Factors to support HRD

Confucian Culture: positive side

- People’s indigenous enthusiasm for education and work
- Diligence to work hard
- Aspiration for upward social mobility
- Loyalty to nation, workplace, and family
Students: Then and Now
Night time factory school for young female workers in 1970s
III. Challenges of Vocational Education
Educational System of Korea

- Primary School (6 years)
- Middle School (3 years)
- General High School (3 years)
- Vocational High School (3 years) – S, M
- Vocational College
- University (4 years)

VET Sector:
- MOE
- MOEL
- Compulsory Education
- VT
- KUT
- Polytechnics
- VTIs

Age vs. School Year:
- 12 years: Primary School (6 years)
- 15 years: General High School (3 years)
- 18 years: Middle School (3 years)
- 22 years: University (4 years)
- 24 years: General High School (3 years) – S, M
# Higher Education Enrollment Rates

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollment Rates (%)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>1980</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</td>
<td>55.1</td>
<td>63.8</td>
<td>34.4</td>
</tr>
<tr>
<td>2000</td>
<td>80.5</td>
<td>89.1</td>
<td>60.7</td>
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<tr>
<td>2008</td>
<td>83.8</td>
<td>84.0</td>
<td>82.2</td>
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<tr>
<td>2011</td>
<td>72.5</td>
<td>70.2</td>
<td>75.0</td>
</tr>
<tr>
<td>2013</td>
<td>70.7</td>
<td>67.4</td>
<td>74.5</td>
</tr>
<tr>
<td>2016</td>
<td>69.8</td>
<td>67.6</td>
<td>74.6</td>
</tr>
</tbody>
</table>

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

* The counting formula has been changed from the number of accepted applicant to the number of enrollment (2011)
Issue 1. Mismatch and Youth Unemployment

- Skills mismatch in demand & supply in the labor market
  - resulting in increase in youth unemployment rate
- SMEs lack human resources, while college graduates are unable to find qualitative jobs they want.
- Shortage of high school graduate workers
- Even 70% of vocational high school graduates went to college, while 10%~20% get jobs after graduation.
- Wage gap based on education, regular and irregular workers, and gender
## 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>164.0</td>
</tr>
<tr>
<td>2013</td>
<td>100</td>
<td>115.0</td>
<td>150.0</td>
</tr>
<tr>
<td>2014</td>
<td>100</td>
<td>112.0</td>
<td>145.0</td>
</tr>
</tbody>
</table>

Source: OECD Education at a Glance (EAG)
Increase in Youth Unemployment

Chart showing the increase in youth unemployment from 2000 to 2017, with categories for 15+, 15-29, and 15-24.
Issue 2. Disdain for VE

- Ongoing disdain tendency for VE and declining numbers of VE students

- VE is stigmatized as a second-class education for low-achieving and non-college bound students: avoidance of VE
Trends in Rates of VHS Students
Issue 3. Shortage of High School Level Workforce

- Needed for skilled workers
- Labor market opened to foreign workers
- Number of Foreign workers
  - In 2003: 351,000 (legal 61,000 + illegal 290,000)
  - Work permit was institutionalized in 2004.
  - In 2016: 1,120,000
Supply and Demand of New Manpower by Educational Level, 2011~2020
Issue 4. Weak Partnership with Industries

• There is a lack of partnership between industry and academia to set common goals, joint investment and pursuit of mutual benefits.

• Industries do not participate in nurturing human resources needed actively. Government organizes on-the-job training programs for practical capability of students.
IV. Vocational School Reform Policies
Work First, College Later focused on vocational high schools

• Secondary vocational education emerged as important policy focus of the Ministry of Education.

• In order to improve the quality of vocational education, the reform policies of vocational high schools were established from 2008.

  (1) Specialized vocational high schools
  (2) Meister high schools
  (3) Apprenticeship
  (4) Expansion of Vocational Students Proportion
“Work First, College Later” Policy focused on vocational high schools

• Vocational students are encouraged to work first and possibly continue their studies later. Policy measures include:

  ✓ **Special admission**: vocational school graduates with work experience 3 yrs. can apply to colleges without national entrance exam.
  
  ✓ **Access to courses**: industry commissioned education, Korea National Open University, credit bank system, and cyber universities
  
  ✓ **Scholarships** for vocational high school graduates
  
  ✓ **Global Training Program** provides opportunities to gain work experience abroad for 3 months.
(1) Specialized Vocational High School

• Naming Specialized VHS in 2008
• Emphasizing industry-academia cooperation
  - Curriculum should be distinctly specialized in its own area responding to needs of regional 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 School
- elite vocational high school

• Meister High Schools are selected among specialized vocational high schools

  \[ meister = master \text{ or master craftsman in German term} \]

• School transition period for one year

  - Before opening **the conditions of meister high school is prepared with best curriculum, textbooks, facilities, equipment, teaching faculty, staffs, cooperation with industries**

• Small scale and concentration on promising fields related to the region’s strategic industries
Vocational High Schools

(1) Specialized vocational high schools (497) (students 290,632) - regular vocational schools

(2) Meister high schools (48) (students 5,210) - selected elite vocational schools first opened in 2010
(2) Meister school - Incentives to Students

- No tuition fee, scholarship, dormitory (room and board)
- 4-year delay in joining military service after employment
  - To serve the army as a non-combatant in one's own area of expertise (policy of conscription, military service is compulsory for healthy males.)

- Overseas training (studying abroad)
  - Major areas: focusing - machine, media, mobile, bio, semiconductor, energy, medical appliances, automobile, electronics, ship, steel, aviation, port and logistics, marine, robot, eco agro-livestock, petrochemistry, fishery and marine products, horse industry, overseas construction, shipbuilding, software, food
(2) Meister school - Strong Partnership with Industries

- Contracting MOU with large companies and promising companies to cooperate education and employment.
- Development of curriculum, textbooks and graduate certificate system jointly with industries.
- High employment rate for large companies and promising companies.
- Meister high school was set up as a model of vocational education to increase the employment of graduates from secondary vocational schools.
Establish agreement and cooperative system between meister high school and industry

MOU with Samsung Electronics (Dec. 2010)
- employed 113 students

NOU with Hyundai Automobile
- plans to employee 1,000 students for ten years

- MOU between KITECH, Korea Craftsman Association and MEST (11.5.12)
  * KITECH: support for root industries (molding, casting, welding and plating)
  * Korea Craftsman Association: provide on-site experience and knowhow.
(2) Meister School
Employment and Continuing Education

- **Stable employment after graduation**
  - Employment rate: 90%~91%

- Meister school graduate workers are evaluated as excellent and likely to develop.

- 70.9% of the meister graduates answer that there is no discrimination against them within the workplace.

- They may continue college education
  - Opportunities to go to college (special admission to university) with 3-year work experience
  - College education after work evening time
(2) Meister school - Quality Control of Education

• **Open recruitment of principals**
  - *CEO from industries are welcome (24 of 48 meister schools)*
• If the school does not keep the standards of meister school it is downgraded back to specialized vocational high school.
• **Secured meister faculty**
  - adjunct faculty members from industry
• **Excellent students are attracted.**
Increase in Employment Rate of Vocational High School Students
(3) Apprenticeship

- Apprenticeship education (Germany, Switzerland system) was introduced to enhance field adaptability, to solve skills mismatch, and to reduce youth unemployment. (2015~)

- Work-learning dual system, apprenticeship, is working in association with industries and schools, MOE and MOEL.

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

- The companies employ temporary student workers to train in the fields during a certain period (6-12 months).
- Apprenticeship companies should have at least 20 employees and a strong will to train the manpower.
- They should secure facilities and personnel capable of long-term training in a stable manner.
- Wage is partially supported by the government, MOEL.
- The student workers are evaluated and decided to be employed regular position.
- Number of apprenticeship schools, enterprises
## Participation in Apprenticeship

(as of January 2017, HRD Korea, MOEL)

<table>
<thead>
<tr>
<th>Number of / Years</th>
<th>Schools</th>
<th>Firms</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>9</td>
<td>270</td>
<td>952</td>
</tr>
<tr>
<td>2016</td>
<td>57</td>
<td>556</td>
<td>1,657</td>
</tr>
<tr>
<td>2017</td>
<td>198</td>
<td>2,435</td>
<td>6,788</td>
</tr>
</tbody>
</table>
(3) Apprenticeship School
Industry-Academia Cooperation

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

• Corporate Social Responsibility
  - Need to find firms appropriate for students apprenticeship education
  - To share information about the benefits offered to businesses about apprenticeship education
  - To enhance the sense of mission of corporate field teachers
  - To apprentice teachers incentives is required to develop competencies and responsibility for student education.
Trends in Rates of VHS Students

- General HS rate (%)
- Vocational HS rate (%)

Year: 1965 to 2016
(4) Expansion of Proportion of Vocational Students

Supply and Demand of New Manpower by Educational Level, 2011~2020

![Bar chart showing supply and demand of new manpower by educational level. The chart is labeled as follows: High School, Vocational College, 4-yr university, Graduate School, Total. The y-axis represents the number of new manpower, ranging from 0 to 6000. The x-axis represents different educational levels. The chart indicates the supply and demand for each level, with supply represented in purple and demand in green. The demand generally exceeds the supply across all educational levels, with the highest demand in the Total category.](chart.png)
Entrance quota to vocational school

The number of applicants for vocational high school exceeds the quota.
- Some students who want to enter vocational schools should go to general high school.

![Bar chart showing entrance quota and dropped from entrance from 2011 to 2015](chart.png)
Policy of MOE

**Vocational Students**
30% of high school students by 2022

**Method**
Management of regional offices, evaluated by MOE

**Employment Rates**
60% employment by 2022
To increase the proportion of vocational students

- Increase in number of classes
- Transition from general high school to vocational high school
- Moving to appropriate place or establishment new school
- Financial support from the MOE and Office of Education
  - employment-enhancement program
  - curriculum development
  - facility and equipment supplement work
- Monitoring
  - employment rated, recruitment, maintenance, majors, students…
V. Performance and Improving Perception for VPET
Increase in Employment Rate of Vocational High School Students
Improving Social Perception of VPET

- Excellent students are attracted to vocational schools - increasing number of applicants to meister schools. (2:1)
  *Aviation Science Technical HS is the most selective (11:1)

- Employers are overall satisfied with the performance of meister school graduates (*KRIVET, 2016*)
  - 86% of employers reported they will continue to hire meister school graduates.

- Some graduates of vocational HSs still face disadvantages compared to university graduates (*KRIVET, 2016*)
  - 28% of MS graduates reported having experienced discrimination for being a high school graduate
Improvement of Social Perception on TVET

• Vocational school graduates estimate they are in charge of higher than high school level. 16.9% (2011) → 26.5% (2013)
• In the past vocational students were from low socio-economic background, today meister students for a variety of reasons.
Top Performance at the World Skills Competition

Training of Skilled Manpower

- Korea claimed victory (achieved 1st place in terms of medals) for the 19th time and 5th time in a row in 2015 at the 43rd competition held in Brazil.
Implications

• Government-led policy implementation in the process of quantitative development was efficient.
• For the development of vocational education, leadership of the government and budget support are influential.
• Recent vocational school reforms have been successfully improved public perception of vocational education.
• The link between VPET and labor market should be strengthened to boost skills development.
• Incentive policies are necessary to awaken the businesses to be aware that VPET is also corporate social responsibility
VI. Directions of VPET
New Paradigm of VPET

• A long-term VPET policy should be pursued to meet the demand of rapidly developing science and technology, with the advancement of high technology, AI, big data, robot machine …., facing so called the fourth industrial revolution.

• High-skilled technicians, engineers, and scientists are in demand, and STEM (science, technology, engineering, mathematics) education gets more attention.
  - VPET not only at the high school level, but also college and university level should be focused on.
• New paradigm of VPET is focused on creativity, originality, thinking ability logically, emotional sensibility, expertise, conversion technique, start-up capacity, pioneering spirit rather than rote learning by repetition.

• Learning agility and basic job skills should be stressed in curriculum and teaching and learning methods.
  - to cultivate basic skills to adapt to any change
  - to adaptation to rapid changes in work environment, organizational culture, and work style

• Software education can enhance creative ideas, computer-based problem solving skills, programing skills, algorithm.
  - More than 34 hours in the middle school education from 2018
  - 19 hours in the primary education from 2019, in Korea
Growing demand for Core Work-related Skills

- WEF forecasts increase in core work-related skills, 2015-2020
  - cognitive abilities (52%)
  - systems skills (42%)
  - complex problem-solving skills (40%)
  - content skills (40%)
  - process skills (39%)
  - social skills (37%)
  - resource management skills (33%)
  - technical skills (33%)
  - physical ability (31%)
VPET Colleges responding to the Industry 4.0

• With the rapid development and change of technology and skills, lifelong learning should be structured to acquire skills that are difficult to catch up with school education alone.
  - VPET program should be focused and enlarged in the area of lifelong learning.
• Higher education institutions should become more flexible and open to diverse groups of lifelong learners.
  - Colleges should be reorganised as lifelong vocational professional educational institutions.
• It would also be worthwhile to establish and operate a professional college, like Meister high school, that is a model of excellent vocational education.
Thank you!