

# Vocational Education and Training in Korea: Achieving the Enhancement of National Competitiveness

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## I. Introduction

### Background of Vocational Education and Training in Korea

The Republic of Korea, or called South Korea, is located in Northeast Asia. The national territory of South Korea extends 99,392 square kilometers, which is slightly smaller than Guatemala and larger than Portugal. The size of the Korean Peninsula, which combines both South and North Korea, is 222,154 square kilometers, similar to the United Kingdom and Romania. Seoul is the capital city and the remaining land of South Korea (hereinafter referred to as “Korea”) is divided into 16 areas administered by respective local governments; six metropolitan cities, eight provinces and one special self-governing province.

<Figure 1> Map of the Republic of Korea



\*Source: Korea Tourism Organization homepage (<http://english.visitkorea.or.kr/enu/index.kto>)

Given its geopolitical situation, Korea was put through a number of checkered events throughout its history:

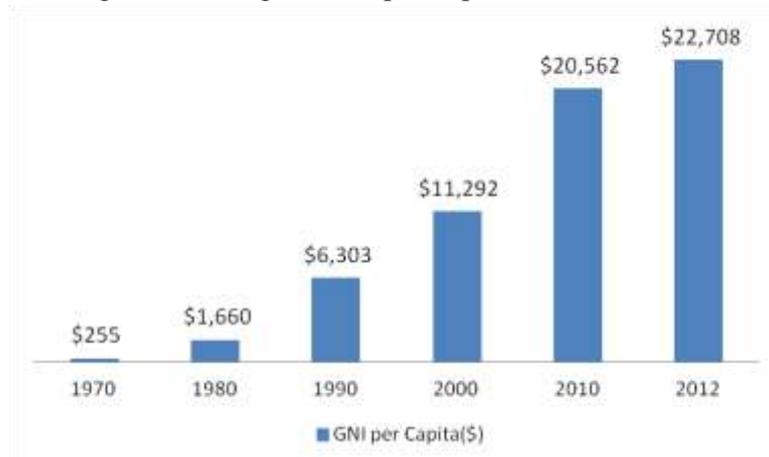
- The Korean Peninsula frequently changed hands among monarchs and the most recently one was Joseon Dynasty which had existed until the early 20<sup>th</sup> century.
- Joseon Dynasty came under the Japanese colonial rule (1910-1945) and then in 1945 the foundation of the Republic of Korea was declared with the inauguration

of the first democratic government.

- The Korean War broke out in 1950 and ended in 1953 with the Korean peninsula divided into the North and the South under a ceasefire agreement.
- Since 1990, South Korea has achieved successful social and economic development, acclaimed as one of the fastest growing nations in the world. .

As of 2013, Korea ranks 15<sup>th</sup> largest economy in the world with US\$1,197.5 billion in GDP and US\$26,205 in GNI per capita.<sup>2</sup>

<Figure 2> Change in GNI per Capita from 1970 to 2012



\*Source: Bank of Korea Economic Statistics System 2012

As of 2014, the population of Korea is 50,423,955 and population density is 486 people per square kilometer, which is higher than the global average. Between 1960 and 2010, the birth rate of Korea decreased from 6 to 1.23 births per woman to the lowest level among OECD member states. On the other hand, average life expectancy rapidly increased; 77.2 years for men and 84.1 years for women today. From 2011 to 2020, the number of workers aged 54 or below is expected to reduce, while those aged 55 or above will increase. As a result, the nation's overall workforce is forecast to decrease in line with shrinking population and rising median age, turning Korea into an aging society.

Another noteworthy feature of demographics in Korea is the higher education level of workers. This issue will be looked into with more details in Chapter II.

In addition, <Figure 3> compares unemployment rate among 10 major OECD countries in 2013. Korea ranked the lowest at 3.12% but the joblessness rate of young people is as high as 9.17%, or 5<sup>th</sup> highest among them. When compared with countries which have advanced vocational education systems, such as Germany, Japan, and Switzerland, the rate of unemployment of young Koreans was higher.

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<sup>2</sup> International Monetary Fund

<Figure 3> Unemployment Rate of Total and Youth Age (20-24) in 2013

(Unit : %)



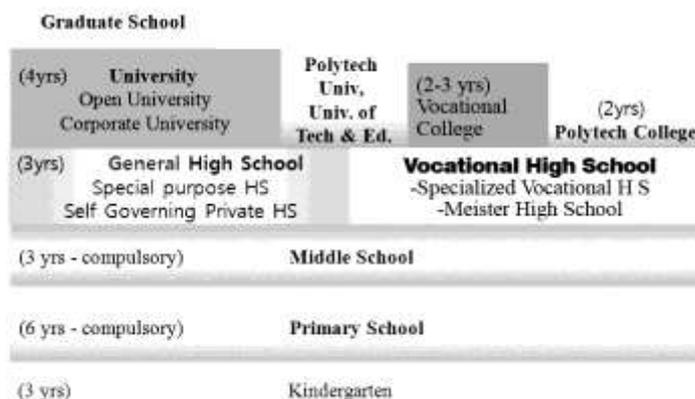
\*Source: OECD Stat Extracts.

### Overview of Education System in Korea

Korea's education system is structured as shown in <Figure 4>; six years in elementary schools (primary education), three years in middle schools and three years in high schools (secondary education) and further years in institutions for higher education. Major features include:

- The first nine years is compulsory education; from primary to middle schools (which focus on teaching basic knowledge and curriculum).
- In Korea, vocational education begins in high schools. Middle school graduates can choose to go to either general high schools or vocational high schools. General high schools get students ready to advance into institutions of higher education such as university, while vocational high schools train students to join the labor market after graduation.
- Among the institutions of higher vocational education, there are vocational colleges, poly-tech universities, universities of technology and education, poly-tech colleges and corporate universities.

<Figure 4> Education System in Korea



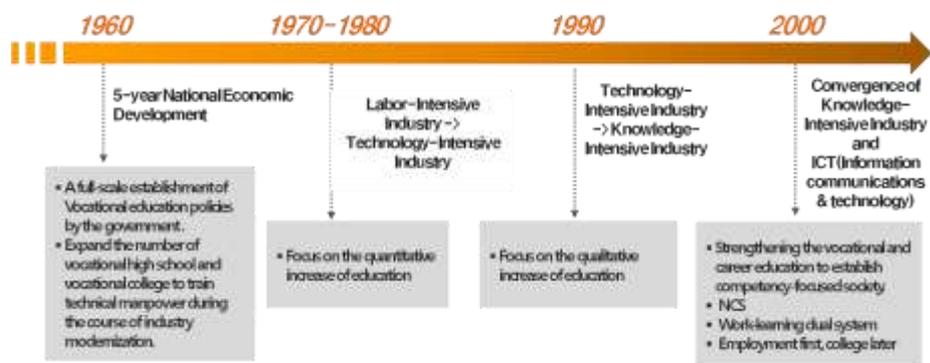
\*Source: KRIVET(2012). Vocational Education and Training in Korea.

## II. The History of Vocational Education and Training in Korea

### Development and Current Status of Vocational Education in Korea

Vocational education policies in Korea were established in full-scale from the 1960s along the implementation of the 5-year National Economic Development Plan. As shown in <Figure 5>, the government played a key role in the development of VET since the economic development plan was established in the 1960s.

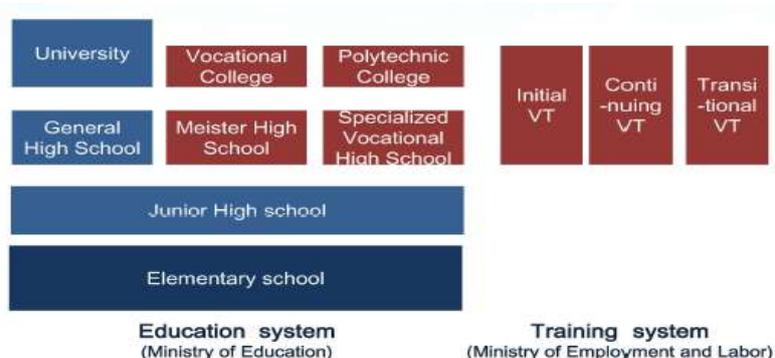
<Figure 5> Development of Vocational Education and Training in Korea



The key features of the VET system include:

- Education is regarded with a high priority in Korean society
- Vocational education and vocational training are not mutually integrated (Figure 6)
- Existing education and training systems are mostly led by the government.
- (Currently) the government is committed to the strengthening of vocational education and training; Meister High School (MHS), National Competency Standards (NCS), and Work-learning dual system
- Workplace training is not systematically provided under the VET system.
- Lack of standards to control the quality of workplace training (OECD recommendations, 2013<sup>3</sup>)

<Figure 6> Education and Training System in Korea



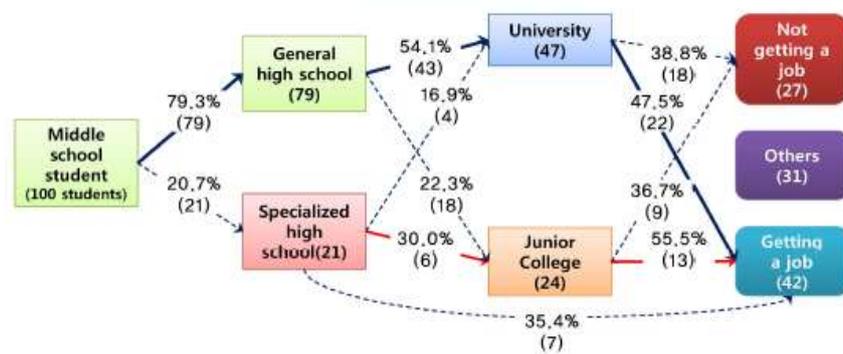
<sup>3</sup> <http://www.oecd.org/newsroom/koreashouldboostsupportforlaid-offworkers.htm>

<Figure 7> shows the career paths through which middle school student enter the labor market in Korea (as of 2013). Suppose the total number of middle school students were 100 in 2013:

- The number of middle school graduates who entered ‘specialized high schools’ was very low (21 persons).
- Among high school graduates, those who applied to ‘university’(47 persons) and ‘junior college’(24 persons) were considerable in number, while the number of graduates who ‘get a job’ were excessively small(7 persons).
- Among university or college graduates, a number of people ‘not getting a job’ and ‘others’ (58 person) exceeds those who opt to ‘get a job’ (42 persons).

<Figure 7> Career path of students after graduation from middle school (as of 2013)

(Unit: Person)



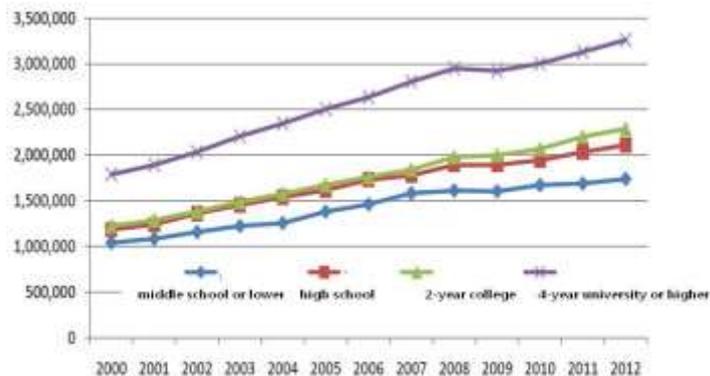
\*Source: KRIVET(2012). Vocational Education and Training in Korea.

\*\*note: ‘Others’ imply a total number of graduates who ‘applying graduate school’, ‘joining the army’

In of the labor market of Korea where people with higher education earn higher income, high school graduates prefer entering 4-year universities as the next step in their career paths. As shown in <Figure 8>, in 2012, the monthly wage of high school graduates was lower than that of 4-year university graduates by about KRW 1,000,000. In Korea’s labor market, job seekers’ academic background is regarded with greater weight than their competencies, which social perception undermines the development of vocational education.

<Figure 8> Gross monthly income by educational level in Korea

(Unit: KRW, won)



\*Source: Statistics Korea. “Survey of working condition by type of employment”

Since 1980, Korea has maintained a policy to provide high school graduates with more opportunities of higher education. To promote the rate of high school graduates advancing into institutions of higher education, the following measures were taken:

- Regulations to restrict the establishment of 2- or 4-year colleges were relaxed
- Existing institutions were allowed to increase their student enrollment.

Consequently:

- College education became more common among the youth.
- The average level of education of Koreans rapidly improved.

As shown in <Table 1>, Korean students' advancement rate to the next level of education has continuously increased, though the advancement rate of high school graduates into universities or 2-year colleges has fallen recently.

<Table 1> Advancement Rate by Educational Level

(Unit: %)

Year	Advancement rate		
	Elementary → Middle	Middle → High	High → College
1980	95.8	84.5	27.2
1990	99.8	95.7	33.2
2000	99.9	99.6	<b>68.0</b>
2010	99.9	99.7	<b>79.0</b>
2014	99.9	99.7	<b>70.9</b>

In this regard, the government has continuously promoted policies to revitalize vocational high schools in Korea Since 2008. Under the Korean school system, vocational education and general education are divided at the high school level. In recent years, the government of Korea introduced several VET policies to raise the employment rate of high school graduates and to ease the trend that middle school graduates do not prefer vocational high school. Those policies included:

- Specialized (vocational) high school
- Meister High School (MHS)
- First employment, Later college

Currently, vocational high schools in Korea are categorized into three groups; specialized high schools, Meister high schools (MHS), and comprehensive high schools<sup>4</sup>.

### Recent Trends and Issues of Vocational Education Policies in Korea

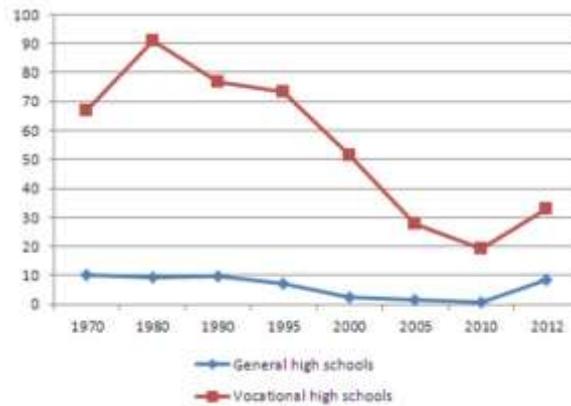
Since 2010, the employment rate of vocational (industrial) high school graduates has been on the rise. The government put high priority on the full-fledged incorporation of vocational education into high school curriculums as part of its policies to develop vocational education, the employment rate of vocational high school graduates has

<sup>4</sup> Comprehensive high school is a high school which general education course and vocational education course are both established.

rebounded since 2010, which is shown in <Figure 9>.

<Figure 9> Changes in the Employment Rate of High School Graduates (1970~2012)

(Unit: %)



\*Source: KRIVET (2012). Vocational Education and Training in Korea.

<Figure 9> shows positive progress made by VET policies, which is considered as the outcome of endeavors to transform Korea from an academic background-oriented society into a competency-focused society. Several policies in Korea, such as Meister High School (MHS) and “Employment first, College later” policy, were typical models of vocational education. The main advantages of these models are defined as follows:

- Independent curriculum that respond to industrial demand
- Establishment of school-work links.

In addition, graduates from vocational high schools found more employment opportunities in promising sectors and industries and large companies. It seems that the employment of high school graduates has improved both quantitatively and qualitatively.

On the other hand, there were also some concerns that graduates from vocational high schools may still face disadvantages compared with university graduates in terms of promotion, pay raise, etc. Such discrimination against high school graduates, associated with lower academic background, used to be a long-standing tendency of Korean employers.

In order to address the issue and conduct the "Employment First, College Later" policy effectively, the following measures were taken:

- Consistently increase the number of specialized high school students.
- Promote high-quality supportive systems and policies to encourage students who want to go to college with a certain job experience.

### III. Major Policies of Vocational Education in Korea

Recently, three major polices for vocational education were implemented in Korea as follows.

## Specialized (Vocational) High School

The education system of specialized high schools is divided into 5 major courses; agriculture industry, manufacturing industry, IT business, ocean/fisheries and vocational home economy. <Table 2> is the current status of schools in Korea. In 2013, the number of specialized high schools was 470 (about 20.24% of all high schools), and the number of students enrolled in specialized high schools was 317,445 (about 16.76% of all high school students).

<Table 2> Current Status of Schools in Korea (April, 2013)

(Unit : school, person)

Level of school	School	Class	Student	Teacher
Elementary school	5,913	119,896	2,784,000	181,585
Middle school	3,173	56,843	1,804,189	112,690
High school(total)	2,322	59,405	1,893,303	133,414
Meister high school (MHS)	34	782	15,728	2,082
Specialized high school	470	11,473	317,445	26,328
Comprehensive high school	109	2,200	64,084	4,914
Self-Governing Private High School	165	4,758	149,760	10,508
Other high school	250	382	47,704	8,871
<b>Total</b>	<b>11,658</b>	<b>236,526</b>	<b>6,529,196</b>	<b>436,560</b>

\*Source: Ministry of Education & KRIVET (2013). Handbook of specialized, comprehensive, and Meister high school.

\*\*Note: Comprehensive high school is a high school which general education course and vocational education course are both established.

<Table 3> shows the status of specialized high schools in 2013. As shown in the table, the most common course taught in specialized high schools was manufacturing industry (194 schools, 41.28%), followed by IT business (186 schools, 39.57%) vocational home economy (8.72%), agriculture industry (8.51%), and ocean/fisheries in that order.

<Table 3> Current Status of Specialized High Schools (April, 2013)

(Unit : school, person)

Major course	School	Class	Student	Teacher (general)	Teacher (trainer)	Teacher (others)
agriculture industry	40	704	17,405	613	792	245
manufacturing industry	194	5,146	143,217	4,639	6,244	1,232
IT business	186	4,745	134,260	4,851	4,688	1,043
ocean/fisheries	9	126	3,056	119	131	43
vocational home economy	41	752	19,507	724	765	199
<b>total</b>	<b>470</b>	<b>11,473</b>	<b>317,445</b>	<b>10,946</b>	<b>12,620</b>	<b>2,762</b>

\*Source: Ministry of Education & KRIVET (2013). Handbook of specialized, comprehensive, and Meister high school.

Specialized high schools are described as:

- Vocational education school at the secondary level
- To produce high-quality technical workforce
- To strengthen students' specialization in major industries; agriculture industry, manufacturing industry, IT business, ocean/fisheries, and vocational home economy.

In 2008, the Ministry of Education and Science Technology (MEST)<sup>5</sup> re-categorized existing vocational high schools into specialized (vocational) high schools on the basis of the major courses they were specialized in. On the other hand, vocational high schools which lack competitiveness were turned into general high schools.

According to relevant domestic laws, specialized high schools are defined as follows:

*Schools that provide education to foster workforce in specific areas and experience based education such as field training etc. for students with similar talents, aptitudes, and abilities*

(Article 91-1, Enforcement Decree of the Elementary and Secondary Education Act)

In addition, the 2+2 curriculum linkage system between specialized high schools and junior (2-years) colleges was introduced:

- To reflect the demands of industrial fields
- To consider student's talent

In conclusion, specialized high schools were promoted as one of the solutions to address the lack of technical manpower in an aging society where the number of people with higher educated increases.

### **Policies to revitalize Specialized High Schools**

Students in specialized high schools are encouraged to get a job first and possibly continue their study later, rather than going straight to colleges upon graduation. To that end, several policies were implemented as follows:

- To increase special admissions for graduates from specialized vocational high schools; Specialized high school graduates who work at a business for at least 3 years can apply to colleges without having to take the national college entrance exam
- To admit specialized high school graduates to corporate universities, contract department programs, industry commissioned education, the Korea National Open University and the credit bank system, and specialized cyber universities
- To increase scholarship for specialized high school graduates who attend universities

Furthermore, the government has operated the Global Field Training Program for specialized high schools since 2011, in an effort to revitalize specialized high schools. This program aims at fostering technical manpower armed with global competency and practical work capabilities. To this end, the program provides specialized high school students with

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<sup>5</sup> Ministry of Education and Science Technology (MEST) has reorganized as Ministry of Education (MOE) in 2013.

opportunities to gain work experience at foreign companies. Under the program, students spend 3 months on field placement in countries that have advanced technologies, in consideration of students' majors and required technical manpower.

### **Meister High School (MHS)**

Among specialized schools, those which provide high-quality vocational education are chosen by the government as Meister high schools (MHS). There are some important features of MHS. These include:

- The curriculum of these schools is tailored to industrial needs based on agreements with specific industries.
- Graduates from MHS are required to get a job, while graduates from specialized high schools can make a choice between going to college or getting a job.

The key concept of the MHS policy is "Employment First, College Later" so that it can actively deal with the imbalance between the supply and demand of manpower. For this reason, the major purposes of MHS are:

- To conduct substantial vocational education at the high school level.
- To produce highly competent technical manpower which satisfy the needs of specific industry.

As of 2013, a total of 34 MHSs are in operation (about 7.23% of specialized high schools) and the total number of students enrolled with MHS is 15,728 or 5.0% of the total number of students at specialized vocational high schools. The development of MHS can be described as follows:

- In March 2010, 21 MHSs were founded.
- In 2011, no new MHSs were founded, while 21 MHSs were in operation.
- In 2012, 7 MHSs were founded. A total of 28 MHSs were operated.
- In 2013, 7 MHSs were founded. A total of 35 schools were operated. In addition, the total number of students enrolled with MHSs was 15,728.
- In March 2014, 2 MHSs was founded, and 37 MHSs are now in operation in total.

In order to choose MHS between specialized high schools, above all, ministries and government departments consult strategic industries and areas which require intensive national support for development. On the other hand, when it comes to strategic local industries, the superintendents of education in cities and provinces recommend specialized high schools in consideration of strategic local industries, suitability of majors, and basic school conditions. Through the processes of recommendation and deliberation, the Ministry of Education makes the final decision on the selection of MHSs.

### **Step-by-Step Strategies to Build Up MHS**

The Step-by-step policies of MHS<sup>6</sup> are as follows:

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<sup>6</sup> Ministry of education and science technology, 2008,

**Strategy 1:** Establish career path for ‘Meister’

- To increase alternative services to military duty available to MHS graduates
- To continue study even after employment so as to acquire bachelor's degrees
- To land jobs in foreign countries

**Strategy 2:** Reform regulations on MHS’s education

- To give schools autonomy in selection of curriculum and text books
- To recruit experienced CEOs from businesses as a principal of MHS
- To recruit industrial experts as Meister teachers
- To recruit students with high growth potential from across the country (no geographical restriction in student recruitment)
- To make MHS customized to industrial needs; focus on promising fields of industries and cope with industrial demands, particularly strategic local industries.

**Strategy 3:** Provide support & promotion at the national level

- To charge no tuition from students and provide scholarships
- To send students to overseas vocational schools for advanced training
- To expand facilities for students, such as dormitory and equipment

**“Employment First, College Later” System**

“Employment First, College Later” system is a policy to establish a foundation for continuous open employment for high school graduates. In 2008, the Korean government announced the plan to encourage the employment of high school graduates. After the announcement, policies to revitalize vocational education were implemented, such as specialized high school and the MHS system. The announcement stated:

- To encourage local companies to employ high school graduates.
- To make jobs appropriate for high school graduates at public institutions
- To discover successful cases of companies which hired high school graduates, and to strengthen PR to disseminate cases among employers.

In addition, vocational colleges were encouraged to make enthusiastic participations to provide major course opportunities related with current work or interests of high school graduate employees, under the industrial commissioned education system. These requests include:

- To provide flexible curriculum such as night, weekend, and night-weekend dual class.
- To provide on-line classes.

<Table 4> Supportive Policies of Vocational Education in Korea at the middle level  
(Since 2008)

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**Strengthen support for specialized high school**

- In 2010, the government planned to reform existing 691 vocational high school to 50 MHSs and 350 specialized high school.
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- Since 2012, tuition of specialized high schools has been free.

**Promoting MHS**

- MHS is special-purpose high school in vocational education. The policy aims to establish 50 MHSs in Korea until 2015.
- In 2013, 34 MHSs were established.

**Establish “Employment First, College Later” System**

- It is an employment supportive system for specialized and MHS students. After graduation, graduates of these schools can get a job first and develop their career. If they want to complete a major course, they can complete the course while keep their job.
- Give exemption of entrance exam of college to support employee that is specialized high school graduates.

**Encourage employment of high school graduates at the national level**

- The arrangement has been made between public institution, local government, public enterprise, major company, MHS, specialized high school lead by Ministry of Education.

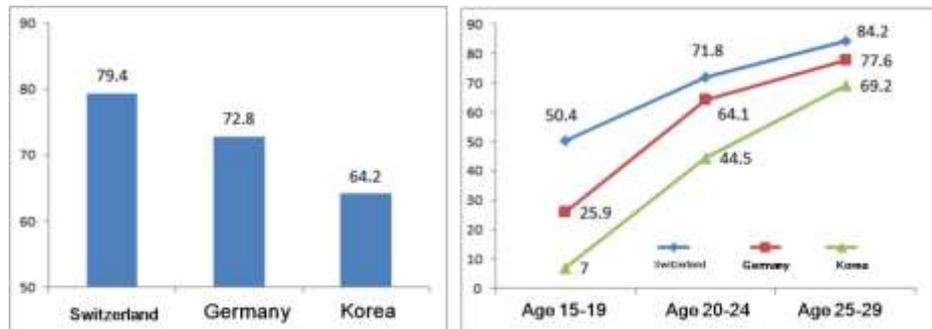
\*Source: KRIVET(2013). Current status and revitalization task for the employment of high school graduates. National Economic Advisory Council.

## IV. Remaining Difficulties and Challenges

### Low employment rate of young people in Korea

In comparison with Germany and Switzerland, the low employment rate of youth people in Korea was due to the gap between industrial fields and VET. In other words, there was a mismatch in the labor market, which was caused by the lack of high-quality jobs. As shown in <Figure 10>, the gap among the three countries was significant when it comes to youth aged between 15 to 24, especially 3 times greater between 15 to 19.

<Figure 10> Employment Rate of Economically Active Population and Youth age (2012, Unit: %)



\*Source: Organization for Economic Cooperation and Development(OECD)

In particular, vocational education in Switzerland offers good lessons to Korea which has a high unemployment rate of young people. Switzerland operates the VET (Vocational Education and Training) system which is an apprenticeship-based education program with the following features;<sup>7</sup>

- At the age of 16, students in vocational schools enter into employment contracts with companies. They spend half a week in school to learn theories and the other

<sup>7</sup> Korea Joongang daily, Thursday, 23th, October, 2014 ( <http://joongang.joins.com/article/853/16199853.html?ctg=>)

half in the companies to learn work skills.

- 58,000 companies operate more than 80,000 vocational education programs as part of the VET system.

As a result, in Switzerland, only 29% of high school graduates go to universities (as of 2009) but the unemployment rate of young people is 7%, the lowest among OECD member countries (as of 2013). On the other hand, Korea is rather an opposite case. 78.3% of high school graduates advanced into universities but the unemployment rate of young people was 10.9% (as of 2014), which indicates the necessity to strengthen vocational education further.

In addition, there is no ‘glass ceiling’ at workplaces in Switzerland, and vocational school graduates do not face such discrimination in promotion, etc. with some of them even reaching the top post of companies as CEO. Workers in Switzerland are hardly discriminated by reason of their educational background.

Therefore, the innovation of vocational education system is very much needed in order to enhance the employment rate of young people and to turn Korea into a society where competence is valued more than educational background.

### **Emerging issue in the industrial field: ‘Skill Mismatch’**

There are no objective standards to measure work performance. And employers do not expect that graduates fresh out of school have the actual work competency needed at workplace. For these reasons, many companies spend huge re-education costs for new employees. In 2009, the average period of training for new employees was 18 months, and the cost of re-education was \$ 6,088.<sup>8</sup>

At the same time, it is difficult to directly connect educational curriculums in school with demand of industrial fields due to the lack of information on what kinds of job competencies are needed for specific occupation.

### **Provider-centered HRD Governance such as schools, institutions & government**

Unlike advanced countries such as Germany or Switzerland, Human Resource Development (HRD) in Korea is led by vocational education institutions (or providers). In this situation, current issues and risks are as follows:

- There is a mismatch between educational training institutions and industrial fields, and therefore it seems difficult to respond to the change of employers’ demand with current vocational education and training.
- The institutions of vocational education provide theory-centered education. Hence, their training has limitation in the development of employees’ competency.
- The ‘College Later’ system has weak relevance with practical work knowledge and skills. Due to this, some employees apply to major courses only to get a bachelor’s degree.

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<sup>8</sup> Korea employers federation, 2009

It is natural that the contents and scale of vocational education and training should be determined by needs of industrial fields. Nevertheless, decision making on the VET system is mostly led by the government and education providers. Due to this situation, there are some emerging issues such as:

- Schools develop own curriculum by the guideline of government.
- The occupational type and size of training institutions depend on trainees' need.
- Education providers have neither strong intent nor capabilities to accommodate industrial needs, and the supportive system of government is not enough.

### **Lack of support by companies for “Employment First, College Later” System**

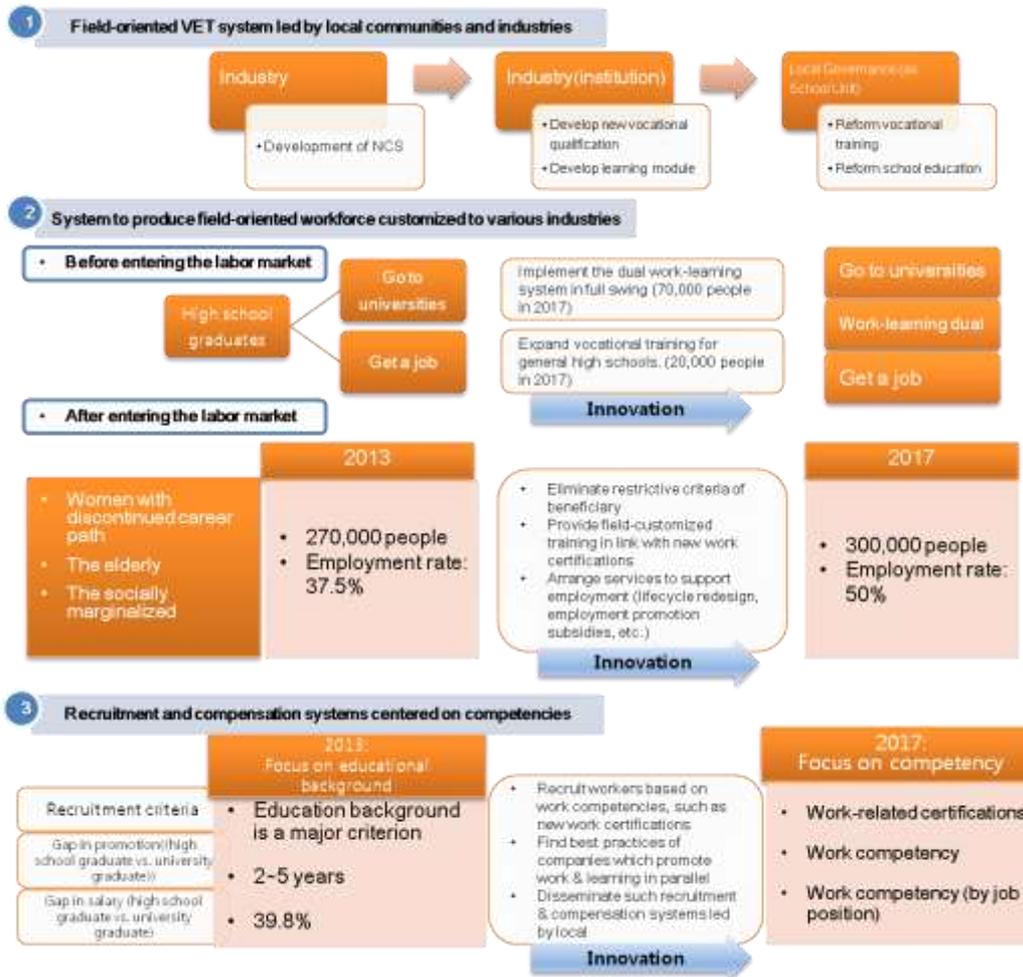
In General, employees who graduated from high school prefer taking further learning opportunities such as college education. Considering the fact that academic education is highly valued in the Korean labor market, preference of employees seems to take for granted as a long-term point of view for career development and assuring the opportunity of extra economic activity. In addition, there are many high school graduates who quit their jobs to enter colleges or universities. Therefore, more effective support should be provided in order to back up high school graduates in the labor market to pursue higher education, or called ‘College After’ are required, such as night class in college, corporate university.

The working environment or culture in small medium-sized enterprises (SMEs) emerge as the barrier of the “Employment First, College Later” System. These barriers include:

- Due to production schedule or day-night shift in SMEs, it is difficult for employees to hold down a job and pursue education at the same time.
- Workers find it difficult to concentrate on learning due to frequent overtime work, and unofficial meetings.

## **V. New System and Policies in Vocational Education**

<Figure 11> Future direction of vocational education and training policies in Korea



\*Source: Ministry of Employment and Labor (2014). Press release 26<sup>th</sup>, September, 2014.

## Development and Expand of National Competency Standards (NCS)

The context of NCS development is an endeavor to foster a competence-based society instead of an academic background-oriented society in Korea. The background of NCS development is as follows:

- Nowadays in Korea, due to many difficulties to get a job and worries about getting a job, the majority of young job seekers look to acquire job-related qualifications such as foreign languages and IT or gain overseas job experience.
- There is an excessive supply of workforce with higher education in the labor market of Korea and therefore people are landing their first jobs in life at a later age than before, while the mismatch between job and education still remains unattended.

Meanwhile, the vocational qualification system in Korea has been operated separately from National Occupational Standards (NOS) and Korea Skill Standards (KSS) by the Korean government. There were concerns that it could undermine international recognition of Korean standards in mutual recognition with national qualifications and human resources exchange.

In this regard, the Korean government plans to unify these standards into National Competency Standard (NCS). Key features of NCS are:

- The national standard system of knowledge, skills, and attitude which are required for workplace.
- Scientific and systemic standards to measure the competency of employee, such as planning capability, professional knowledge, work performance, and ability of market analysis.
- Development of human resources to satisfy employers' requirement

Under NCS, all industries are categorized into 24 sections, 77 divisions, 226 groups, and 856 classes. It is available for all companies in Korea. About 240 priority fields, such as chemistry, electric, and electronic, were developed in 2013. In 2014, other undeveloped fields (318) except the number of developed fields (269) are developing.

<Table 5> Category of industrial fields at NCS development

(Unit : area)

Section	Division	Group	Class	Section	Division	Group	Class
Business management	1	1	3	Food service	1	2	8
Business accounting & administration	4	11	25	Construction	8	24	102
Finance & insurance	2	9	35	Machinery	9	27	113
Education, natural & social science	3	5	13	Materials	2	7	34
Law, police, firefighting, correction, national defense	2	4	15	Chemicals	4	10	31
Health care	2	7	33	Fiber & clothes	2	7	22
Social welfare, religion	1	5	13	Electric & electronics	3	22	67
Culture, art, design, broadcasting	3	8	55	Information & telecom	3	11	63
Transportation	4	7	26	Food processing	2	4	20
Sales	3	7	17	Printing, word, furniture, craftsmanship	2	4	23
Security, cleaning	2	3	6	Environment, energy, safety	6	17	48
Accommodation, travel, entertainment, sports	4	12	42	Agriculture, forestry, fisheries	4	12	42

Standard levels of NCS span from basic knowledge required in each industry, such as literacy and calculation, to the creation of new theories by using the most advanced knowledge in each industry.

As shown in <Table 6>, NCS is comprehensive standard which are available to employers, vocational educations, and qualification exams. Advantages of NCS for these stakeholders are:

- Companies and employers can accurately evaluate the work performance of each employee by utilization of NCS.
- Employees can check competency requirement for promotion and their own competency by using self-diagnosis tool available on the NCS website ([www.NCS.go.kr](http://www.NCS.go.kr)).

<Table 6> The Utilization of NCS

Job, Workplace, Employer	Education and training institute	Certification authority
<ul style="list-style-type: none"> <li>▪ Development of lifelong career path model</li> <li>▪ Checklist for employment, placement, promotion</li> <li>▪ Self-diagnosis tool of work performance</li> </ul>	<ul style="list-style-type: none"> <li>▪ Development of vocational education and training course</li> <li>▪ Development of teaching plan, contents, and textbook</li> <li>▪ Development of training standard</li> </ul>	<ul style="list-style-type: none"> <li>▪ Establishing new type of qualification</li> <li>▪ Development and reformation of qualification guideline</li> <li>▪ Making questions and methods for the test</li> </ul>

The launch of a NCS-based education system is expected to bring about changes in various aspects from curriculum to evaluation, teachers, industry-school cooperation and education environment as shown in <Table 7>.

<Table 7> Education system after introduction of NCS

	Traditional education system	NCS-based education system
Curriculum	• Contents of text books are delivered within time limit.	• Achieve performance criterion based on competency (set by NCS)
	• Designed to achieve general education objectives centered on industries	• Designed to achieve human resources development objectives centered on jobs
	• Curriculum irrelevant to industrial fields	• Curriculum to meet the demand of industrial fields
	• Disconnection between school education and job certification	• Connection between school education and job certification
	• Passive education with a set number of subjects	• Active education to develop capabilities suggested by NCS
	• Learning only within school	• Learning in and outside school
Evaluation	• Evaluate understanding of text books	• Evaluation centered on performance
	• Evaluation by teachers and school,	• Outside institutions (industries) participate in evaluation.
	• Use evaluation result to coach students' learning performance	• Use evaluation result to prove students' job competency
Teachers	• Deliver the contents of text books	• Design and operate school curriculum
	• Required to effectively deliver the contents of text books	• Required to have the ability to plan and design curriculum
Industry-school cooperation	• Industries make passive participation in school education	• Industries actively participate in overall education process (curriculum planning, development, operation, evaluation)
Education environment	• Teaching hours and student headcount per class: difficult to develop individual students' talents	• Focus on practical training, Reduce teaching hours and student headcounts per class to improve students' skills
	• Use learning facilities in school only	• Use learning facilities in school and local communities

### Introduction of Work-learning dual system

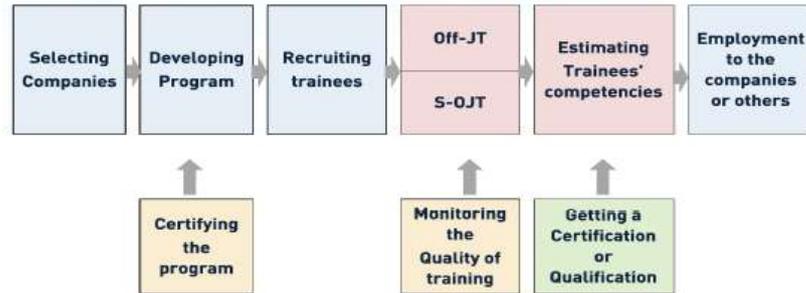
The work-learning dual system is an apprenticeship system based on the concept of “Work-based learning”, with some modifications to fit the Korean VET system; Korean-style apprenticeship as shown in <Figure 12>. Key features of the work-learning dual system include:

- Company that selected by government provide NCS-based systemic training program and textbook with field trainer (not school teacher) to trainees. After complete the program, trainees can get a national certification according to their

training result which is evaluated by company

- When selected as trainees, young job seekers and students take apprenticeship at companies or training institutes to improve their competencies.
- Existing field training programs in Korea take no more than 6 months. On the other hand, the new system will take 1~ 4 years, as long-term training programs.
- To improve the utilization of this training program in the labor market, trainees that complete the course will be granted a degree or certification.

<Figure 12> Procedure of Work-Learning Dual System in Korea



The work-learning dual system is a collaborative system for both young job seekers and employers. Under this system, trainees are employees who are protected by law. Therefore, budget, dismissal, insurance, and other contract conditions of trainees are guaranteed as much as those of regular employees. In addition, there is traineeship funding for trainees who want to complete a major course. After they complete the course, the trainees can get a certification by the final test result.

Meanwhile, as <Table 8> shows, there are some conditions for companies which want to join the work-learning dual system; priority is placed on industrial fields with high demand of skilled workers, capability to offer field training and decent jobs but for which no proper school curriculum are available.

<Table 8> Condition of Companies in the Work-Learning Dual System

Size	Field	Task	Field trainer
<ul style="list-style-type: none"> <li>▪ Company that hire at least 50 employees</li> <li>▪ In some exceptional cases, company that less than 50 employees can participate in.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cultural contents</li> <li>▪ Construction</li> <li>▪ Mechanic</li> <li>▪ Material</li> <li>▪ Chemical</li> <li>▪ Electric/Electronic</li> <li>▪ IT</li> </ul>	<ul style="list-style-type: none"> <li>▪ Task and work performance need to be skilled through apprenticeship</li> <li>▪ Simple-repetitive task that require short-term training is rejected.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Company that has high skilled expertise who can teach at the field training.</li> </ul>

Through the task analysis and interview with employers, the education and training programs customized to the companies are developed and provided.

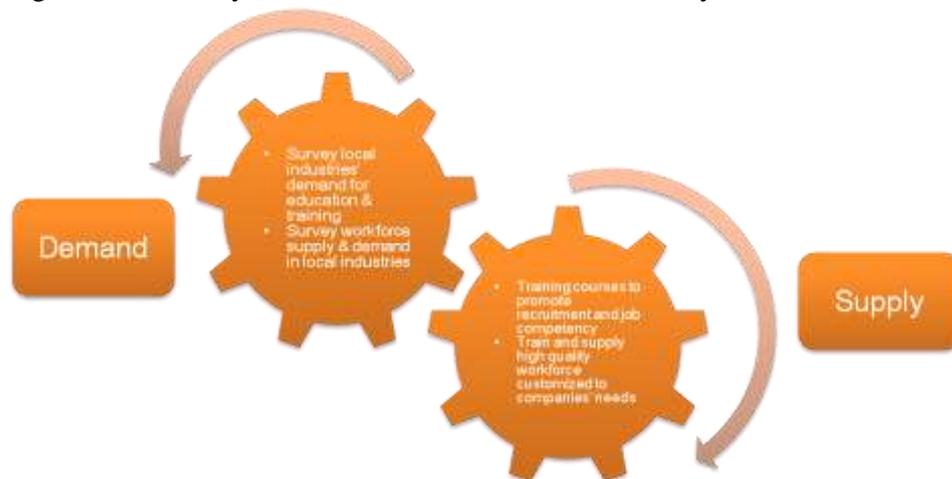
### Establishment of Local & Industry Customized HRD System

The Local & Industry Customized Human Resource Development (HRD) System is a policy to resolve the shortage of manpower in Small Medium Enterprises (SMEs) and to

raise the rate of employment. According to this new policy, the existing HRD system will be reformed and unified, which showed low efficiency of provider-led training programs for the unemployed and lower demand at the training program for SMEs employees. As shown in <Figure 13>, purposes of the local & industry customized HRD system include:

- To provide companies and industries with education and training programs customized to their demand of workforce.
- To promote the participation of the disadvantaged, such as career-interrupted woman and the aged in training programs, so as to increase manpower and technological advancement in SME, which will eventually increase employment rate.

<Figure 13> HRD System for Customized Local Community & Industries in Korea



\*Source: Ministry of employment and labor (<http://upgrade-u.tistory.com/>)

The establishment of a new HRD system is an endeavor to realize industrial-led systems that respond to the demand of labor in local companies. In this respect, the group management system of human resources will be established with a systemic process. Some major points of the process are as follows:

- Above all, an industry-led committee for local HRD should be established.
- Led by the committee, industrial training institutes should be selected; Group search for demand - Group education and training – Employment.
- By reflecting the demand frequently occurs as the nature of local industry and company, basic training (for the unemployed) and upgrading training (for employees) should be linked while conducting these training.
- The local community will have practical authority with searching the local demand and setting up the operation plan. At the same time, there will be monitoring and evaluation for the result to govern the quality of this system.

## VI. Conclusion : Reflections for Costa Rica

### Directions for Future Development of Vocational Education Policies in Korea

The future directions for the Korean VET System are as follows:

- Transition from government-led to an industry-led system
- Strengthen the role of industries (sector council, firms)
- Quality management of training programs (through training regulation)
- Reorganization of qualification systems based on NCS(National Competency Standards)
- Coordinating the level and content of training program with NQF(National Qualification Framework)

### **Advice for the Development of Vocational Education in Costa Rica**

First, developing a systemic model of vocational education is the best way to realize "school-to-work and work-to-school" and to establish a lifelong learning system. In the era of knowledge-based society and lifelong learning society, there are needs for various policies to establish the lifelong vocational education system. Based on the development model for vocational education, the lifelong vocational education system has to quickly respond to the changes of the labor market. In addition, these systems must be delivered to learners effectively. In conclusion, a circular learning system should be established where practical learning, employment, and actual work are inter-connected.

Second, focus on cultivating institutes of vocational education and training, such as vocational high schools and vocational colleges, at the national level. To improve the quality of vocational education and the competency of students, financial support by the government is needed. Furthermore, policies to strengthen the connection between local industries and vocational education institutions should be reinforced.

Third, the introduction of a 'Costa Rican apprenticeship system' could be the one of desirable ways to develop vocational education and training in Costa Rica. There are four benefits offered by an apprenticeship system to as follows.

- Responsive to changes in the labor market
- Stepping stone for young people to enter the labor market
- Higher rate of employment for young people
- Development of good quality workplace training

Korea's apprenticeship system is modified to fit the VET system; Work-learning dual system. As previously stated, key features of the work-learning dual system include:

- Companies (not schools) provide training to apprentices directly
- Thoroughly planned Structured On-the-Job Training(S-OJT)
- Duration: 6 months to 4 years
- Contract: Apprentice versus Employer
- Selecting companies with good technical skills and competencies
- Getting a job after finishing the program
- Getting a national certification according to the trainees' training results

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