

Skills for Work

Knowledge Sharing Forum on Development Experiences: Comparative Experiences of Korea and Latin America and the Caribbean

Kirak Ryu
Hanna Moon

**Knowledge and Learning
Sector**

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Kirak Ryu
Hanna Moon

Korea Research Institute for Vocational Education and Training

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Executive Summary

This study investigates Korea's success in the area of skills development and what role the Korean government played during the stages of Korean economic development since the 1960s. Major achievements connected with the Korean skills development system over the last few decades are described and evaluated. However, it is worth noting that the Korean system has confronted challenges, arising from rapid changes in the economic and social environment that have put the sustainability of its current skills development system into question. In this regard, this study also analyzes the direction the Korean skills development system is moving toward and makes policy recommendations concerning how current challenges may be better handled.

In doing so, the notion of lifelong skills development is derived. This notion signals a shift away from a government-led, supply driven model towards a locally based, demand-driven model, in order to align the supply of education and training programs with the needs of local business, and the improved effectiveness of Korea's skills development system over the coming years.

The Korean government has played a key role in establishing the skills development system over the last few decades. Government intervention in skills development has addressed both the public and private sector. In the public sector, government initiatives established vocational education and training institutions in response to rising demand for skills, and according to economic development strategy. In the private sector, government legislation established regulations and institutions that incentivized private employer investment in in-plant training by providing financial support (e.g., levy-exemption) until the late 1990s, with the levy-grant system under the Employment Insurance Act effective since 1995. These measures helped employers to bear costs related to training prospective and existing employees. Additionally, national qualification systems helped job seekers to undertake vocational training, which was in high demand throughout the labor market.

This paper briefly describes challenges and concerns connected with establishing a lifelong skills development system in Korea. The analysis will focus on how the existing government-led VET system may be transformed into a public-private partnership based model that provides better VET programs. Additionally, the VET system needs to foster lifelong employment or employability rather than lifelong jobs, which was previously the cornerstone of the Korean

employment system. Regarding career development, policy intervention needs to disestablish the “monorail” career trajectory of school-work-retirement, in favor of diversified careers by establishing flexible and competency-based qualification systems.

This paper also describes some examples of instances of application of the lifelong skills development system in Korea. In-depth case studies are carried out regarding the development and application of National Competency Standards, the local-industry tailored skills development system, and reform of secondary vocational education focused on specialized vocational and Meister Schools in Korea.

However, the Korean central government must still perform a significant role in managing and monitoring skills development. It should continue to use policy to foster public-private partnership in skills development, as local municipalities and sectoral stakeholders are yet to develop their own capabilities in this area. In addition, National Competency Standards (NCS) and regional Human Resources Development (HRD) committees need to further develop their roles and functions in order to better meet the diversified demands of business and employees and adapt to rapid technological and organizational changes. To further expedite the fine-tuning of skill policy in rapidly changing markets, forecasting skill demand and supply requires further attention, although it is becoming increasingly difficult to predict the demand and supply of skills.

Chapter 1

Introduction

This paper is composed of five chapters; the contents of each chapter are as follows: Chapter 2 summarizes the formation and development of the skills development system in Korea. Analysis focuses on the Korean government's role in each phase of economic development, particularly with regard to legislation on vocational education and training, and workforce skills development programs.

Chapter 3 describes the configuration of the current skills development system in Korea. The analysis focuses on trends in participation by program, funding scheme, and changes in the relationship between vocational education and vocational training. The current system's sustainability will also be examined; this examination's result will lead to the recommendation of a lifelong skills development system geared towards changing environments and technology.

Chapter 4 briefly describes challenges and concerns connected with establishing a lifelong skills development system in Korea. Analysis focuses on issues related to transforming the existing government-led skills development system into a public-private partnership based model that aims to provide better VET programs.

Chapter 5 briefly describes some examples of lifelong skills development systems in Korea. In-depth case studies examining the development and application of the National Competency Standards, the local-based, industry- tailored skills development system, and the reform of secondary vocational education institutions, and specialized vocational and Meister Schools are described.

Finally, Chapter 6 summarizes the previous chapters' major findings, and makes policy recommendations concerning Korea's and LAC's sharing of experience and knowledge relating to skills development programs.

Chapter 2

The Formation and Development of Vocational Education and Training Policies in Korea during 1960s-1990s

By Kirak Ryu

Summary

This chapter describes policy interventions in VET in Korea since the early 1960s, when the Korean government launched its first Five-Year Economic Development Plan. In each phase of economic development, policy efforts have aimed to build up human resources in order to respond to the demands of industries.

The Korean government has played a key role in establishing the skills development system over the last few decades. Government intervention in skills development has addressed both the public and private sector: regarding the public sector, government initiatives established vocational education and training institutions in response to rising demand for skills, and according to economic development strategy. Regarding the private sector, government legislation established regulations and institutions that incentivized private employer investment in in-plant training by providing financial support (e.g., levy exemption) until the late 1990s, with the levy-grant system under the Employment Insurance Act effective since 1995. These measures helped employers to bear costs related to training prospective and existing employees. Additionally, national qualification systems helped job seekers to undertake vocational training, which was in high demand throughout the labor market.

1. Economic Development and the VET System in Korea

South Korea has quickly emerged as a prominent competitor in the world economy, which is testament to the country's rapid economic development and the achievements that led to it. Korea's economic development is also a story of successful investment in human resources to facilitate economic growth.

It is therefore useful to examine how the Korean government successfully built up a skilled labor force to meet economic demand, how its skills development system has fared and what

challenges and concerns it is now confronting. To address these questions, this paper first briefly describes the progress of Korean economic development and the overall VET system.

During the process of industrialization, and at each stage of economic development, the Korean VET system has played a crucial role in providing the human resources required by industry. The Korean VET system has received attention as an example of state-driven development, and as a model of ongoing beneficial interaction between economic growth and human resource development in an economy that was located in the periphery of world economic system (Kuczera et al., 2009).

In recent years, official development assistance's demand for VET and HRD has been increasing in order to benchmark the Korean VET system, establish VET-related facilities, set up educational programs, and establish management of further development that is sensitive to the circumstances of recipient countries (Jung, 2008; Lee et al., 2009; Lee and Hong, 2013; Ra et al., 2012).

2. Initial Phase (1960s-1970s)

The Korean government first prioritized preparation for industrialization in the early 1960s. An export-oriented growth strategy was adopted with a focus on light industry, which required only basic training for low-skilled employees. Policy efforts thus focused on large-scale training of low-skilled technical personnel, in order to meet the demands of early-stage economic development mainly led by light industry.

Regarding legislation, the Industrial Education Act was passed during the first economic plan period. Legislation promoting vocational education and training was passed in the late 1960s. This initiative laid the legal grounds for government-led vocational education and training for economic development.

The introduction of vocational training systems and mandatory in-company training for employers with workforces or payrolls above a certain size was a central achievement during this period.¹ During the late 1970s, legislation for vocational training was enacted, and employer-

¹ The mandatory in-plant vocational training system stipulated that employers with workforces above a certain size were to provide vocational training to employees, in order to increase their skill. According to strategic decisions, six industries were required to provide training: mining, manufacturing, electricity, gas & water supply, construction, transportation, storage & communications, and services. Training was provided through in-plant facilities, or contracted out to public or recognized training institutions (Jung, 2008: 146). The size above which employers were required to provide training changed as the system evolved over time. When the Basic Vocational Training Act was first enacted, employers with more than 500 employees were

administrated provision of in-company training was mandated in order to encourage the development of a technically skilled labor force. Legal measures inducing employers to invest in in-plant training were introduced. As a result, a foundational level of vocational education and training was established and became consistent.

By the late 1970s, levy exemption was in place to raise the funding resources required to set up the infrastructure needed to train technically skilled employees on a large scale. Companies were obliged to pay levies if they did not train their employees, the revenue from which was used to establish public training institutions.

For the duration of the first and second Five-Year Economic Development Plans, skilled labor was in demand to support export-led light industry, and large amounts of government funds were spent on these areas. In the Five-Year Science and Technology Promotion Plans, priority was given to core-industry skilled labor training, reducing the number of agricultural and fishery vocational schools, enlarging industrial vocational high schools, and addressing skill shortages by reshaping the curricula of vocational high schools.

Passage of the Industrial Education Promotion Act (1963) and the Vocational Training Act (1967) were noticeable achievements during this phase. In sum, during these decades, the Korean government played a major role in establishing a framework for vocational training to meet industry demand for skilled labor in tandem with industrialization and economic development

Regarding secondary vocational schools' contribution, three factors are central: i) centralized policy planning, ii) cooperation between education and industry, and iii) efficient financial resource management (Park, 2011). During the 1970s, while Korean government policy was pushing for growth in heavy-industry, vocational high schools' location and function were specified, with several leading vocational high schools receiving intensive investment. In addition, the establishment of the National Technical Qualification System and mandatory on-site practice for students facilitated the early stages of school-industry cooperation in vocational education (Lee and Hong, 2013).

required to provide in-plant training to prospective employees. With the passage of the Basic Vocational Training Act in 1976, the obligatory in-plant training system was extended to include employers with 300 workers or more. The government announced each industry's demand for skilled workers and determined the amount of total training, which nonetheless did not exceed 10% of the workers demanded by each enterprise. Due to this obligatory in-plant training system, employer-initiated training accounted for a large part of training, relative to that provided by public institutions, therefore playing a significant role during the era of economic development (Ra and Kang, 2012).

3. Growing and Expansion Phase (1980s-1990s)

As the Korean economy boomed, and industrialization through export-oriented growth reached its limits; skill shortages became prominent in the manufacturing industry. To address this issue, the Korean government implemented a new financing mechanism for vocational training.

Demand for multi-skilled technicians increased under the labor-intensive mass production system. In the 1990s, the levy exemption system for training new personnel was replaced by a levy grant system through the introduction of the Employment Insurance System (EIS), under which employers paid a levy for vocational skills development and were entitled to reimbursement once they provided skills-development training to their employees.

Since the 1990s, higher education in science and technology has received heavy investment. Additionally, vocational education programs were reshaped in relevant areas to address the demand for skills. The vocational training framework, which supplies quality personnel as well as workforce development, has been in place since the 1990s.

Institutional changes included the establishment of the Korean Vocational Training Agency (currently the Korea HRD service), and the Korea University of Technology and Education. Vocational training curricula were updated to provide educational upgrading and meet industry demand for long-term courses, and to provide intensified training and various levels of programs for artisans/multi-skilled technicians.

4. Innovation Phase (since the year 2000)

Due to the development of high-end industry, and the consequent shift in labor market structure and mismatch of labor supply and demand, a demand emerged for the reshaping of existing skills development practices. Since the late 1990s, the skills-development system had relied heavily on training obligations imposed at enterprise level; however this had led to inequality of opportunity for skills development, differentiated by labor market status and employer size. As the system was principally financed by employment insurance funds that drew on employers' contributions, financial support for training was restricted by labor market positions.

Table 1 Fee Rates of Employment Insurance Funds

(Percent of Total Payroll)

Insurance Fee Rate	Employer Size	Employees	Employer
Unemployment Benefits	No distinction	.65	.65
Employment Stabilization and Vocational Skills Development Programs	Less than 150 regular employees	*	.25
	SME with more than 150 regular employees	*	.45
	Non-SME with between 150 and 1,000 employees	*	.65
	Private firms, central or municipal government agencies with more than 1,000 regular employees	*	.65

* Contribution only required by employers.

Source: Ministry of Employment and Labor (2015).

However, increasing labor market flexibility and instability raised questions about this system's validity, which called for the establishment of a lifelong skills-development system customized to the individual's needs, regardless of labor market position or personal characteristics such as age, sex, and educational attainment. Vocational education and training systems are becoming decentralized, and the transformation of the skills development system will lead to the implementation of a tailored system, coordinated via continuous consultation between private and public stakeholders, in order to increase the responsiveness of the system to the demands of business.

Legislations have since been enacted (e.g., the Workers Vocational Skills Development Act in 2004, and the Promotion of Industrial Education and Industry-Academy Cooperation Act in 2009) that aim to make skills development programs more flexible and market-oriented.

In the first of the examined periods, 98,863 individuals took part in vocational training; the number increased to 312,736 in 1976, dropped during the early 1980s, and increased again during the mid-1990s, with over one million participating in vocational training during that period. Table 2 shows the number of trainees who took part in vocational training from the second to the seventh five-year period of the Economic Development Plan.

Table 2 Number of Vocational Trainees by Economic Development Plan Period and Type

(Unit: Persons, %)

Type	Total (‘67-‘96)	2 nd plan (‘67-‘71)	3 rd plan (‘72-‘76)	4 th plan (‘77-‘81)	5 th plan (‘82-‘86)	6 th plan (‘87-‘91)	7 th plan (‘92-‘96)
In-plant Training	1,502,479 (60.0)	47,225 (48.8)	177,350 (56.7)	337,388 (68.1)	114,773 (42.0)	116,389 (37.0)	708,354 (70.3)
Total	2,501,588 (100.0)	98,863 (100.0)	312,736 (100.0)	495,739 (100.0)	273,151 (100.0)	313,275 (100.0)	1,006,822 (100.0)

Source: Ministry of Employment and Labor, 2015.

5. Government Intervention in Skills Development

Centrally, the Korean government helped to strengthen the skills-development system by setting up relevant legislation and institutions, such as mandatory in-plant training, technical qualification systems, and the EIS of 1995. These interventions encouraged employers to invest in employer-provided training, and motivated employees to undergo skills-focused training. In addition, using resources such as foreign aid and loans, the government committed to establishing public training institutions and educating trainers, and to establishing infrastructure for vocational training. Table 3 summarizes the key reform priorities, legislations and reforms addressing vocational training and education of each of the Five-Year Economic Development Plans between 1962 and 1997.

**Table 3 Economic Development Plans and Skills Development in Korea
(1962-1997)**

Period	Key Reform Priorities	Legislation and Reform Measures		Jung (2008)
		VT	VE	
1 st (1962-66)	<ul style="list-style-type: none"> •Building the foundation for industrialization •Export-led growth driven by light industry 	•Basic training for low-skilled workers	•Industrial Education Promotion act	<ul style="list-style-type: none"> •Gradual introduction of government-led vocational training (1967-74)
2 nd	As above	•Vocational Training	•Five Year Science	

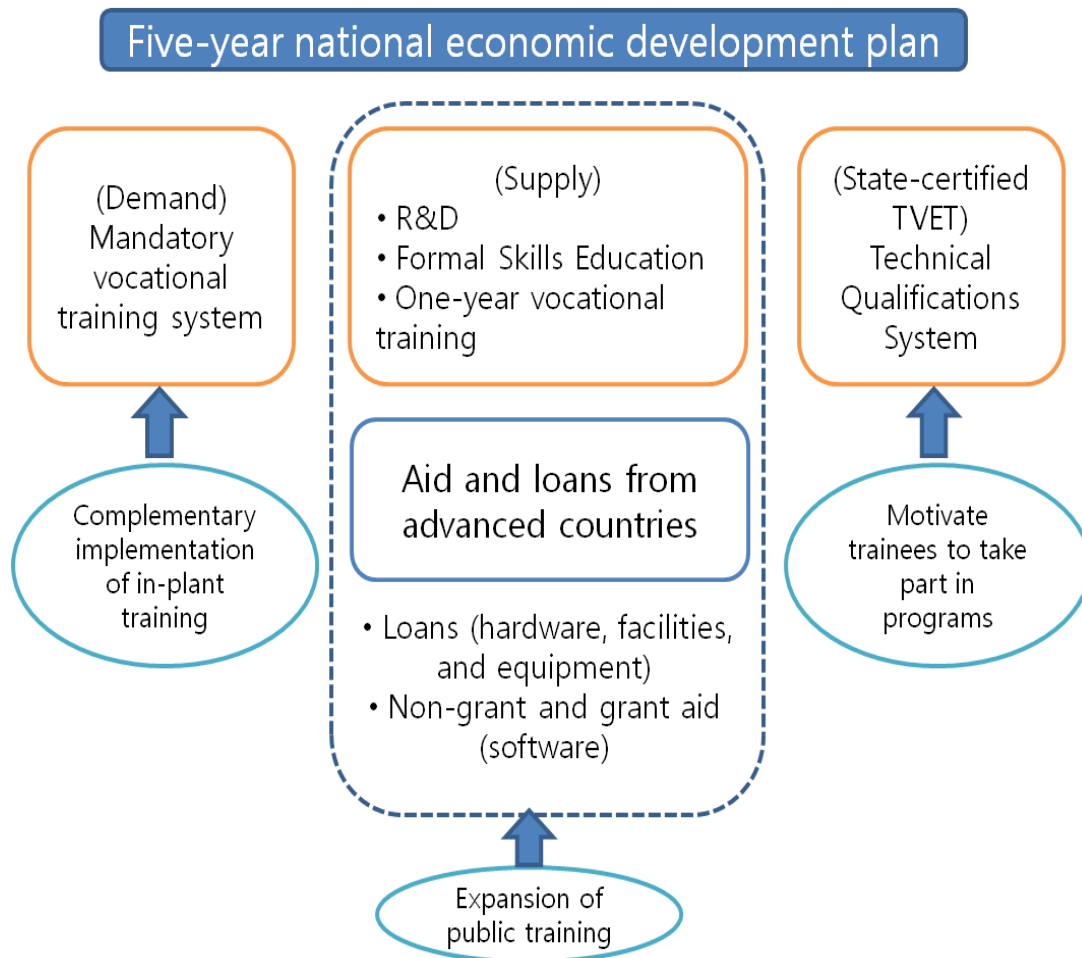
(1967-71)		Act (1967) •Five Year Science and Technology Promotion Plan	and Technology Promotion Plan	•Implementation of Mandatory Vocational Training System (1975-98)
3 rd (1972-76)	<ul style="list-style-type: none"> •Deepening industrialization •Export-oriented growth driven by heavy and chemical industries •Macroeconomic stability 	<ul style="list-style-type: none"> •Special measures for Vocational Training Act (1974) •Act for the Establishment of Vocational Training Promotion Fund •National Technical Qualification Act 	<ul style="list-style-type: none"> •Amendment of Industrial Education Promotion Act •Specialization of technical high schools •Establishment of Air & Correspondence high schools •Introduction of vocational programs in general high school curriculum 	
4 th (1977-81)	<ul style="list-style-type: none"> •Promotion of technology-intensive industries •Balanced, export-oriented growth 	<ul style="list-style-type: none"> •Introduction of required in-service training for existing employees, and measures to promote employment stability 	<ul style="list-style-type: none"> •Employee training contracted to junior colleges 	
5 th (1982-86)	<ul style="list-style-type: none"> •Macroeconomic stability •Fostering knowledge and information industries •Balanced, export-oriented growth 	<ul style="list-style-type: none"> •Plans for strengthening Vocational Training 	<ul style="list-style-type: none"> •Improving vocational high school performance •Long-term investment in science and technology •Reform of higher education institutions 	

			<ul style="list-style-type: none"> •Creation of rules governing the foundation and management of open universities 	
6 th (1987-91)	<ul style="list-style-type: none"> •Deepening industrialization •Fostering competition •Increasing economic openness •Balanced growth 	<ul style="list-style-type: none"> •Basic Plan for Promoting Vocational Training •Expansion of the range of industries required to train employees 	<ul style="list-style-type: none"> •Reform of high school TVET system •Introduction of 2+1 system in engineering high schools 	
7 th (1993-97)	<ul style="list-style-type: none"> •Transition to low-cost, high-efficiency economy •Establishment of a free and fair economic order 	<ul style="list-style-type: none"> •Employment Insurance Act (1995) •Vocational Training Promotion Act (1997) 	<ul style="list-style-type: none"> •Employee training contracted to junior colleges 	

Source: Adopted and modified from Ko and Park, 2013 and Jung, 2008.

To summarize, the Korean government has played a key role in establishing the skills development system over the last few decades. The government intervention in skills development has occurred in both the public and the private sector. Regarding the public sector, government initiatives established vocational education and training institutions in response to demand for skills according to the strategy of economic development (Jung, 2008; Ko and Park, 2013). Although impeded by a lack of infrastructure for collecting data on human resources and labor market demand, government strategies initiated preemptive planning in personnel and skills policy through projection of skills needs by level and type of skill. In addition, strategies for skills development were regularly modified, so that the centralized intervention would not interfere with private-sector motivation for investment in skills development.

Figure 1 Economic Development and the Role of the Korean Government in Skills Development



Source: Modified from Ra and Kang, 2011.

In the private sector, the government set up relevant regulation and institutions, and used financial support such as levy exemption, in order to motivate private employers to invest in in-plant training. This approach remained in effect until the late 1990s, with the levy grant system under the Employment Insurance Act effective since 1995. This system assisted employers with management of financial burdens related to training prospective and existing employees. In addition, national qualification systems helped job seekers to take part in vocational training, which was of high demand in the labor market.

Chapter 3

Current Skills Development Systems in Korea

By Kirak Ryu

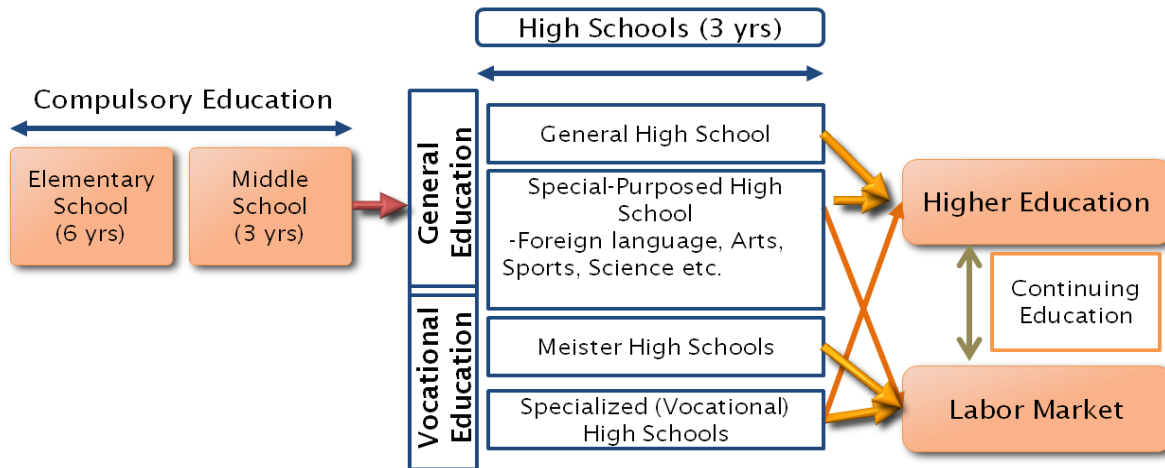
Summary

This chapter describes the configuration of the current skills development system in Korea. Trends in participation are analyzed by program, funding source, and changes in the relationship between vocational education and vocational training. The current system's sustainability is addressed; this inquiry will lead to the recommendation of a lifelong skills development system geared towards changing environments and technology such as globalization, economic openness and economic crises.

1. Overview of VET Systems in Korea

The system consists of six years of elementary education, three years of lower secondary education, and three years of upper secondary education. There is no early program orientation tracking, and the distinction between general and vocational education occurs at tenth grade. General education institutions include general high schools and special-purpose high schools that aim to teach foreign languages, arts, sports, and science, while vocational education institutions include Meister and specialized high schools. Career decisions are made upon graduation of high school; progression to higher education institutions dominates entrance to the labor market at this point. However, some transfers occur between higher education institutions and the labor market, through participation in continuing education programs. Figure 2 summarizes the Korean education and training system by level and orientation of lifetime learning.

Figure 2 Korean Education and Training System



Source: Park, 2011.

The skills development system in Korea consists of vocational education and vocational training, which are administered by the Ministry of Education (MoE) and the Ministry of Employment and Labor (MoEL), respectively. Vocational education is provided by vocational high schools, junior vocational colleges, open universities, and lifelong education institutions. Programs typically take two or three years to complete, while some lifelong education programs are shorter. The major providers of vocational training are more diverse than those of vocational education, as public and authorized vocational institutions and in-plant institutions, cover a range of programs in various ways (Ko & Park, 2013; Ra et al, 2013; Park et al., 2013). In addition, authorized vocational courses are also provided by lifelong education institutions, which overlap with vocational education institutions. Program durations vary and they are short-term compared to vocational education programs. Although these two streams of skills development programs (vocational education and vocational training) originally developed in separate areas of VET provision, they have converged in the last few years in terms of coverage, program orientation and targets, as various learning activities take place across different locations at the same time. Rapid changes in technology and growing demand for continuous education have contributed to this convergence in the Korean system (Yoon et al., 2013).

Table 4 Number of Secondary and Tertiary Vocational Education Institutions in Korea (1980-2004)

Year	High Schools		Higher Education	
	General	Vocational	Junior Vocational College	University (Technical, Teachers College Excluded)
1980	748	605	128	85
1985	967	635	120	100
1990	1,096	587	117	107
1995	1,068	762	145	131
2000	1,193	764	158	161
2005	1,382	713	158	173
2010	1,561	692	145	179
2011	1,554	499*	147	183
2012	1,529	499	142	189
2013	1,525	494	140	188
2014	1,520	499	139	189

* Since 2011, the number of vocational high schools includes that of specialized high schools.

Source: Korean Education Statistics Service, 2014.

Note: as of 2011, secondary vocational education institutions, the former technical high schools were reclassified into special vocational, special-purpose, and autonomous schools.

For secondary education, the total number of schools steadily increased from 1,353 in 1980 to 2019 in 2014. The number of vocationally oriented high schools increased from 1980 until 2000, and then decreased until 2010. In 2011, secondary high schools were reclassified into general, specialized, special-purpose, and autonomous schools. Among them, only specialized high schools can be counted as vocationally oriented high schools, since these institutions cater to students who plan to enter the labor market upon graduation. Higher education institutions continuously increased in number throughout the reference period, with 328 institutions in 2014, roughly 1.5 times as many as in 1980. The number of junior high schools was 128 in 1980, and increased until 2005 up to 158, after which it decreased to 139 by 2014. The number of universities, however, steadily increased over the same period, providing evidence of universalized higher education in Korea. Table 4 shows the number of secondary and tertiary education institutions in Korea.

The skills development system consists of two pillars: i) training and ii) vocational education. The latter aims to have imparted fully developed skills upon graduation of formal education, while the former aims to improve the job competence of existing employees by administration of continuous learning outside formal education institutions. Concerning targets and policy orientation, the VET system is composed of employee training, training of unemployed individuals, and initial training. Each category of skill development includes a variety of programs, depending on funding sources and the responsible ministries. In general, initial training is provided by public training institutions such as polytechnic colleges and the Korea University of Technical Education, while training for unemployed individuals and skill upgrading are delivered jointly by private and public institutions.

However, various types of VET institutions in the Korean system have begun to converge or overlap as the need for more flexible and seamless organization of learning opportunities emerges. Several factors have contributed to this convergence. First, demographic changes and a corresponding decrease in cohort size have put pressure on four-year universities to attract new entrants, making these institutions unable to rely solely on academic education and requiring them to deliver other types of education services, such as vocational education. Additionally, unprecedented unemployment rates among college graduates have motivated universities to seek new sources of incoming students. Second, as cohort sizes continue to decrease, vocational training institutions are focusing on delivering continuing training rather than initial training, in order to position themselves as providers of lifelong skill development programs (Yoon et al., 2014). As in Table 5, the college entrance quota will exceed college entrant cohort size in 2018, with this trend resulting in a roughly 30% deficit in the college entrance quota by 2024. Therefore, four-year colleges are under great pressure to produce a new resource that will drive enrollment, for which the adult population seeking lifelong learning opportunities is one of the strongest candidates (Yoon et al., 2014).

Table 5 Projection of College Entrants Over the Next 30 Years in Korea

Year	2013	2018	2023	2025	2030	2035	2040
Excess of Entrance Quota	72,799	-9,146	-161,038	-149,335	-153,864	-155,165	-161,627
Entrance Quota	558,750	559,036	559,036	559,036	559,036	559,036	559,036
Entrance	631,549	549,890	397,998	409,701	405,172	403,871	397,409

Source: Ministry of Education and Ministry of Employment and Labor, 2014.

In consequence, these two factors led the two pillars of the skills development system to converge and overlap with each other, resulting in a sort of reintegration or hybridization of the traditional division of roles between vocational education and training institutions.

2. Programs of Vocational Training

Skills development training in Korea can be classified by training programs' targets and goals and by the recipients of financial support (Table 6). Vocational training aims to develop new skilled workers by providing training programs to jobseekers and labor market entrants; this is termed initial training. For existing employees, training is provided to upgrade their skills, in order to increase workplace performance; this is termed upgrade training. Public training is mainly delivered by publicly funded training institutions, whose training goals are more diverse, including both upgrading and initial training. Concerning financial support, funding is channeled either to employers or to individuals. Eligible employers provide recognized training either on-site or by contracting out; eligible individuals take part in training programs that are either recognized by public agencies or provided by public institutions. These classifications, however, are not mutually exclusive or comprehensive since some training programs overlap either in provider or in orientation, and lifelong learning programs financed by participants themselves without public support are not included.

Table 6 Classification of Vocational Training Programs in Korea (2015)

Targets and Goals of Training Programs	Recipients of Financial Support	
	Employers	Individuals
Existing Employees (Upgrade Training)	1) Employer-Initiated Vocational Skills Development Training 2) SME-specific Training 3) Consortium for National HRD	1) Naeil Baeum Card for Employees (Vocational Skills Development Account System)
Unemployed (Initial Training)		1) Naeil Baeum Card for the Unemployed (Vocational Skills Development Account System) 2) Training for National Basic and Strategic Industry
Public Training	Public Vocational Training (polytechnic colleges, Korea University of Technology and Education, Korea Chamber of Commerce & Industry)	

Note: modified from Ministry of Employment and Labor, 2015.

Total numbers of training participants increased from 2007 until 2009, and then dropped at a continuous rate. Examining the composition of participants by type of training shows that the proportion of existing employees increased until 2009, then dropped to 3.5 million. This drop in participants was complemented by a large increase in training for unemployed individuals due to the global financial crisis of 2008. Participation in public training remained almost unchanged throughout the period displayed. Figure 3 shows trends in the number of participants in training by targets and type of training provided.

Figure 3 Trends of Skills Development Training
(Number of Participants)



Source: Ministry of Employment and Labor, 2014.

4. Financing VET Programs: General Tax Revenues and Contribution by Employment Insurance Schemes

Financial resources for vocational training in Korea are drawn from the Employment Insurance Contribution and general tax revenues. Since the introduction of the EIS in 1995, financial resources for vocational training have come mostly from vocational training fees derived from EIS,

making up about 80% of overall expenditure. Another 20% is drawn from general tax revenue. Prior to the EIS' introduction, special funding schemes for vocational training (e.g., the Vocational Training Promotion Fund) were used. In the year prior to the EIS' introduction (1994), the Vocational Training and Promotion Fund "provided 112.2 billion Korean won (54.9%) of the total 204.3 billion Korean won (301.17 million in constant 2005 USD) invested in vocational training that year" (Ko and Park, 2013: 12).

The total expenditure for training almost doubled during that period, starting at KRW 8.5 billion (Korean won), and rising to KRW 16.8 billion in 2013. Most of the expenditure was drawn from skills development training premiums included in EIS funds, which are paid by employers according to their payroll. The proportion of expenditure derived from EIS funds was 74.5% in 2005, rising to roughly 80% of total expenditure in 2013. This means that since the introduction of the EIS, expenditure on skills development training has principally depended on funds derived from EIS, rather than on general tax revenue. Table 7 shows funding sources for skills development training from 2005 until 2013.

Thus vocational skills development programs remain the backbone of the Korean skills development system, which stabilizes funding streams for all skills development programs. However, the EIS relied on a sanctuary principle (i.e., the beneficiary should pay the fund premium). Marginal groups within the labor market who are not covered by the Employment Insurance or not eligible for training under criteria, such as duration of contribution, cause of job separation, etc., are less likely to take advantage of training opportunities provided by the EIS. Regarding funding targets, EIS funds are used to train existing employees and job seekers who have previously contributed to the fund, while general tax revenue funds are for job seekers with no prior work experience, labor market entrants, and vulnerable groups needing training, as well as training for strategic industry.

Table 7 Financial Investment in Skills Development

(Unit: hundred million KRW)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
Employment Insurance Fund (A)	6,424	7,268	9,269	11,406	11,788	12,086	12,589	12,713	13,427
General Tax Revenue (B)	2,361	2,484	1,314	2,565	2,707	3,123	2,987	3,454	3,410
Total (C)	8,584	9,752	11,583	13,971	14,494	15,209	15,576	16,167	16,837
% EIS (A/C)	74.84	74.53	80.02	81.64	81.33	79.47	80.82	78.64	79.75

Source: Ministry of Education and Ministry of Employment and Labor, 2014.

Economic dualism and increasing labor market uncertainty challenge VET's role in reducing labor market inequality and inducing social integration. However, skills development may still be effective in these arenas by fostering inclusive growth and sustainable development, through enhancing productivity and competitiveness of existing and prospective employees. However, it remains unclear whether state-led skills development is still valid in a knowledge-driven, post-industrial economy, and likewise unclear what policy intervention should focus on, given the rapid technological change and economic turbulence of the present period. These issues will be discussed in the next chapter.

Chapter 4

Towards a Lifelong Skills Development System: Challenges and Policy Issues

By Kirak Ryu

Summary

This chapter briefly describes challenges and concerns connected with establishing a lifelong skills development system in Korea. The analysis will focus on how the existing government-led VET system may be transformed into a public-private partnership based model that provides better VET programs. Additionally, the VET system needs to foster lifelong employment or employability rather than lifelong jobs, which was previously the cornerstone of the Korean employment system. Regarding career development, policy intervention needs to disestablish the “monorail” career trajectory of school-work-retirement, in favor of diversified careers, by establishing flexible and competency-based qualification systems.

1. Overview of the Lifelong Skills Development System

This section reviews the status of the Korean skills development system, in terms of successive phases of policy intervention. Up to the present, large amounts of money and efforts have been invested in developing human capital at the entry to the labor market. Hence, it has not been feasible to develop and upgrade skills among existing workers in response to changes in industry and the labor market. To manage these difficulties, the skills development system needs to facilitate continuous skills upgrading at all stages of life and help learners utilize skills development outcomes for remuneration, promotion, and career development.

This paper defines lifelong skills development as an education and training system that helps existing and prospective employees upgrade their job competencies beyond the boundaries of formal education and training institutes. This definition emphasizes the timing of learning over a working life, and focuses on non-classroom-based and informal education and training, as classroom-based and formal training may have predetermined curricula and focus on theoretical learning. Furthermore, as technology and employing organizations change at an unprecedented rate, employees cannot depend indefinitely on skills or competencies obtained during formal education. Regarding learning locations, lifelong skills development is not restricted to in-class learning, but incorporates on-the-job learning that includes structured learning and teaching

activities. Government intervention hence needs to take this shift of the timing and location of learning into account.

Regarding policy targets, lifelong skill development programs are not restricted to new labor market entrants, youth employees, job movers, unemployed individuals, retirees, or vulnerable groups, but cover a wide population. In addition, the scope and contents of learning are extended to match changes in occupations requiring training due to technological and industrial shifts, ageing, and the increased size of the female workforce.

Moreover, the lifelong skills development system aims not only to fill job vacancies by providing short-term training programs, but also to allow individuals to acquire and upgrade job competencies beyond formal education and training. In 2007, the Korean government proposed a blueprint for establishing a lifelong skills development program, which identified two basic stages of learning. The first stage of learning plans for lifelong skills development, and occurs while the learner is of schooling age. The second stage occurs during the economically active period of life, regardless of training location. Any activities occurring in the second stage are defined as lifelong skills development if they help to continuously nurture and upgrade job competence.

2. The Lifelong Skills Development System and Career Pathways

The so-called “monorail” career pathway of school-work-retirement corresponds to the stable labor market of an industrial society and benefit-based welfare state. However, rapid technological change, globalization, and labor market insecurity, which are characteristics of a post-industrial or knowledge-based economy, require labor market policy to aim to provide, not lifelong jobs, but lifelong employment or employability.

Skills development policy is, therefore, regarded as the major policy instrument for promoting income maintenance and reemployment support for the job seeker, and for managing skills upgrading and outplacement service to increase lifelong employability. This section briefly describes major tasks confronting the reshaping of the skills development system in Korea and proposes a policy agenda for reestablishing a lifelong skills development system in the coming decades.

The main benefit of a lifelong skills development system is that the system can facilitate management of critical transitional moments during the life of employees and allow for smooth transitions between school, work, retirement, and various types of employment (Schmidt, 2010).

For example, the school-to-work transition is made smoother if individuals' ability or competency is made clear to employers and recruiters by widely acknowledged national competency standards. In this regard, the development and application of the National Competency Standards, which classify required knowledge, skills, and aptitude by industry and sector, relieves the risk of skill mismatches between job seekers and employers, as these standards signal possession of skills required by the job market.

Regarding the transition from school to work, a lifelong skills development system can assist education and training providers who administer learning modules based on NCS, ensuring that practical learning and the subjects addressed are complementary to each other. The so-called "dual" system has been adapted to, and widely used in, the Korean labor market; on-the-job training programs conducted at vocational schools combine practical and theoretical learning based on NCS. Learning performance is evaluated by industry-sourced auditors, and relevant qualifications are awarded to successful trainees. The so-called Korean "parallel" work-study programs also promote the goals of the lifelong skills development system.

In sum, NCS-based learning programs and parallel work-study programs deliver learning outcomes that are responsive to industry-led demand, thus better assuring learning quality. Additionally, the link between education and training, job location, and qualification systems may be strengthened due to the transferability of learning outcomes across industries or sectors.

As a concrete strategy that will promote career pathway diversification, standard schooling ages need to be adjusted in a flexible and recursive manner. For an example, if second-grade high school students are allowed to undertake short-term courses at lifelong vocational junior college with credits counted toward qualification requirements, they may be better able to plan a more diversified career path and more effectively combine study and work.

**Table 8 Examples of Career Paths for Secondary Vocational High School
Graduates: ‘Job First, Study Later’ Paths by Field of Major**

Major	Employment		Advancement to Higher Education		Career Development
Agricultural and Bioindustry (A: biological science high school)	Agricultural Co-op	→	K National University (special admission process)	→	Independent Farmer
Industry (B: vocational high school)	S Heavy Industries	→	In company university S Heavy Industries (associate degree) → P National University (Contract department)	→	Professional engineer → CTO → start-up
Commercial Information (C: Women’s commercial high school)	C Bank of Korea	→	C University (special admission for existing employees)	→	Manager Branch Manager
Marine and Shipping (D: Marine science high school)	Shipping Co., Ltd	→	G National University and P National University (contract department, special admission for existing employees)	→	Chief mate Manager
Home and Technological science high school	P Hotel	→	K College (Industry Commissioned Education)	→	Expert Chef

Source: Ministry of Education and Ministry of Employment and Labor, 2014.

The Korean government also recognizes the need to provide alternative career paths to individuals who wish to proceed to secondary vocational schools such as Meister High Schools and specialized vocational high schools. Table 8 illustrates some representative career pathways for those who follow the ‘Job First, Study Later’ strategy, according to which one may enter a vocational high school, get a job in one’s major field upon graduation, proceed to higher education while employed, and finally obtain a high-profile expert or professional position in that field. Although these examples are simplified, they serve to indicate that following the ‘Job First, Study Later’ strategy may allow students to alter their career pathways in the long term. Table 8 above also indicates some possible career paths that are open to vocational high school graduates according to their major and field of occupation. In sum, rather than proceeding to university upon graduation, secondary vocational high school graduates may enter the job market according to their majors, and then combine study and employment for several years, gradually upgrading their job competency in order to advance along career paths in their fields. Although these examples focus on career development according to graduates’ majors, more flexible and diverse career paths may emerge if competency-based curricula are widely accepted and transferred across employers. National competency standards may help secondary high school graduates prepare for their career, with additional required competence developed during employment.

Chapter 5

Case Studies

By Kirak Ryu and Hanna Moon

Summary

This chapter briefly describes some examples of instances of application of the lifelong skills development system in Korea. In-depth case studies are carried out regarding the development and application of National Competency Standards, the local-industry tailored skills development system, and reform of secondary vocational education focused on specialized vocational and Meister Schools in Korea.

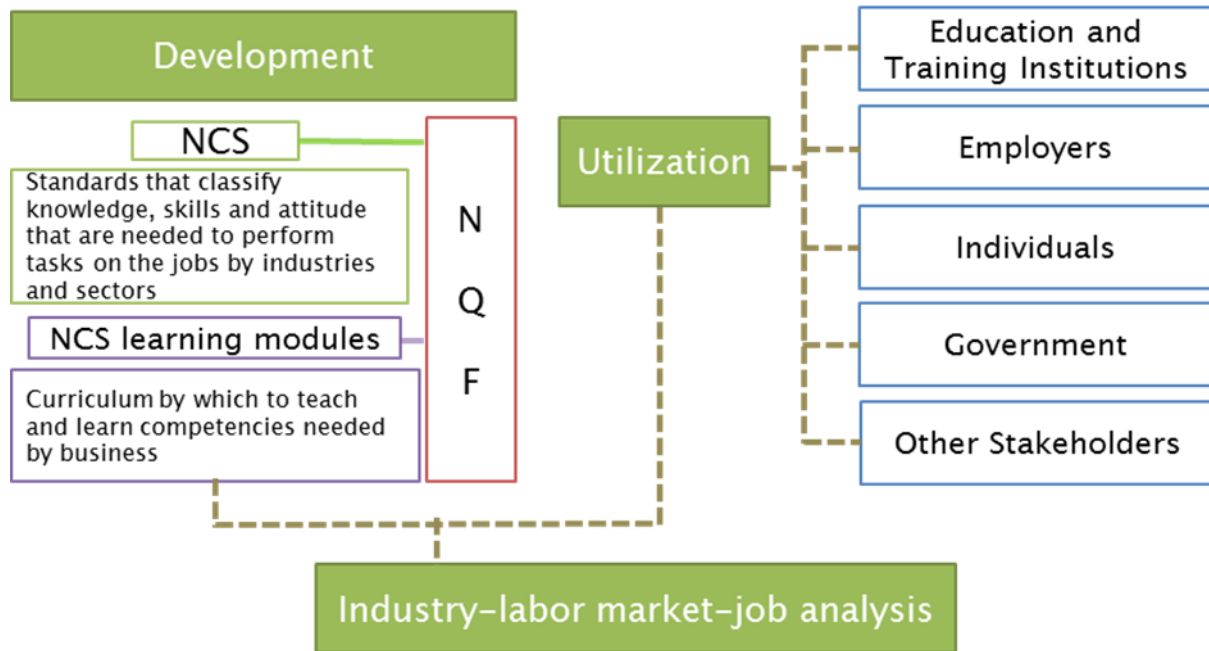
1. National Competency Standards: Recent Developments and Main Issues

This section discusses current developments and main concerns regarding the development and application of National Competency Standards in Korea.

Development of NCS aims to strengthen the linkage between the education and training, and qualification systems. Additionally, the national qualification system needs to be aligned with the development of NCS. This signals a shift away from monorail career trajectories characterized by education-work-retirement and accordingly allows for career path diversification by establishing education and training infrastructure. In addition, the labor market system, which is heavily dependent on the higher education qualification system, needs to become job-based, where rewards reflect merit rather than status. This will help to resolve labor market dualism, and facilitate integration of marginal groups who have otherwise not entered the labor market.

The National Qualification Framework (NQF) refers to a level-based system, in which formal educational attainment, and vocational training and qualifications, are linked to each other according to achievement level in various methods of learning derived from NCS. That is, NQF signifies the equivalence of learning outcomes, in which formal educational attainment, vocational qualifications, and completion of education and training programs are linked to each other in accordance with NCS levels stated by the government.

Figure 4 Utilization of National Competency Standards (NCS)



Source: Choi, 2014.

NCS: Overview

Entry-level job seekers in Korea may be overqualified for jobs and, if so, the cost of retraining may become burdensome to employers. NCS (previously KSS) was introduced in order to manage the existing mismatch between education and job skills. Anticipating the advent of a competence-based society, the Korean government focused on providing facilitatory infrastructure and developing human resources suited to the emerging labor market. NCS's application to vocational education, training, and qualification will raise the employment rate, and reduce hiring costs. Ultimately, job seekers will be equipped with specified skills, knowledge, and training, and public and private organizations may save the cost of retraining newly hired employees.

Since 2013, 797 NCS accreditations were developed across multiple industries, with governmental support. In addition, 356 new vocational qualifications were developed across seven key areas. By 2015, new vocational qualifications will have been developed across every industry according to NCS.

Table 9 Development Summary of NCS, Learning Modules, and Vocational Qualifications

	NCS	NCS Learning Modules	New Vocational Qualifications
Accumulated Numbers	797 ('14)	230 ('14)	356 (7 sectors)

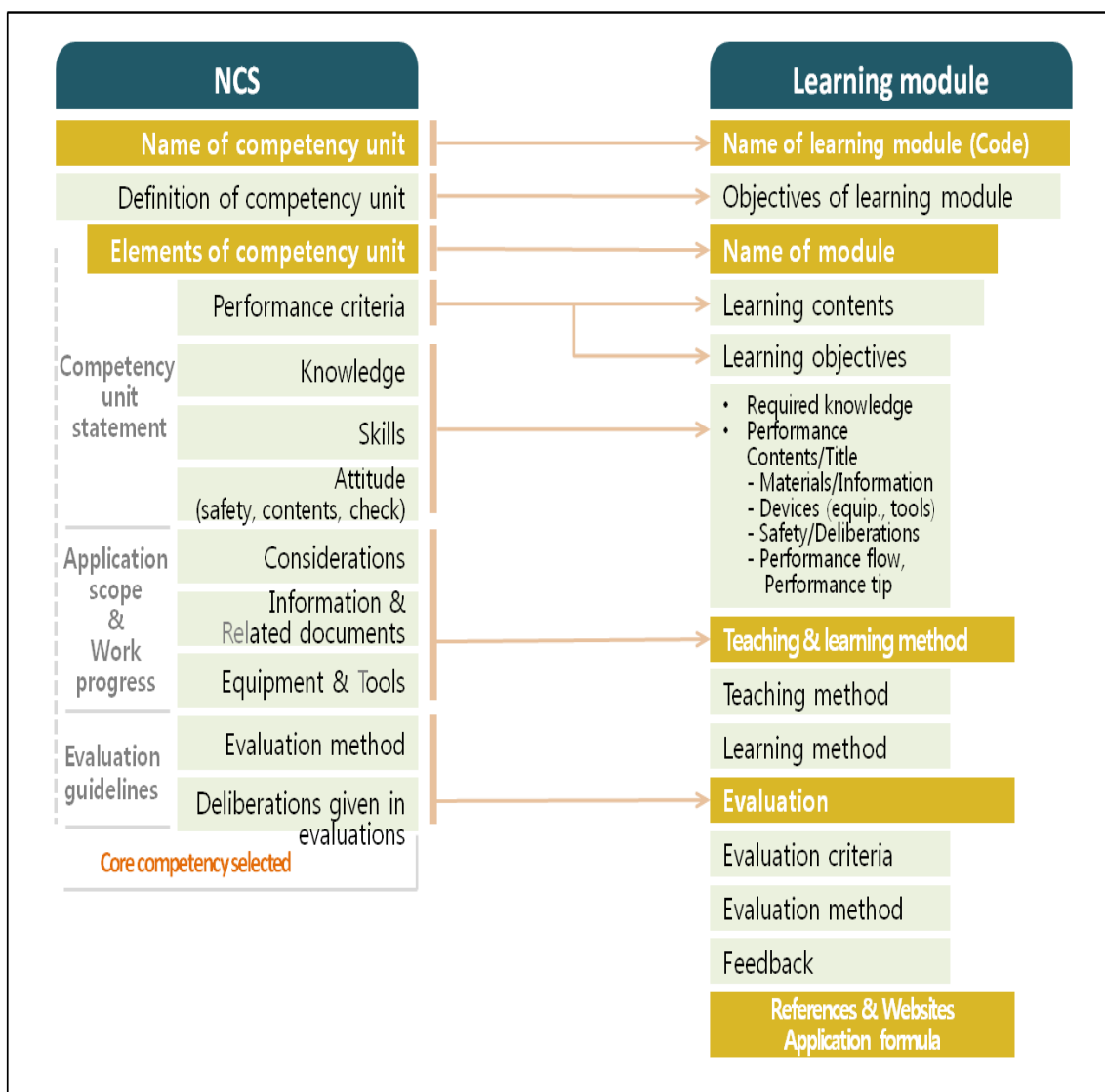
Source: Ministry of Employment & Labor, HRD Service of Korea, 2015.

Although all NCS related projects are government funded, multiple partnerships are formed among government and sector councils, and among practical and academic experts. NCS and learning modules are open to the public via the Internet (www.ncs.go.kr). Two hundred and thirty NCS learning modules, which specifically match NCS competency units, have been developed as of 2014. NCS learning modules will be primarily used as textbooks in post-secondary education and two-year technical colleges. The use of NCS learning modules can be extended to on-the-job or in-service training for employees.

The following figure demonstrates how NCS and its components can be translated into NCS learning modules. NCS learning modules are composed of knowledge (30%) and practice (70%). Based on performance criteria, learning objectives are defined, and performance flow and steps are specified. Modules also provide teaching and learning methods and contents needed for evaluation.

The purpose of the qualification system is to develop lifelong vocational competency and systemize qualification policy (Choi et al., 2014). Improving the qualification system requires agile and flexible reaction to technological changes in industry and resulting training needs. A qualification should reflect specific abilities required in the relevant field. When the components within existing qualification systems are smoothly linked, NCS and course evaluation based qualification systems, NQF, training and development and NCS-based curricula will work effectively.

Figure 5 The Relationship between NCS and Learning Modules



Source: NCS Learning Module Manual, 2014.

NCS-based Curricula

Cultivating talents and practical skills that match industry requirements is important to creating a competency-based society. The government is currently carrying out curriculum reform (Jang, 2013).

Regarding post-secondary education, three special high schools are piloting NCS-based curricula and every special high school will administer a NCS-based curriculum by 2016. In 2014, 78 two-year technical colleges reshaped their curricula to accord with NCS and 100 more will have done the same by 2017. Application of NCS to educational curricula will enhance the degree to

which education reflects the needs of industry, and improve the quality of talent cultivation (Choi et al., 2008).

Table 10 Economic Effects of Adopting NCS-based Curricula

Criteria	Estimated Economic Effect (Million won)
Reducing new employees' training period	5,788
Reducing job search period	3,593
Improvement of vocational training of the unemployed	144
Improving downward employment	2,019
Total	11,544

Source: Choi et al., 2008.

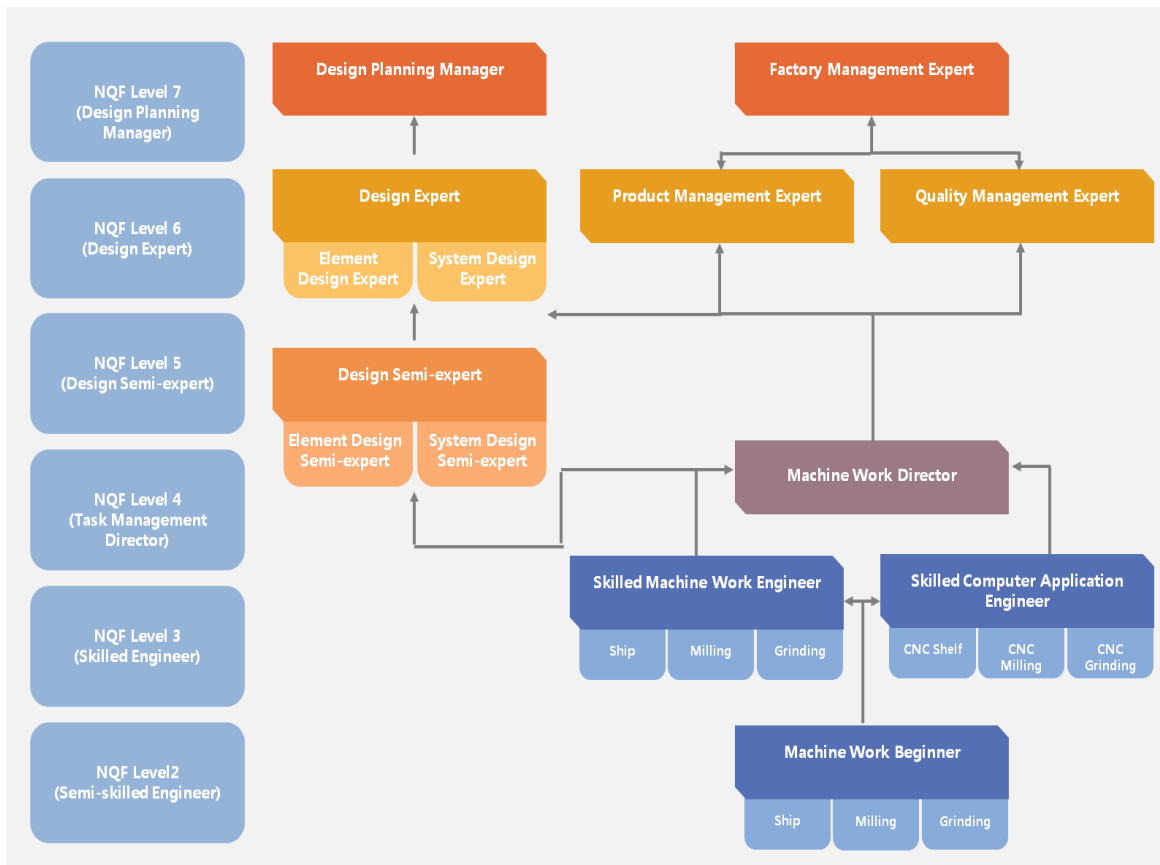
Roughly twenty thousand training courses in public and private training institutes will be reorganized based on NCS, which is expected to enhance employees' on-the-job performance. In addition, about one hundred public institutions (e.g., Korea Electric Power Corporation, Korea Land and Housing Corporation, Korea National Oil Corporation) will adopt NCS-based recruitment systems in 2014. These organizations will focus on skills with specific on-the-job applicability, rather than on English language skills or college or university GPAs. Their performance analysis systems will be restructured to focus on task performance, rather than on age or number of years with the organization. HR systems such as recruitment, selection, and training will also be aligned with NCS and core competencies.

National Qualification Framework (NQF)

With the cooperation of the MoEL and the MoE, development of NQF aims to systematically connect work, life, and qualifications. NQF provides a standard for individual competency qualifications. As an integrative level system connecting multiple competencies, NQF standards indicate equivalence of education, training, qualification, and career path, and systematically reflect task level (Cho & Oh, 2013). In 2014, the NQF project was piloted in several industries, including automobile maintenance and management, hair design and make-up, and software.

The following figure suggests a lifelong career path in machinery. It indicates how a novice worker can develop his or her career both vertically and horizontally.

Figure 6 Lifelong Career Pathways: the Example of a Machine Worker



Source: Ministry of Education, Ministry of Employment & Labor, 2014.

Training and qualifications in vocational skills development are thus reformed with an emphasis on on-the-job performance. Sector councils—the representatives of industry—have participated in developing NCS and its learning modules and qualifications. This implies that a model based on public-private partnership is gradually forming, which marks a shift away from the government-led VET system.

The Life Career Record System will be established to keep records of academic awards, work experience, training, and qualifications. NCS and NQF developments are ongoing, and their successful operation within the lifelong vocational education system requires collaborative effort from multiple governmental departments. Establishing integrative NQF systems supporting

secondary, post-secondary, and vocational training and education remains challenging. Provision of various paths to achieving training qualification is necessary and certification of informal and non-formal training requires investigation. Applying competency-based recruitment, rewards and recognition in public and private institutions are thus required.

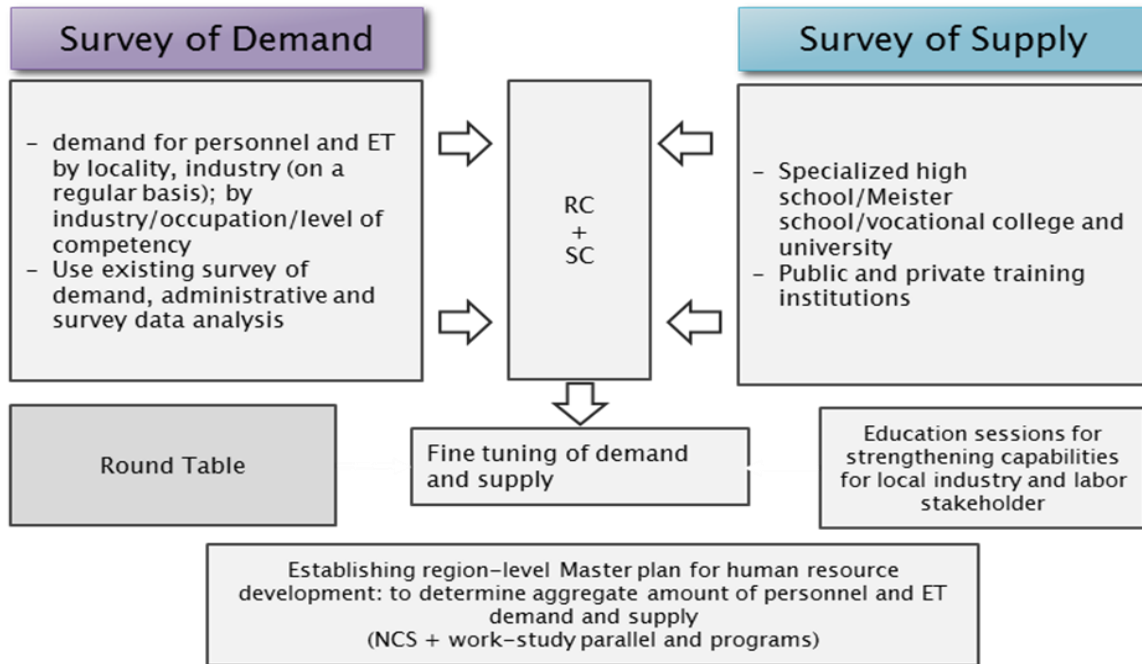
As the Korean government endeavors to effect systemic change through a multi-directional approach to the creation of a competency-based society, an open and flexible socio-cultural atmosphere that values vocational skills development is critical to continuing progress.

2. The Local-Industry Tailored Skills Development System

This section details the establishment of the regional HRD committee, which is a locally based, industry-tailored skills development system that has been in place since 2013. Committees consist of representatives from municipalities, labor and local business organizations, employment service centers, SME agencies, and local educational agencies, and aim to establish governance to meet local business' demand for personnel and skills. After a competitive bidding process, 14 committees have been approved and active since 2013.

The main tasks of the Committees are to survey demand and supply of labor and skills, provide joint education and training programs, and recruit individuals who have completed these programs. These tasks effectively differentiate regional HRD committees as a new human resources development system, separate from the existing government-led, supply-driven system. Although the central government previously regularly surveyed labor and skills, these surveys were typically performed in a top-down manner, in which government plans for economic or human resource development were made in advance, and surveys were subsequently conducted ad hoc. The new system, however, brings in private and sectoral vocational training stakeholders at the onset of analysis, and aims to better identify and meet needs for skills and personnel.

Figure 7 Main Duties and Tasks of Regional HRD Committees



Source: Plan for Pilot Project for Region and Industry Led Human Resource Development and Employment Service, 2014.

Notes: RC (Regional Council), SC (Sector Council).

The establishment of HRD committees reflects requests for a HRD system that better satisfies local demands for workforce development by means of local demand and supply surveying, and that relies on continuous consultation and coordination among stakeholders. Local surveying is believed to better examine the demand for and supply of training programs than government-administered surveying did, in which one-time nationwide survey results were used to decide on training program volumes. However, training suppliers, such as schools and training institutions, regularly and casually participated in the decision-making. In order for the new locally based HRD system to perform better, HRD committees and employment service centers must cooperate to better align employment services with training program provision.

3. Reform of Secondary Vocational Education: Specialized High Schools and Meister Schools

As discussed above, secondary vocational high schools in Korea have contributed to skills development at each phase of economic development until the 1980s. However, as demand for higher education has continuously increased since that time, vocational education has lost priority

in career development, leading to vocational high schools' marginalization. Given these circumstances, the Korean government endeavored to reshape secondary-level vocational high schools, with the aim of enabling these institutions to better adapt to rapidly changing economic environments and technology, as well as to meet the job market's demand for lifelong education (Park, 2011; Chang et al., 2012).

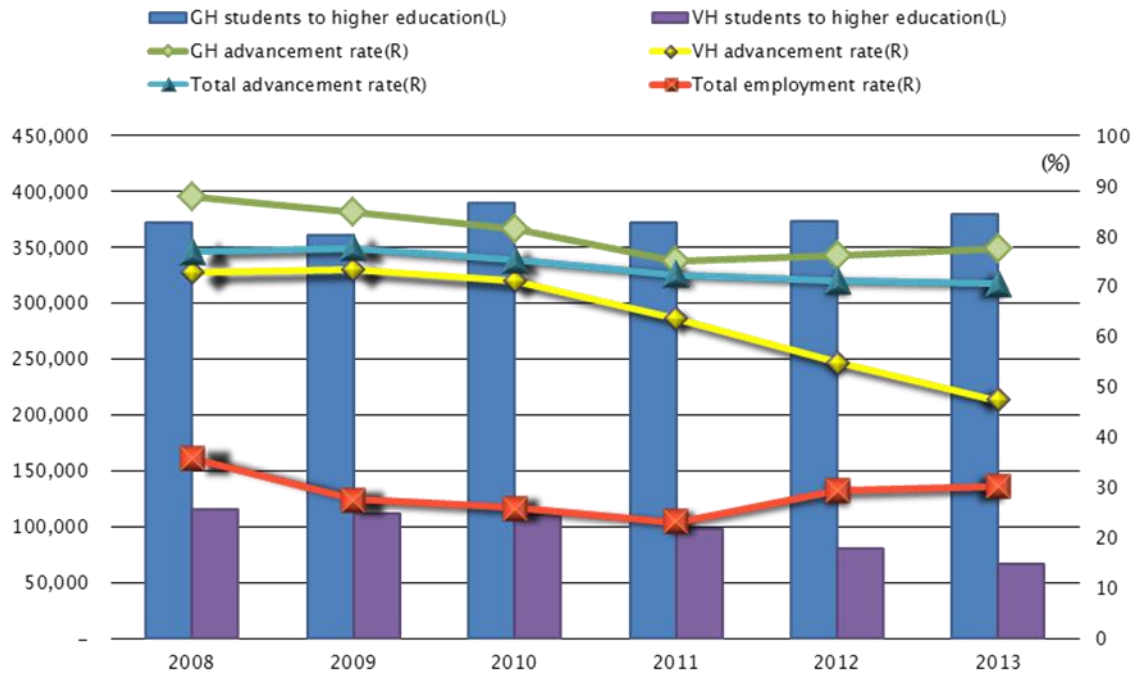
In the "Diversification of 300 High Schools Project," the government succinctly detailed high school educational goals aimed at reshaping secondary-level vocational high schools by converting existing high schools into specialized high schools and promoting Meister Schools.

Specialized and Meister Vocational High Schools merit attention. The Policy for Promoting 50 Meister High Schools aims to reform secondary vocational education in a changing environment. Meister High Schools aim to improve on existing vocational high schools by providing highly practical education tailored to industry demand in order to develop job-oriented competency and create skilled experts (Young Meisters). The government has provided a variety of incentives to Meister Schools, including tuition waivers, mandating of school dormitory systems, and improving teachers' abilities with field experience (Park, 2011). In sum, Meister Schools aim to reshape secondary vocational education towards the provision of financial incentives for students and high quality industry-tailored education.

Specialized high schools are also decreasing in number due to streamlining, from 691 in 2010 to 400 by 2015, in order to strengthen industry-school cooperation and induce higher rates of employment upon graduation with the goal of addressing skills shortages, especially in SMEs.

As the Korean government has aimed to motivate vocational high school students to enter the labor market upon graduation, shifts in higher education and employment entrance rates subsequent to secondary vocational schools' reform merit investigation. Figure 8 shows specialized high school students' career decision trends upon graduation. Employment rates were roughly 38% in the early 2000s, dropped continuously to 16.7% in 2009, and then rose to 40.6% in 2013. In consequence, university advancement rates dropped from over 70% in 2009 to 41.6% in 2013.

Figure 8 Higher Education Advancement by Type of High School



Source: Korean Education Statistics Service, 2014.

3.2. Preliminary Results of Reform

In recent years, the Korean government has launched the so-called “Job First, Study Later” initiative, which prioritizes the reform of the secondary vocational education system. As the Korean economy becomes increasingly knowledge-based, and alongside high tertiary education attainment rates, the attractiveness of secondary vocational high schools has continued to decline. However, regarding demand for mid-skilled personnel, vocational high schools need to be realigned to provide their students with new skills and with career paths suited to technical experts. Promotion of Meister High Schools and streamlining of specialized high schools therefore merits attention, since these initiatives may demonstrate the Korean skills development system’s responsiveness to changing environments as well as the effectiveness of government intervention in skills development.

Although the effects of these policies have not yet been fully evaluated, the initial outcomes of the reforms are quite impressive with increasing graduate employment rates and higher levels of employer satisfaction with graduates’ competence and performance. According to a recent survey of employers’ satisfaction with Meister graduates, roughly 90% of employers

indicated satisfaction with graduates' core vocational, main subject, and main practicum competence (89.9%, 87.7%, and 84.9%, respectively). In addition, 66.3% of respondents rated Meister graduates as equivalent to junior college graduates, with 28.4% rating Meister graduates as equivalent to high school graduates (Kim and Choi, 2014). These results suggest the success of secondary vocational high school reforms. Employment rates of secondary vocational high school graduates continue to increase. The "Work First, Study Later" strategy, which is used as a specific measure for attracting students allowing them to combine work and study and helping them set up career pathways, contains the cause of this success.

Chapter 6

Conclusions

By Kirak Ryu

This chapter briefly summarizes the previous chapters' major findings and makes policy recommendations concerning the sharing of knowledge and experience through skills development programs between LAC and Korea.

Thus far, this paper has investigated the Korean government's success in developing a skilled workforce to meet demands of labor at each phase of economic development. Three factors contributed to the positive effect of the Korean government's intervention in the Korean skills development system. First, the intervention established relevant legislation and qualification systems that encouraged employers to invest in workforce training and motivated employees to seek and undertake vocational training. In order to prepare the infrastructure, the government drew on grants and loans from foreign governments and international agencies such as the Asian Development Bank and the International Bank for Reconstruction and Development during the early stages of its economic development.

In the 1970s, the Korean government set up a funding scheme targeting skills development programs and including mandatory in-plant training for employers whose workforce or payroll was greater than a certain size. In response to skills shortages and employer disincentives, the government set up a levy grant system under the Employment Insurance Fund, which required a broad range of employers to financially contribute to vocational skills trainings, thus helping to stabilize funding streams in Korea. However, due to challenges emerging from labor market segmentations according to employer size and sector, the current financing system must ensure its sustainability and boost training programs' effectiveness of delivery and governance.

To manage these challenges, the Korean government is currently reorganizing skills development programs, among which the development and application of National Competency Standards, the establishment of regional HRD committees, and the reform of secondary vocational high schools are critical.

These policy interventions aim at shifting the long-established central government-led, supply driven VET system towards a locally based, demand driven model, which calls for a public-private partnership in delivery and governance of skills development policies (Small, 2006).

These initiatives have had some positive effects: the National Competency Standards have been developed for almost all occupations and formal education institutions and training providers are adopting learning modules based on NCS to reorganize their curricula. This may help to shift the Korean labor market in favor of employee competency and to provide alternative and non-traditional career paths by connecting critical transitional moments in a more flexible and recursive manner.

However, the Korean central government must still perform a significant role in managing and monitoring skills development. It should continue to use policy to foster public-private partnership in skills development, as local municipalities and sectoral stakeholders are yet to develop their own capabilities in this area. In addition, NCS and regional HRD committees need to further develop their roles and functions in order to better meet the diversified demands of business and employees and adapt to rapid technological and organizational change. To further expedite the fine-tuning of skill supply in rapidly changing markets, forecasting skill demand and supply requires greater attention, although it is becoming increasingly difficult to predict the demand for and supply of skills.

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