Workforce Development in the Republic of Korea

Policies and Practices

Asian Development Bank Institute

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Young-Hyun Lee

Asian Development Bank Institute

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Preface

The strong performance of the Korean economy during the last four decades has been widely recognized. Korea entered the early 1960s as a typical labor-supply economy with scarce resources. During that decade, unskilled and semi-skilled workers were mobilized into manufacturing industries such as textiles, footwear, and garments. During the 1970s, the government embarked upon a radical policy of economic structural transition towards the development of heavy chemical industries. By the 2000s, a shift towards more technologically advanced products was underway, and high-tech and service industries were able to compete successfully with industries of more developed economies. It is noteworthy that workforce development in particular has contributed to this economic restructuring and the high economic growth rate that Korea has enjoyed during this period.

Workforce development can of course be attributed to a number of factors including government policies, the personal efforts and commitment of the Korean people, and the human resource management of enterprises. However, in this work I focus on the role of the government, which has been pivotal in the process of the rapid industrialization of the Korean economy that has taken place in the post-Korean war era.

This report focuses on Korea's education and training policy during the 40 years since the founding of the government of the Republic of Korea. In the early 1960s, the Korean government established economic growth as its primary goal and began to mobilize the nation's resources towards this end. Since then, it has restructured the education and training system in order to supply a more highly skilled workforce required by changing industrial demands.

This report begins by examining the economy and the labor market as they relate to workforce development. Section 2 discusses the education system–and especially the all important screening process within the system that determines which children with which particular ability levels are channeled into which type of schools. The next two sections present a detailed analysis of the two main types of workforce development: policies and practices of vocational education and vocational training. Section 5 focuses on training and learning in enterprises, and individual cases of

large firms and good practices of lifelong learning companies are presented. The qualification system and vocational skill testing system are dealt with in some detail in Section 6. The last section briefly describes some of the labor market challenges that the Korean economy is currently facing, proposes future policy directions and outlines some of the tasks confronting workforce development with a view to revamping the vocational education and training system.

The major data source of the report is government statistics, while interviews with government officials were also conducted to obtain data that were not publicly available. Data on education and training in schools, institutes, and companies were collected from internal records and interviews with the respective official representatives. The text has also tapped into a wealth of data from previous studies.

While the report covers a broad topic, it does not examine specific policies or programs in any great detail. Nevertheless, despite this acknowledged shortcoming, the author hopes that this work will pave the way for more research and publications that take a more in-depth look at individual efforts for learning as well as the commitment made by companies to develop highly skilled workforces.

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I. THE ECONOMY AND LABOR MARKET

A. Socio-economic Contexts

Country profile

The Republic of Korea (hereafter Korea) is a small country of 99.600 square kilometers with a population of 48.3 million as of 2005 (National Statistics Office (NSO), 2005).

According to the written history of Korea, the earliest state was founded by Tangun, the mythical progenitor of the Korean people. This tribal state, called Ancient Chosun, was terminated around 100 B.C. with the advent of the "Three Kingdoms." The Three Kingdoms were followed by Unified Shilla in the south in the 7th century and Parhae, which succeeded Koguryo, in the north. Thus, Korea entered a brief period of "Two Kingdoms" which ended with the fall of Parhae. In the 10th century, the Koryo Dynasty reigned on the Korean peninsula. It was followed by the Chosun Dynasty in the 14th century, which continued up to the Republic of Korea, inaugurated in 1948 after 35 years of interruption by Japanese colonial rule.

Korea is a constitutional republic. The executive, the legislative, and judiciary constitute the three branches of government under the President. The legislature is unicameral and the judiciary is composed of the lower court, the court of appeal and the Supreme Court. The nation is divided into 16 administrative units: seven metropolitan cities and nine provinces. Korea has centralized education and training systems. The government plans and set the standards on education and training. Recently, the Korean government has made efforts to transform the centralized system into a more decentralized one.

Ethnically, Koreans are members of the Mongolian race, and speak one common language. The language, which may be a Ural-Altaic variant, uses a unique phonetic alphabet called "Hangul," known as a scientifically designed system that is easy to read and write.

About 79.7% of the total population lives in urban areas in 2000 (NSO, Korea Statistical Yearbook, 2006). The population density is one of the highest in the world, accommodating 483 persons per square kilometer in 2004 (NSO, Korea Statistical Yearbook, 2006).

Economic Development

Over the past four decades, the Korean economy developed at a remarkable rate and the country came to be known as one of the Asian "four tigers." This high-growth period was characterized by substantial increases in investment in physical and human capital.

Korea began the early 1960s as a typical labor-surplus economy with a scarce endowment of natural resources and a small domestic market. The government set economic growth as its primary goal and began to mobilize the nation's resources toward this end. During the initial stage of export promotion in the 1960s, unskilled and semi-skilled workers were rapidly mobilized into labor-intensive manufacturing industries such as textiles, footwear and garments. Using its abundant supply of labor, Korea achieved an extremely rapid economic expansion.

During the 1970s, the government embarked upon a radical policy of economic structural transition towards the development of heavy-chemical industries. It used commercial loans through the nationalized banks to reward companies conforming to state policies. After the early 1970s these "policy loan" incentives were provided to firms to invest in state-targeted heavy manufacturing industries. In response to these growth-minded policies, firms expanded their economic activities, most of them following strategies based heavily on the production of low-priced goods.

By the 2000s, a shift towards more technologically advanced products was underway, and high-technology and service industries were able to compete successfully with the industries of more developed economies.

Table 1. Background Statistics

(Unit: thousand persons, percent)

	1970	1980	1990	1998	2000	2005
Population	32,241	38,124	42,869	46,430	46,136	48,294
GDP per capita (US$)[a]	650	2,324	7,751	6,843	9,675	16,306
Unemployment rate	4.4	5.2	2.4	6.8	4.1	3.7
Labor force	10,062	14,431	18,539	21,390	21,950	24,267
Labor force Participation rate[b]	47.6	59.0	60.0	60.7	60.7	62.7

a) Using current purchasing power parities, at current prices.

b) Population aged 15 and over

Sources: NSO (1970-2005). Annual Report on the Economically Active Population Survey.

Over the past 35 years, Korea's economic growth has been spectacular. From 1970 to 2005, the gross domestic product (GDP) rose at an annual rate of nearly 7 per cent from a per capita income level of US$650 in 1970 to US$16,306 per capita (adjusted for the purchasing power of the currency) in 2005. This growth resulted in a 25-fold increase in per capita GDP during the same period. The Korean economy has become the 11th largest in the world (GDP: USD 787.5 billion) and is known for its export concentration, accounting in 2005 for 36.12% of GDP.

Overview of the Labor Market

As of 2005, the total Korean labor force was 24.267 million, with an economic participation rate of 62.7%. From 1970 to 2005, the labor force more than doubled from 10 million to 24 million. The labor force participation rate increased from 47.6% to 62.7% during the same period (Table 1). The increase in the labor force participation rate can be attributed to the growing participation of females. The labor force participation rate of females rose from 39.3% in 1970 to 50% in 2005, while that of males dropped from 77.9% to 74.4% during the same period. However, the labor force participation of Korean women is still far lower than the average of OECD countries.[1]

About 8.1% of the workforce is employed in the primary sector, 19.1% in the secondary sector and 73.5% in the tertiary sector. The unemployment rate (measured according to the international definition) has varied in the last ten years from 2.5% in 1994 to 6.8% in 1998 and 3.7% in 2005 (NSO, 2006). The high unemployment rate in the late 1990s was due to the Asian financial crisis.

The majority of Koreans are employed at small and medium-sized firms. In 2004, about 86.5 per cent of the total labor force was employed in such firms. There were 3.00 million small and medium sized firms representing 99.8 per cent of Korean businesses and employing 10.42 million persons.

The Korean labor market is dual, being divided into regular and non-regular workers. The labor market for regular workers is characterized by lifetime employment, low risk of layoffs, good social security, trade-union representation, at least in large manufacturing companies, and minimal inter-company mobility. The wage system for regular workers continues to be seniority based. The market for irregular workers can be described as a competitive one with almost no rules imposing restrictions on hiring and

1 The average labor force participation rate of women in OECD countries was 60.1 % in 2004 (OECD, Employment Outlook, 2005).

firing. Wages are based on market conditions, irregular workers have no union representation, some are not integrated into the social security system, and temporary, daily or temporary agency workers are taken on for a limited period. Irregular workers earn around 20% less than regular workers, if job tenure, job type and working hours are taken into account (Bosch, 2004). The percentage of irregular workers, defined as those working for a specific length of time and not entitled to certain allowances, was 48.9% in 2004. As well as being divided into regular and irregular workers, the labor market is also divided according to company size and sex. In companies with between 5-9 permanent employees, monthly wages are just over 50% of those in companies with more than 500 employees and fringe benefits in the former are as low as 22% of the equivalent figure for the latter. In a way similar to the relationship between regular and irregular workers, there are few opportunities for workers in small companies to move to larger ones. The division in the labor market, the lack of mobility prospects for irregular workers and workers in small and medium enterprises (SMEs), and the seniority-based wage system provide little incentive for many workers to invest in their own human capital (Bosch, 2004).

B. Labor Market Challenges for Workforce Development

Rapid technological development and the globalization of trade and labor markets have had a significant impact on the nature of work, the way it is organized and the skills it requires. These changes have accompanied the growth of the service sector, including a shift to casual or part-time work; occupational change and the emergence of new occupations. During the rapid industrialization of the past 40 years or so, the proportion of highly skilled workers increased, while the proportion of unskilled workers declined.

Increasing Demand for Skilled Workers

Table 2 shows the changes in employment since 1970 by industry. During the three and half decades since then, employment in the service sector has increased steadily. Employment in mining and manufacturing also climbed gradually, peaking in 1988 at 28.5% of total employment. As of 2005, the service industry accounted for 73.5% of employment, with this figure expected to increase to 76% by 2010.

The knowledge-based component of manufacturing and service industries is expected to continue to grow. For example, knowledge-based

manufacturing accounted for 60.0% of the total manufacturing sector, and the share is forecast to increase to 67.1% by 2010. During the same period, the share of knowledge-based services is expected to grow from 40.0% to 51.3% (MOCIE, 2002).

Table 2. Employment by Industry

(Unit: thousand persons, percent)

	1970	1980	1990	2000	2005
Employed persons	10,062	14,431	18,539	21,156	22,856
	100.0	100.0	100.0	100.0	100.0
Agriculture, forestry & fisheries	50.5	34.0	17.9	10.6	7.9
Mining & manufacturing	14.3	22.5	27.6	20.4	18.6
(manufacturing)	13.2	21.6	27.2	20.3	(18.5)
Service and others	35.2	43.5	54.5	69.0	73.5
(construction)	2.9	6.2	7.4	7.5	7.9
(sales, hotel, restaurants)	-	19.2	21.8	27.2	25.4
(finance, insurance, business)	-	2.4	5.2	10.0	12.2

Source: NSO (1970-2005). Annual Report on the Economically Active Population Survey

Table 3. Increase of Highly Skilled Jobs, 1993–2005

(Unit: thousand persons, percent)

	1993	1995	1997	1999	2001	2003	2005
Total (persons)	19,328	20,432	21,106	20,281	21,572	22,139	22,856
Highly-skilled workers[a]	15.0	16.4	17.5	19.1	18.9	20.1	20.9
Non-production workers[b]	48.4	50.6	52.7	53.8	57.6	59.5	59.8

Source: NSO (1993-2005). Annual Report on the Economically Active Population Survey
Note: a) managers, professionals and technicians
b) clerical workers and sales & services workers in addition to a).

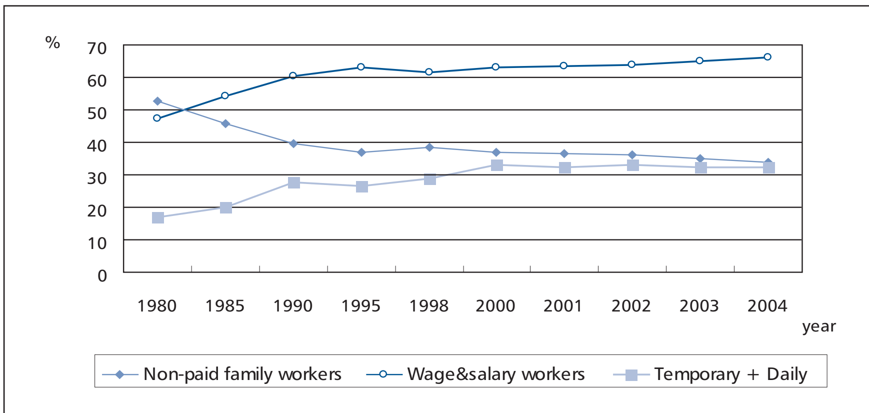
The structural changes in the Korean economy have been accompanied by changes in the workforce profile. The percentage of highly skilled workers—such as managers, professionals and technicians—has risen, while skilled and unskilled production workers declined between 1993 and 2004. Skilled workers in the agricultural sector have also decreased during the same period (Table 3).

It is projected that this trend will continue during the coming decades; the percentage of highly skilled workers will continue to rise while that of agricultural skilled workers and unskilled production workers will continue to decline.

Polarization of the Labor Market

As previously mentioned, the Korean labor market is dual, divided into regular and non-regular workers. A large proportion of Koreans are employed in "non-regular" jobs of short duration. In 2004, about 48.9% of employees had either a temporary or daily contract, and the proportion of employees with "regular" contracts was therefore just about half. The proportion of employees in "non-regular" jobs such as "temporary," part-time or irregular has continued to grow during the last two decades.

Figure 1. Proportion of Workers with Different Employment Patterns



Source: NSO (1980-2004). Annual Report on the Economically Active Population Survey

A detailed analysis of employment by status suggests a degree of labor market duality by gender, age and education level, with younger and higher-educated men performing most of the regular jobs. The incidence of non-regular work is high among women, older workers and those with low levels of education.

Another aspect of polarization is the sharp rise in the number of jobs at both ends of the pay spectrum: there are more jobs for workers in the top 30% and the bottom 30% income categories, whereas the number of jobs for middle-income workers has dropped. Moreover, there are growing gaps in wages between companies of different sizes and in working conditions

between the standard and non-standard workforce. This notable trend of polarization in the labor market is giving rise to concern that it may become a stumbling block to economic growth. Consequently, improving opportunities for education and training for the lower income bracket is critical in order to overcome the problem of deepening labor market polarization.

Rapidly Aging Workforce

The Korean workforce is aging[2] as the general population ages at an unprecedented pace. The country entered the ranks of an "aging society" (referring to nations whose citizens aged 65 or older constitute 7% or more of the population) in 2000, and by the year 2018 is expected to become an "aged society" (where people aged 65 or older comprise 14% or more of the population). Furthermore, the birth rate continues to fall (hitting a new low of 1.18% in 2005). If this trend continues, about 50% of the workforce will be 50 years of age or older by the year 2050.

The change in the demographic structure of the population will have tremendous ramifications for Korea's workforce development policies and will demand far-sighted vision on the part of government, industry and education and training organizations to meet the changing skills requirements. A shift will be needed away from an emphasis on vocational secondary education, entry-level training and further education for young people towards a greater concentration on the retraining and reskilling of adults.

Mismatch between Demand and Supply

Following the Asian economic crisis of 1997-8, it became more difficult for young people to integrate themselves into the labor market. Over the past few years, the unemployment rate among young people has continuously been more than twice as high as the overall unemployment rate.

In spite of this high unemployment among young people, small and medium-sized firms continue to suffer from a labor shortage. The labor shortage is especially serious among the so-called "3D jobs" (Difficult, Dangerous and Dirty) in SME manufacturing and is spreading to service industries such as construction, restaurants, cleaning, and healthcare.

2 According to the results of a survey of 220 manufacturing companies in the Seoul area conducted by the Korean Chamber of Commerce and Industry, the average age of blue-collar workers increased by 2.0 years, from 35.5 in 1999 to 37.5 as of the end of 2004 (KCCI, 2004, www.korcham.net).

Further aggravating the situation has been the expansion of education, which has resulted in a reduction in the domestic supply of low-skilled workers.

a. Youth Unemployment

The unemployment rate among youth, comprising those aged 15-29, stood at 5.4% in 1991 and has steadily risen since then to record 7.9% in 2004. Men, and younger men in particular, have a higher unemployment rate than women, who often give up work on marrying.

Table 4. Unemployment Rates by Age, Gender and Educational Attainment (2004)

(Unit: percent)

		Male	Female
Age	Total	3.9	3.4
	15-29	9.7	6.9
	30-39	3.2	2.8
	40-49	2.4	2.2
	50-59	2.7	1.7
	60 and above	1.6	0.7
Educational attainment	under middle school	3.3	1.8
	High school	4.7	4.1
	College and university	3.1	4.1

Source: NSO (2004). Annual Report on the Economically Active Population Survey.

In addition to this quantitative mismatch in labor supply and demand, there is a mismatch in terms of labor quality: only 26% of the knowledge and skills that college graduates have learned through higher education is useful for their work in companies (Chung, Tae Myeon, 2005). Survey results show that employer satisfaction on education and training is very low (KCCI, 2006).

First, it would seem that youth unemployment is structural in nature and will require policy attention. The unemployment rate of young Koreans aged 15 to 29 has tended to grow, and reached a high level in the aftermath of the crisis. High rates of youth unemployment may reflect a long job search process on the part of university graduates, who often stay at home and can therefore be selective when looking for a job. In addition, the mismatch between certain education curricula and labor market requirements creates serious school-to-work transition problems for many young new entrants.

Second, Korean unemployment has long been much higher among higher-educated workers than among their lower-educated counterparts, in contrast with the pattern prevailing in other OECD countries. However, since the crisis, unemployment rates among the lower-educated have recorded a marked upward trend. Unemployment rates among workers with high-school educational attainment are relatively high, suggesting that the high school and vocational training curricula might not adequately match labor market requirements.

b. Labor Shortage and Utilization of Foreign Workers

As a result of the shortage of workers in 3D jobs, during the past few years more workers have been recruited from outside Korea. It is believed that the majority of illegal foreigners staying in the country are former industrial trainees doing 3D jobs in Korea. Some foreign workers come to Korea under the "Internal Trainee-System" (ITS). They are hired as trainees but work normal working hours and are not covered by the Labor Standards Act. On 1 August 2003, the Korean parliament adopted a law regulating work permits and residence for foreign workers, which was implemented in 2004 (Bosch, 2004). Under the new system, foreign workers have the same rights as domestic workers. However, the work contract period is one year at a time and the maximum work period is 3 years. According to information from the Ministry of Labor, the proportion of foreign workers is 2.0% of the total working population. There are 361,000 foreign workers in Korea, but only 19% have legal status (Oh, Ho-Young, 2005).

C. Current Skill Levels

The previous section highlights some key aspects concerning the demand side for labor in Korea and its implication for workforce development. Workforce development policies also need to be shaped by reference to the "supply side."

The quality of labor supply is found by examining the level of skills held by those in the labor force. The levels of education attainment of the labor force in terms of years of schooling are shown in Table I-5. From 1970 to 2005, educational level of Koreans in terms of years of schooling has dramatically advanced from average years of schooling of 5.7 years in 1970 to 11.2 years in 2005.

Skill formation, as indicated by levels of education and attainment, has improved in Korea over the past quarter century. The proportion of the labor force completing college education rose from 6.7 per cent to 32.9 per cent

Table 5. Average Years of Schooling by Age Group

(Unit: percent)

	1970	1980	1990	2000	2005
Average	5.7	7.6	9.5	10.6	11.2
6-19	5.3	6.5	7.7	5.7	4.2
20-29	8.3	9.9	12.0	13.1	13.8
30-39	7.2	9.2	11.1	12.8	13.6
40-49	4.8	7.6	9.5	11.2	12.3
50 and more	2.0	4.1	5.5	7.2	8.2

Source: NSO (1970-2005). Population & Housing Census

between 1980 and 2005. During the same period the proportion of those who were primary school graduates and under decreased from 51.3 percent to 19.1 percent.

This high educational level of the labor force supports the claim that a trained workforce, together with a more professional workforce, has contributed to improving productivity and enhancing the industrial structure in Korea.

Table 6. Labor Force by Educational Attainment

(Unit: percent)

	1980	1985	1990	1995	2000	2005
Primary school graduates & under	51.3	37.7	29.1	21.4	23.0	19.1
Middle school graduates	20.2	21.1	19.5	16.3	13.3	11.2
High School Graduates	21.8	30.9	37.7	43.2	39.4	36.8
College, university graduates & over	6.7	10.3	13.7	19.1	24.3	32.9

Source: NSO (1980-2005). Population & Housing Census

II. THE EDUCATION SYSTEM

A. Educational Growth and Development

Overview of Educational Policy Reforms

Following the establishment of the Republic of Korea in 1948, an education law was enacted on the basis of democratic principles. Accordingly, an autonomous educational structure and a compulsory education system were introduced, providing an institutional foundation of educational practices (Kim, Shin-Bok, 2005).

- Compilation and distribution of elementary school textbooks
- Adoption of the 6-3-3-4 type of linear school system
- Six-year compulsory education plan (1954-1959)
- Introduction of adult education for the elimination of illiteracy and supplementary in-service education for teachers

In the midst of the Korean War during 1950-1953, efforts were continued to revive Korean education to fulfill the missions of overcoming the national crisis and leading the reconstruction.

Remarkable economic progress and the subsequent drastic changes in politics, society, and culture brought about a quantitative expansion of Korean education in the 1960s and 1970s. This expansion included an increase of the student population, the expansion of educational facilities and the growth in the number of teachers. This rapid growth of the school population inevitably resulted in overcrowded classrooms, oversized schools, and excessive competition in the college entrance examination (Kim, Shin-Bok, 2005). In response, reform measures were taken to return school education to its proper state. The major policies were as follows:

- Reform of the teacher education system
- Abolition of the middle school entrance examination (1968)
- High School Equalization Policy (1974)
- Implementation of the “Preliminary Test for College Admission”

- Upgrading of normal high schools to two-year teachers' colleges, and the standardization of the four-year education for college of education

Korean education in the 1980s endeavored to normalize and enhance the quality of education. Under the Constitution, the Fifth Republic clearly institutionalized lifelong education. Some of the actions taken during this period were:

- Launching of exclusive educational broadcasting
- The July 30 Education Reform (1980) including the introduction of a graduation quota system for colleges and universities
- Initiation of an education tax to secure financial resources for educational investments

Since 1990, Korean education has emphasized human education, preparing for the future on the basis of the pursuit of quality in education in the 1980s. In 1995, the government initiated a comprehensive education reform to eradicate chronic problems. The underlying principles of the reform were to enable every student to cultivate his or her capabilities and creativity and to improve the flexibility of the education system so that every student could enjoy learning through his/her own interests at any time and in any place (Kim, Shin-Bok, 2005).

In 1999 the Ministry of Education launched a reform project for higher education, called Brain Korea 21. The government adopted a plan to invest US$1.2 billion over seven years for developing world class graduate schools and local universities, enhancing the research capabilities of graduate schools, and building infrastructure for academic research. Since then the government has systematically implemented the education reform tasks as follows:

- Establishment of a system for human resource development;
- Consolidation of elementary and secondary education to strengthen the nation's basic scholarship;
- Enhancement of college education to the level of advanced countries;
- Lifelong and vocational education to establish an ability-oriented society.

Development of Education

Korean education saw rapid growth, in enrollment and in accompanying facilities and teachers. The growth occurred not only in the primary grades but also in middle schools, academic and vocational secondary schools, and at the level of higher education. The rate of growth was as high or higher than that in most countries for all levels.

A number of unique attributes of education in Korea may have contributed to the system's capacity for rapid expansion after 1945 despite low levels of national income. They all stem from a very high social demand for education, best explained by a centuries-old tradition of respect for the educated combined with a recognition that both social and economic position in modern Korea were closely linked, for most persons, with the level of educational attainment.

The dramatic expansion of school education has been achieved with a relatively low level of public spending on education, at 4.8 percent of GDP, ranking 14th on this measure among the OECD. However, private spending on educational institutions is 3.4 percent of GDP, a much higher rate than other OECD nations (OECD, Education at a Glance 2004). These figures account only for funds expended on educational institutions; expenditures on private tutoring, for example, are not included. The indicators demonstrate that private demand for education is very strong in Korea.

Although this expansion of school education in Korea is not unwelcome, concerns and criticisms have been voiced about the fact that the expansion has mostly been a quantitative one. Some find that school education is largely academically oriented and still poorly prepared for the knowledge-based

Table 7. School Enrollment Rates

(Unit: percent)

	Primary school	Middle school	High school	Tertiary
1970	92.0	36.6	20.3	5.4
1980	97.7	73.3	48.8	11.4
1990	100.5	91.6	79.4	23.6
2000	97.2	95.0	89.4	52.5
2005	98.8	91.9	90.1	61.7

Note: For enrollment rates, percentages of corresponding school-aged children

Source: Ministry of Education and Human Resources Development (MOE&HRD) and the Korea Educational Development Institute (KEDI)(1970-2005). Statistical Yearbook of Education

economy and society. A long-lasting criticism is that secondary school students pour all their energy into rote learning for the college entrance examination. Recently, similar study patterns are found among college students as they prepare themselves for paper-based tests in order to get a better job.

The enrollment rate is high at all school levels (Table 8). Today, almost all young people complete secondary school and the percentage going on to higher education is among the highest in the world (As of 2005, about 82 percent of high school graduates advanced to university/college). The quality of secondary education is high as well, at least judging by international comparisons of academic performance.[3]

Table 8. Advancement Rates

(Unit: percent)

	Primary →Middle	Middle → High S	High school → Tertiary		
			Total	Academic H.	Vocational H.
1970	66.1	70.1	26.9	40.2	9.6
1980	95.8	84.5	27.2	39.2	10.1
1990	99.9	95.7	33.2	47.2	8.3
2000	99.9	99.5	68.0	83.9	41.9
2005	99.9	99.7	82.1	88.3	67.6

Note: Advancement rates are the percentages of students who advance to the next level of schooling.
Source: MOE&HRD)·KEDI (1970-2005). Statistical Yearbook of Education

B. School Education

The School System

Korea uses a school "ladder" structure, based on a 6-3-3-4 system which maintains a single track of school levels in order to ensure that every citizen can receive elementary, secondary (middle and high), and tertiary education without discrimination and according to the ability of each student.

The Education Law, which pertains to the educational system, prescribes as follows: "All citizens have the right to receive education according to their ability; all should receive at least primary education and such education as

3 In the second test of OECD Program for International Student Assessment given to upper level secondary students in 2003, Korea ranked first out of 41 countries in problem-solving, second in reading, third in math and fourth in science. In 2001, Korea ranked first in science. (*Korea Herald*, 8 December 2004).

may be prescribed by law; compulsory education is guaranteed in such (a) manner as shall be prescribed by law; the state is responsible for promoting lifelong education; and basic matters related to the management of systems of school education and lifelong education, financing of schools and the status of teachers are prescribed by law."

The Education Law (article 81) stipulates the establishment of the following types of schools: (1) primary schools, middle schools, high schools and colleges and universities; (2) universities of education and colleges of education; (3) junior colleges, air and correspondence universities and polytechnic universities; (4) trade schools and trade high schools; (5) civic schools and civic high schools; (6) special schools; (7) kindergartens; and (8) miscellaneous schools. Among these, the schools in the first category constitute the backbone of the education system. Table 9 shows details of the education system in Korea.

The academic year consists of two semesters; the first semester begins on 1 March and ends on 31 August. The second semester spans 1 September to the end of February. Universities, colleges of education and junior colleges are operated on the basis of two or five semesters according to school regulations.

Elementary and Secondary Schools

In Korea, schooling usually begins at the age of six, when children move from kindergarten into elementary school. Elementary and middle school education are compulsory and together last nine years. Upon completing their primary education, learners who wish to pursue secondary education are assigned, most often, to the middle school nearest their residence.

a. Elementary School Programs

The formal curriculum for primary education is made up of eight principal subjects: moral education, Korean language, social studies, arithmetic, science, physical education, music, and fine arts, and practical arts. The curriculum also includes extracurricular activities and optional courses. Practical arts, which is a required course for students in grades 4-6, provides students with opportunities to use hand tools, simple machines and other types of materials.

Even though the instruction the students receive in primary schools seldom has an explicit vocational orientation, there are many activities in the program that offer possibilities for the development of vocational awareness and understanding.

Another important aspect of vocational education is its focus on attitude and work ethics, including respect for honest labor, and hands-on work. Korean social ethics emphasize the dignity of labor and the individual's self-worth. Thus, the primary school experience can contribute to the development of wholesome attitudes toward work.

The greatest contribution of our primary schools to the development of vocational skills undoubtedly will be found in areas that are more general in nature. Competency and skills in reading, speaking, writing and computing, for example, are as basic to most vocations as they are to primary school programs. As primary school children develop abilities to communicate their ideas, make sound judgments, analyze relationships between separate elements, and predict the consequences of specific actions, they are preparing themselves for vocational competency. In most vocations, such abilities are far more valuable than specific manipulative skills.

Interpersonal skills are another area where primary schools can make a substantial contribution to vocational competency. It has often been argued that more people fail in their jobs because of an inability to get along with others rather than for the lack of ability to perform the specific tasks assigned to them. Teachers accomplish the most when they are aware of the importance of this need.

b. Middle School Programs

The middle school curriculum is composed of 11 required subjects, elective subjects, and extracurricular activities. Required subjects include vocational subjects for establishing a close relationship between occupations and productive education.

The subjects directly related to productive work in middle schools are technology and industry, home economics, and computer science. Among these, computer science is an elective subject. Of the 102 units needed to complete the middle school programs, students are required to take 4 units of home economics and 5 units of technology and industry.[4]

The middle school home economics program encompasses a wide range of content and provides various levels of skill development. In the area of food, for example, attention is given to a basic understanding of nutritional problems, marketing, food preparation, and the use of cooking equipment, serving, and other skills.

The technology and industry program involves courses related to technology in manufacturing, construction, communication and transportation,

[4] One unit means the amount of school learning undertaken in 50 minutes of instruction per week for one semester, which is equivalent to 17 weeks.

Table 9. Korean School System (as of 2004)

Classification		Number of Schools			
		Total	National	Public	Private
Grand Total		19,381(1,002)	103(158)	13,219(14)	6,059(830)
Kindergarten		8,246	3	4,325	3,918
Elementary School Course (Year 6)	Total	5,542	17	5,449	76
	Elementary School	5,541	17	5,449	75
	Civic School	1	-	-	1
Middle School Course (Year 3)	Total	2,900	10	2,218	672
	Middle School	2,888	9	2,217	662
	Civic High School	4	-	1	3
	Miscellaneous School	8	1	-	7
High School Course (Year 3)	Total	2,141	17	1,170	954
	General High School	1,351	12	704	635
	Vocational High School	729	5	420	304
	Air & Corr. High School	39	-	39	-
	Trade High School	14	-	-	14
	Miscellaneous School	8	-	7	1
Special School		141	5	47	89
Junior College Course (Year 2-3)	Total	162	7	8	144
	Junior College	158	7	8	147
	Miscellaneous School	1	-	-	1
	Cyber College	2	-	-	2
	Corporate College	1	-	-	1
Under-graduate Course (Year 4)	Total	221	44	2	175
	University	171	24	2	145
	Univ. of Education	11	11	-	-
	Polytechnic University)	18	8	-	10
	Corporate University	1	-	-	1
	Air & Corr. University	1	1	-	-
	Miscellaneous School	4	-	-	4
	Cyber University	15	-	-	15
Graduate School	Total	28(1,002)	(158)	(14)	28(830)
	Independent Graduate School	28	-	-	28
	Graduate School	(1,002)	(158)	(14)	(830)

Source: MOE&HRD·KEDI(2004). Statistical Yearbook of Education

agriculture, industry, commerce, fishery and career guidance. The courses are designed to enhance knowledge on materials, energy, tools, machine and industrial manufacturing and the use of materials and tools, teaching basic knowledge and skills common to all occupations for students to adjust to industrial society and improve their ability to suit their own aptitude.

c. High School Programs

High school education aims at providing advanced general and specialized education building upon the achievements in the middle school. High schools are classified into academic, vocational, and other schools, e.g., foreign language, art & athletic, and science high schools.

Graduates of middle schools or those who have completed an equivalent level of education may enter high schools. Admission into high schools used to be based on the applicant's score on the entrance exam, but admission processes began to vary in 1974 when a high school leveling policy was launched in selected regions. Students who seek vocational education can choose a school and submit an application, upon which they are admitted either through an entrance examination or based on middle school records. Meanwhile students who opt for general education are not given the opportunity to select their own schools, but rather are assigned to a school in their residential district.

In the first year of high school, all students must take the same courses, but in the second year they can select courses from humanities and social sciences, natural sciences and a vocational based curriculum, based on their own aptitudes and desires. However, a program is under consideration to offer a greater variety of courses which will allow students to choose a curriculum matching their aptitudes and abilities.

Students in academic high schools, where advanced general education is practiced, select a major in the second year (11th grade) from the areas of humanities and social sciences, natural sciences, and vocational education. The choice is based on their own aptitude and interests, which, in turn, serve as links between their school courses and future careers. The majority of students opt to spend the first two years as preparation for university application. Students may transfer to the vocational track in the beginning of the third grade.

3) Higher Education

The higher educational institutions are divided into seven categories: colleges and universities; industrial universities[5], universities of education, colleges of education; junior colleges, broadcast and correspondence universities, polytechnic colleges and other institutions (including theological colleges and seminaries). The education period is from four to six years. The

5 Open Universities were renamed polytechnic universities in accordance with the Higher Education Law, which came into operation in March 1998. However, open universities are often named in various ways depending on the mission and objectives of the university.

Ministry of Education and Human Resources Development has control over such matters as student enrollment quotas, qualifications of teaching staff, curricula and degree requirements.

The government sets basic minimum requirements for universities regarding the admission process to promote the independence and responsibility of universities, normalize the public education system, and alleviate the burden of private tutoring costs. To expand the opportunity for higher education, the acceptance of donations from students and the ranking of high schools are prohibited. These measures are intended to contribute to normalizing the public elementary and secondary education system and guaranteeing fairness in the student admission process. In terms of the types of data to be utilized and the weight given to such data, universities may exercise independent authority in utilizing student records, the scholastic aptitude test (SAT) scores, essay writing, certificates and recommendation letters.

The scholastic aptitude test consists of five areas: language (Korean), mathematics, foreign language (English), social studies/science/vocational training, and a second foreign language/Chinese characters. Students may choose the subjects to be tested on, based on the basic principles of the Seventh Curriculum, allowing them to take either part or all of the tests in the subjects available. High school graduates who wish to continue on to college must have a good grade on "the national SAT" which is held once a year[6].

Because of the system of university admission by competitive exam, Koreans believe it is feasible to compare and rank universities on a single scale. Entrance exams of one sort or another are generally regarded as a necessary evil and the most impartial method of regulating access to education above middle school. Because of the need to prepare for the national university entrance examination, Korean high schools provide a sound grounding in mathematics, statistics, and basic science. Because of the high degree of standardization in high school curricula and the stringent requirements of the university entrance exams, there is but a small range of variation in background among students in these fields. Characteristically, schools in the Korean education system tend to be academic, or focused on what may be called general education.

6 Admission to colleges is determined on the basis of the scholastic achievement test (SAT), school achievement and the main entrance examination, the SAT being the most important of the three criteria.

C. Administration of Education and HRD Policy Coordination

Administration of Education

The Ministry of Education and Human Resources Development (MOE&HRD) is the central government organization responsible for the formulation and implementation of policies related to academic activities, the sciences and public education. The Ministry plans and coordinates educational policies that govern the elementary, secondary and higher educational institutes, publishes and approves textbooks, provides administrative and financial support for all levels of the school system, supports local education offices and national universities, operates the teacher training system and is responsible for overseeing lifelong education and developing human resource policies.

Headed by the Deputy Prime Minister and Minister of Education and Human Resources Development and a Vice Minister, the Ministry has two offices and four bureaus: Policy Management & Public Relations Office and School Policy Office, and Human Resources Policy Bureau, Lifelong Learning Bureau, University Support Bureau, and International Cooperation & Information Technology Bureau (www.moe.go.kr, September 2006). Under the supervision of the Ministry are the National Institute of Korean History, National Institute for International Education Development, the Appeal Commission for Teachers, National Institute for Special Education and National Academy of Sciences.

With the legislation of the local autonomy law in 1991, the educational administration became decentralized and MOE&HRD delegated much of its budget planning and major administrative decisions to local authorities.

In response to heightening concern for the diverse needs of local education and the skill required, district offices of education, distinct from the general administration, have been established in seven metropolitan cities and nine provinces, as well as in counties and equivalent administrative areas. The offices make decisions regarding education, art, and science, pertaining to their respective local areas.

HRD Policy Coordination

In January 2001 the Korean government elevated the Ministry of education (MOE) to the Ministry of Education and Human Resources Development (MOE&HRD) and promoted its head to Deputy Prime Minister, entitling the Minister to oversee and coordinate all major HRD related policies.

Until 2001, policies related to the development and utilization of human resources, including education, training, research and development, employment and social welfare, were implemented separately by several ministries without a comprehensive framework to integrate and coordinate them. Therefore, cooperation among ministries could hardly be expected.

The Minister of Education and Human Resources Development, as a Deputy Prime Minister, presided over "the Ministerial Commission on HRD," which consisted of 14 ministers. This meeting was organized in March 2000, in order to oversee, discuss and coordinate HRD-related policies at the central government level and to implement them in more systematic and efficient ways.

In December 2001, the government announced the National Human Resources Development Strategies for Korea as a mid-and long-term strategic plan for HRD at the national level. It was formulated through cooperative work between 18 HRD-related ministries and seven government-funded research institutes. This strategic plan set policy objectives and implementation strategies regarding the development and utilization of human resources, and is subject to renewal every five years by law. For each of the policy tasks identified in the strategies, respective implementation plans are prepared by the responsible ministry in conjunction with policy networks of relevant ministries, local governments, businesses and civic groups.

In August 2002, the Human Resources Development Act was enacted to support HRD policies by legally empowering the Deputy Prime Minister to oversee and coordinate the related ministries. The Act includes a requirement for the periodic revision of the National Human Resources Development Strategies for Korea, and provides for the formation and operation of a Ministerial Commission on Human Resources Development, evaluation of policy outcomes based on the analysis of investment in human resources development, and overall management of HRD information (Paik, Sung-Joon and Hyung-Mann Kim, 2005).

As explained above, the organizational scheme for HRD policy acquired its basic institutional framework by reshuffling the Ministry of Education, setting up the Ministerial Commission, and passing related acts between 2000 and 2002. As of 2005, this basic framework was still being maintained.

D. Financing of Education

Funding for Korea's education comprises that which comes from the central government, local government, and the independent resources of private schools. Reliance upon tuition payment by parents still remains high. The

bulk of the assistance comes from the government or is provided through the tuition paid by students, while contributions from donors, entrepreneurs or private organizations remain negligible.

The education budget of the central government is supported by funds from the nation's taxes. The central government's education budget provides funding for education offices which control elementary and secondary school education, the operating funding of national universities, some support for private universities, and for educational administrative and research organizations.

The budget for the Ministry of Education and Human Resources Development consists of: the general fund, the financial loan special fund, the state-owned property special fund, the special fund for the management of special taxes for rural areas, the special fund for local education, the transfer management fund, and the special fund for organizational management. The education budgets of local governments come primarily from subsidies disbursed by the central government.

The central government is obliged to bear the cost of remuneration for teachers in compulsory education and the annual grant for local education, which accounts for 13% of national tax revenue.

The total amount of the education budget has increased every year; the size of the Ministry of Education and Human Resource Development (MOE&HRD)'s budget recently accounted for around 3.3% of GDP. Meanwhile, the ratio of public education cost to GDP, which is the most basic indicator of investment in human resource development, stands at 6.2%.

MOE&HRD's budget accounts for approximately 2.6 trillion won out of the central government's budget of 147 trillion won, amounting to 18.0% in 2004.[7] This rate increased from 17.6% in 1970 to as high as 22.8% in 1995, before declining to 16% in 2000, but it has maintained an upward trend ever since.

Breaking down the education budget investment, primary and secondary education made up 86.7%, while higher education accounted for 12.4%, and lifelong & vocational education for 0.9%, respectively in 2004.

7 The average exchange rate at the time of this writing was about won 1,000 = $1.

Table 10. Ratio of Public Education Expenditure to GDP

(Unit: KRW billion, percent)

	National budget[1] (A)	MOE&HRD[2] (B)	B/A	Public education expenditure (C)	C/GDP
1990	22,689	5,062	22.3	8,524	4.6
1991	28,973	6,598	22.8	10,065	4.5
1992	36,224	8,206	22.7	12,181	4.7
1993	41,936	9,831	23.4	14,197	4.9
1994	47,594	10,879	22.9	16,291	4.8
1995	54,845	12,496	22.8	19,215	4.8
1996	64,927	15,565	24.0	22,708	5.1
1997	76,639	18,288	23.9	27,100	5.5
1998	77,738	18,128	23.3	27,813	5.7
1999	88,302	17,456	19.8	28,075	5.3
2000	93,937	19,172	20.4	31,507	5.4
2001	102,529	20,034	19.5	35,321	5.7
2002	113,899	22,278	19.6	38,830	5.7
2003	120,478	24,404	20.3	46,035	6.4
2004	126,992	26,400	20.8	48,258	6.2
2005	134,370	27,982	20.8	49,525	-

Note: 1) national budget=general account + special account for the allotment of funds to be transferred to local government regions

2) MOE&HRD budget = general account + special account

Source: MOE&HRD KRIVET(2005). Human Resource Development Indicators

III. VOCATIONAL EDUCATION

In Korea, vocational education is provided under the formal education system. Vocational education at schools is administered by the Ministry of Education and Human Resources Development. Within the Ministry, the Lifelong Learning Bureau is responsible for the administration of technical and vocational education as well as lifelong learning.[8]

A. Overview of Past Approaches

In the early 1960s, Korea was a typical labor-surplus economy with limited natural resources and a small domestic market. The government established a comprehensive economic development plan and restructured the vocational education and training system in order to supply the workforce necessary to implement it. As a result, most of the formal technical and vocational education was provided within the state education system, and was systematically planned and standardized. In the 1960s, the government rapidly expanded enrollment in vocational schools to provide technicians for labor-intensive light industries.

During the 1970s, the government undertook a fundamental structural change towards the development of heavy chemical industries. This rapid structural change further raised demand for skilled workers and technicians. The government responded by strengthening technical and vocational education at the secondary level.

In parallel with the rapid structural shift to heavy and chemical industries during the 1970s, the government re-organized the existing five-year junior technical colleges (comprising three years of secondary and two years of post-secondary programs) into two-year junior vocational colleges designed to foster technicians and engineers capable of performing specific technical tasks in the heavy and chemical industrial fields. By 1980, more

8 Under the Lifelong Learning Bureau, there are four divisions: Lifelong Education Policy Division, Junior College Policy Division, Women Education Policy Division, and School-Industry Collaboration Division.

than one in three junior college students were studying engineering or the natural sciences. The government curbed the demand for tertiary education by adding a nationwide Preliminary Examination for College Entrance to the individual entrance examinations held by universities in the 1970s. The government controlled the size of higher education by setting enrollment quotas for each field of study in both public and private universities. Demand was channeled to air and correspondence universities that had been newly launched (Young-Hyun Lee, 1995).

The 1980s were characterized by the steady liberalization of the economy. By the mid-1990s, much of the economy had been opened up to competition. During the 1980s, the increase of technology-intensive goods in exports was prioritized, and the industrial base shifted and broadened towards these sectors, including microelectronics. The government expanded opportunities for higher education to meet social demand, mainly for political reasons, and also strengthened junior college education and established open universities to provide continuing education for the employed. Thus, enrolment in junior vocational colleges increased, while enrolment in vocational senior secondary schools and the number of in-plant trainees began to decline. This resulted in a shortage of workers in production jobs, especially in SMEs.

In 1990, the government began implementing certain policies to increase the enrolment in vocational senior secondary schools with the aim to increase the enrolment ratio of general versus vocational senior secondary schools from 68:32 to 50:50 by 1995. Although the scheme did in fact contribute to increasing the enrolment in vocational senior secondary schools from 32 percent of the total senior secondary school enrolment in 1990 to 39 percent by 1995, it failed to attract a sufficient number of students to pursue vocational education rather than higher education, and thereby supply the workforce required by industry.

To strengthen the links between schools and industry, especially in the areas of technical education and training, the “Two-plus-one (2+1) Program,” modeled after the German dual system, was introduced in 1994. The program is comprised of two years of vocational education in schools, followed by one year of practical “hands-on” field training in industrial companies. However, the program was not successful mainly because Korea did not have the necessary infrastructure to support such a system.

In the 1990s, the Korean economy was facing new challenges posed by the changing economic environment, including the globalization of trade and labor markets, rapid technological development and heightened competition. Despite the expansion of higher education in the previous decade, the prevailing level of education and training at that time was still unable to meet industrial demands adequately.

In 1996, the PCER[9] proposed the Second Educational Reform Program, including vocational education reform. The main objective of this vocational education reform was the establishment of a "Lifelong Vocational Education System" in order to realize a "Lifelong Learning Society." It was envisaged that this would ultimately lead to the development of each individual according to his or her unique talents and interests as well as the nurturing of high-quality human resources demanded by the labor market.

The government has recently introduced various measures to strengthen the vocational education and training system in preparation for the necessary skilled workforce to meet changing industrial demands, while reducing the pressure on higher education. It is worth noting that the government began to make efforts to transform the traditional supply-oriented systems of education and training into more demand-driven systems.

Efforts were made to establish a new kind of vocational education that would promote the school-to-work transition. First, the legal foundation was laid for an "era of open and continuing education." In 1996, legislation on the credit bank system was enacted in order to allow part-time registration at college on a trial basis.

Second, provisions were made to build a new vocational education system. The provisions included the Vocational Education Promotion Law, the Basic Law on Certification, and the Korean Occupational Competency Development Institute Law, the purpose of which was to expedite improvements in vocational education. A financial support system was established to provide funding for the pursuit of excellence in research and development (the Korea Research Institute for Vocational Education and Training was established in October 1997).

Third, students in vocational high schools and industry workers are able to carry out further education beyond high school. These students hold priority in the selection process for colleges in related fields of study. Beginning in 1996, graduates of junior colleges could attain associate degrees.

The reform proposals by the PCER present a blueprint for Korean education in the 21st century. During 1995, the Ministry of Education set up an action plan to put the reform proposals into practice. It also laid out an investment plan for 1996 through 1998. A budget of 9.4 trillion won

9 The Presidential Commission for Education Reform (PCER), a consultative body directly under the President, was established in February 1994 and announced educational reform suggestions in 48 areas. The Commission announced major educational reform plans on May 31, 1995, with supplementary educational reform plans on February 9, 1996 and August 20, 1996.

was secured to carry out various reform projects. Work is also currently underway to enact new laws or to revise the current laws with a view to facilitating these reform efforts. Therefore, in the future it is expected that education reform will keep pace with the action plan originally set by the Ministry of Education.

With the introduction of a lifelong education system, junior college education was expanded. Between 1979 and 1997, enrolment in junior colleges increased 11 times and the programs were diversified, from 91 into 361. Based on the Educational Reform Program, a customized training system responding to industrial demand was implemented in more than ninety junior colleges, of which 59 were provided with financial support from the government in 2000. In order to strengthen junior colleges' capacity for vocational education, programs linking the curricula of the second and third years of vocational senior secondary schools with those of vocational colleges (the 2+2 Linkage Program) have been implemented in some schools. Students who have completed vocational senior secondary school courses are given priority in the selection process for entry into colleges in related fields of study.

To encourage workers to upgrade their skills and knowledge, the government revised the Polytechnic College Law in order to grant degrees to graduates of polytechnic colleges in 1997. The Korea Foundation for Polytechnic Colleges was inaugurated by KOMA (the former name of HRD Korea) with the approval of the Ministry of Education during early 1998. Beginning in February 1998, graduates of polytechnic colleges could attain Industrial Associate Degrees.

a. Recent Reforms in Vocational Education

The Korean government, recognizing the demand for workers who can adapt quickly to a rapidly changing work environment, has been working on plans for reforming the vocational education system to transform it into a system that can train learners to fulfill those demands. In May 2005, the Presidential Committee on Education Innovation (CEIN)[10] disclosed a proposal[11] for reforming the vocational education system with the objective of making it better able to respond to the emergence of the knowledge-based society.

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[10] The Presidential Committee on Education Innovation was established on July 31, 2003 with the aim of bringing innovation to the education sector and identifying tasks for vocational education policy.

[11] CEIN plans to revise related laws, such as the Act on Promoting Worker's Training, the Primary and Secondary Education Act, and the Higher Education Act as recommended in the proposal.

The vocational education system will be reformed in the following ways:

First, it will be transformed from one designed to foster a large pool of workers with general skills into one that trains specialized professionals. The new vocational system will promote diversification of both program curriculum and length.

Second, the provision of education will be decentralized. Previously, it was the central government that oversaw vocational education, but with the reform measures the mandate will be distributed among local governments, industry, and the various government organizations, all of whom will be encouraged to participate.

Third, short-term training will be expanded beyond the scope of vocational education for full-time learners so that adults, including employed workers, can benefit from re-education.

Fourth, the reformed vocational education system will promote school-industry collaboration and linkages between education and training. The new system will thus maximize human resource and information exchange and utilization.

The proposal for transforming secondary-level vocational education also includes expanding the specialized high school system, raising the core skills of students in vocational high schools, introducing an integrated high school system, and upgrading the competency of instructors.

Under this plan, several vocational high schools will be transformed into specialized high schools. This will mean an increase from 64 specialized high schools as of 2005 to 200 schools by 2010. The local governments, industries and ministries concerned will be supporting and participating in promoting the specialization of vocational schools.

Meanwhile, vocational schools that do not intend to make the transformation into specialized high schools will be encouraged to move away from a focus on technical skills training towards promoting vocational education that enhances lifetime employability. In other words, their post-reform curricula will concentrate on building core (generic) skills, such as communication and problem-solving skills. Courses dealing with skills that are difficult to teach in school may be outsourced to other vocational training providers. Such training courses will be officially recognized in the same way as are regular classes in school.

Improving the vocational education system will also require developing the capacity and flexibility of instructors. If there is an excess of instructors for a particular subject while in another subject there is a shortage of

instructors, the surplus teachers will be advised to receive training in that subject in order to make up for the teacher shortage. Furthermore, recruitment of professionals as part-time instructors will be endorsed and the remuneration for their teaching services will be raised to a competitive level. Finally, schools will be urged to adopt a system of appointing principals in which qualified candidates from both inside and outside the school are screened.

Plans for the reform of higher level vocational education include enlarging the role of colleges so as they also become local continuing education centers, and establishing a system of support for junior vocational colleges through local government initiatives.

A local government-initiated assistance system will be established to foster junior colleges. Under the system, local governments will be urged to support the provision of vocational education by junior colleges. Measures will also be taken to create industrial technology education clusters in which local businesses and junior and four-year colleges can collaborate. School-industry cooperation programs such as school-based enterprises, business incubators, technical assistance centers, and student-business venture clubs will be fostered. School-industry collaboration will be strengthened by appointing professors with a special mandate to oversee contracts and collaborative projects with businesses.

B. Vocational Education at Secondary Schools

Vocational High Schools

Vocational high schools aim to educate skilled workers, equipping them with a sound occupational awareness and professional knowledge to enable them to cope with rapid changes in the information-centered industrial society. They provide technical-vocational education programs in the specialized fields of agriculture, technology, business and commerce, marine and fisheries, and home economics. Most vocational students are participating in programs of business/commerce and technology at senior secondary schools. These vocational high schools serve as training grounds for technicians.

Students of vocational schools, in general, are mostly from socially underprivileged families and their performance in middle school tends to be relatively poor. Since 1997, there has been a marked drop in the number of students enrolling in vocational high schools relative to the total high school student population (see Table 11). This has been attributed to the poor

reputation of vocational schools and the low quality of vocational education in general. In 2004, the dropout rate for vocational high schools was 3.3%, considerably higher than that of general high schools (0.9%). In recent years, the Korean government has tried to raise the status of vocational education by diversifying programs among other measures.

Table 11. Ratio of Vocational High Schools Students

(Unit: percent)

Year	1990	1995	1997	2000	2002	2004	2005
General H. S. students	64.5	54.1	55.4	63.9	68.0	70.5	71.5
Vocational H. S. Students	35.5	45.9	44.5	36.1	32.0	29.5	28.5

Source: MOE&HRD·KEDI (1990-2005). Statistical Yearbook of Education

Table 12. Ratio of Vocational High School Students by Program

(Unit: person, percent)

Year / Track	1990	1995	2000	2003
Total	810,651 (100.0)	911,453 (100.0)	746,986 (100.0)	542,077 (100.0)
Agriculture	6.1	3.6	3.6	3.9
Technical	24.5	34.6	39.7	39.7
Commercial/Business	56.1	49.2	44.9	41.9
Marine/Fisheries	1.2	0.8	0.8	0.8
Home Economics	0.1	0.5	0.8	1.7
Arts	0.4	0.1	0.5	1.7
Liberal	11.6	11.2	9.5	10.2

Note: "Liberal" track here refers to "academic program of Comprehensive High School and foreign language programs in vocational high schools, and the figures represent the number of students in this track.

Source: MOE&HRD·KEDI (1990-2003). Statistical Yearbook of Education

In 2005, there were 31 agricultural high schools, 212 technical high schools, 212 commercial high schools, eight fishery-maritime high schools, 64 combined vocational high schools and 186 comprehensive high schools, which provide vocational as well as academic courses. In addition, there were 713 technical and vocational high schools with a total enrollment of 503,104, which is about 28.5 percent of total high school enrollment.

As for the make-up of vocational high school enrollment by curricular track, the commercial program and engineering program accounted for 41.9% and 39.7% of students, respectively, in 2003. This shows that the majority of the students in vocational high schools are in either of the two tracks. One noticeable trend is the steady decrease in the percentage of commercial program students out of the total vocational high school population since 1990, while the ratio of industrial program students has been on the rise.

The government recognizes and is addressing the need to develop vocational high schools and extend their roles in order to meet the progressive demands due to the continuing growth of advanced industrial technology. The government has also provided incentives for vocational education since it provides the major source of skilled labor for this rapid industrialization process. In addition to financial support, the principals of vocational high schools enjoy a great degree of autonomy in recruiting students; for instance, within the policy framework, they are allowed to make decisions between student achievement in middle school and screening test scores as the basis of determining eligibility.

There are various types of vocational high schools: high schools established for special purposes, that is to foster human resources capable of contributing to the nation's key industries, specialized high schools to strategically foster specific skills, e.g., shoe-making, cuisine, and animation, the 2+1 system which consists of two years of school education and one year of on-the-job training, and integrated high schools which provide both general and vocational curricula to prepare students for both higher education and the job market.

a. Curriculum

The curriculum for vocational high schools is composed of general and vocational subjects. Students are required to take 216 units over six semesters spanning three years.[12] Of the 216 units, students are required to take a minimum of 82 units of general subjects such as mathematics and science and a minimum of 82 units of vocational subjects.[13] Of the 82 units allocated to vocational subjects, from 2 to 68 units should be allocated for field training. The field training program is operated in co-operation with individual industries.

12 According to the Vocational Education and Training Promotion Act, principals of vocational high schools are given the authority to offer a maximum of 237 units, which is 10 percent higher than the required number of Units.

13 In general, the ratio of general subjects and vocational subjects offered in vocational high school is 50:50.

Table 13. Curriculum of Pusan Automobile High School by Program

Major Objective		Courses	
Major Objective		Year 1 (Core requirements)	Year 2 (Specialization courses)
Electronic Machinery	Develop skills to make automobile parts	1. Computer science basics 2. Basic drawing practicum 3. Basic machining practicum Lathing, milling, welding 4. Basic electronic engineering practicum electric engineering electronic engineering 5. Engine maintenance practicum engine maintenance chassis maintenance	1. Machine design 2. Mechanical materials 3. Lathing practicum 4. Milling practicum 5. CAD practicum 6. Numerical control practicum
Automatic Control	Develop skills to install, operate, maintain, and repair automated production facilities	1. Computer science basics 2. Basic drawing practicum 3. Basic machining practicum lathing milling welding 4. Basic electronic engineering practicum electric engineering electronic engineering 5. Engine maintenance practicum engine maintenance chassis maintenance	1. Industrial electronics 2. PLC practicum 3. Hydraulic and pneumatic control practicum 4. CAD practicum 5. Automatic control practicum
Automobile Engineering	Develop skills to inspect and repair automobiles	1. Computer science basics 2. Basic drawing practicum 3. Basic machining practicum lathing, milling welding 4. Basic electronic engineering practicum electric engineering electronic engineering 5. Engine maintenance Practicum engine maintenance chassis maintenance	1. Automobile structure 2. Engine maintenance practicum 3. Chassis maintenance practicum 4. Electrical engineering practicum 5. Sheet metal painting practicum

Source: PAHS (2005). Internal documents

At Pusan Auto High School (PAHS), students are recruited without any distinction as to their specialization, but in their second year they choose one of three majors: Electronic Machinery (automobile parts processing), Automobiles (automobile inspection and repair), and Automatic Control (maintenance and repair of plant automation facilities).[14]

Students must earn 216 credits during their three-year program. General subjects account for 48% of the curriculum while specialized subjects make up 52%, so the specialized curriculum shows a distinct focus on professional education. Students must complete core courses in their freshman year. In their second year, they choose their major and take courses specific to their specialization (theory and practicum). The third year is for the advanced specialization program, which offers students OJT and opportunities for earning qualifications. For the sake of efficiency, practice sessions are held in groups of 40, and do not require a lot of facilities and active participation from the students, and in smaller groups of 15-20 when students must all actively try out and practice the skills. Table 13 shows all the core courses and specialization courses for each major.

b. Practical Skills Training

Students in their second and third years are given opportunities to acquire skills related to their specialization by practice. The school is furnished with state-of-the-art facilities and equipment. Students are divided into groups of fifteen for each skills training session, which is adjusted to the learners' competency.

Skill training is designed to help students earn various qualifications for skills used in the automotive industry. PAHS has close ties with companies in the industry, which the school uses to its advantage to run the school-based enterprise or to provide customized training. These efforts are intended to help students learn skills that are relevant to the workplace.

To respond to the automation of processes, such as logistical automation in car assembly and automation of parts processing, PAHS has established an FMS system for Automatic Control majors. The FMS system is used to help students become familiar with equipment for automating processing and logistics, as well as understand the relationship between the different

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[14] Each year Pusan Automobile High School can recruit six classes, or 240 students. The entire school is organized into three departments and there are six classes for each grade (totaling 18). The total number of students is 720. The drop-out rate is very low, and most students do complete the program. Half of the graduates usually pursue higher education in colleges choosing automobile-related majors. The rest find employment in the automobile industry.

parts of the FMS system, such as control and command processes. Students also get hands on practice operating an FMS system.

PAHS emphasizes workplace training as a way to develop the skills and the adaptability relevant to the real work environment. Third-year students are given the opportunity in their second semester to be trained in a company in the automotive or related industry. Most students (about 80%) are assigned to automobile manufacturers or other companies related to the automotive industry situated in close vicinity to the high school. In some cases, students are sent to distant regions to receive workplace training. The training generally takes three months or more and the length of the program is converted to credits. Students are graded based primarily on the company evaluation, which accounts for 75% of the grade. The remaining 25% is based on the written report students submit about their experience of workplace training.

To strengthen the relevance of education to the actual work environment, PAHS collaborates with companies through many channels. PAHS has signed agreements with regional automotive and related industries to give students a chance to be trained in the workplace and to learn about the latest technology and skills applicable in a real setting. PAHS also has permission from Hyundai and Kia Motors to use their offline satellite broadcasting programs in the education of students. The satellite programs were originally intended to expose employees to current automotive technologies, and they are also transmitted to PAHS for students to practice broadcast auto mechanics and automotive technologies in real time.

Diversification of Vocational Education Programs at High Schools

With the reform program vocational education at high schools has been designed to lead not only to the labor market but also to further education at institutions of higher education. In this context, the establishment of specialized high schools and integrated high schools was proposed as a way to diversity vocational education programs.

a. The Specialized High School

This scheme was introduced to curb the prevailing trend for high schools to focus mostly on preparing students for higher education, regardless of the individual wishes and plans of students for their lives after high school. These specialized high schools offer job preparation courses to students who are not ready to pursue university education at this stage. Specialized high schools were introduced in 1998. As of 2004, there were 64 specialized high schools in animation, cooking, tourism, design and information and

communications technology. This scheme has been evaluated as being successful, and the government plans to expand the number of specialized high schools to 200 by the year 2010 (CEIN, 2005).

b. The Integrated High School

This new program aims to integrate vocational and general education in high schools. Schools that wish to do so can integrate and operate a combined vocational and general high school curricula to enable students to choose from a wide selection of courses irrespective of their field of study. This is to enable students to satisfy prerequisites for further education and at the same time acquire work-related knowledge and skills in high school to enter the workforce upon graduation.

Schools that integrate and operate both tracks of curricula minimize the number of compulsory courses students must take and increase the number of elective courses. The pilot programs have been implemented in ten schools across the country. The government plans to promote this scheme more actively (CEIN, 2005).

c. Two plus Two (2+2) Linkage Program

Some schools have combined the second and third years of vocational senior secondary schools with two year programs of vocational colleges – hence the name "two plus two (2+2)" – in order to expand higher education opportunities for vocational high school students and to strengthen the capacity of junior colleges to provide quality vocational education.[15] Students who have completed vocational high school courses are given priority in the selection process or granted permission to enter colleges in related fields of study. As of 2004, 340 vocational high schools and 152 junior colleges participated in this linkage program.

The policies for diversifying vocational education, especially the integrated high school scheme and the 2+2 linkage program, have helped raise the number of vocational high school graduates pursuing college education. Nevertheless, inadequate curriculum, lack of investment in vocational education and problems related to the quality of instructors continue to affect vocational education, leading to the generally accepted view that it continues to fall short of satisfying the needs of industry.

15 A pilot program to link the curricula of vocational high schools and the junior colleges was conducted between 1997 and 1998. Sixteen vocational high schools and four junior colleges participated in the pilot program.

d. Two plus One (2+1) Program

Cooperation and collaboration between technical-vocational schools and industry has been rather weak and ineffective to date. While it is true that, upon request by individual high schools and junior colleges, industries on a voluntary basis have been providing on-the-job work experience for technical-vocational high school students and junior college students, this has often been unorganized and unstructured, with little benefit for either the company or the student.

To satisfy the needs of a rapidly changing society and to produce highly skilled industrial workers, the Korean government is restructuring the technical-vocational education and training systems in order to develop partnerships between TVET and industries especially in the areas of technical educational and training. The main purpose of the restructuring is to improve the efficiency and effectiveness of TVET by sharing the resources available in schools and industry.

A technical high school education system, called the dual system or the "Two-plus-one Program," was introduced in 1994. The program is comprised of two years of vocational education in schools, followed by one year of practical "hands-on" field training in industrial based companies. In 1998 the program was operated in 40 designated model schools and 9,110 students were taking part in on-the job training programs at 1,928 industrial companies. As of 1999, the program was operated in 37 technical high schools with the participation of 17,283 students. The content of the curriculum is as follows:

Table 14. Technical High Schools with "Two plus One Program"

Classification	Technical High School	Technical high school with 2+1 program
Management Approach	School Education for 3 Years (On-Site Training as the Form of Internship of 1 to 6 Months)	School Education for Two Years On-Site Training for One Year
Education Contents	Basis of Theory and Concept	Basis of Duty and Function

Vocational education in academic high school

Vocational education and home economics programs are required subjects within the national curriculum. The program includes courses in technology, home economics, agriculture, industry, commerce, fishery, housekeeping, information, industry, and careers and vocation.

Vocational education programs in academic high schools were established in 1974. Third year students in the vocational track take a technical-vocational program either at their own school or at other institutions such as vocational schools, private technical institutes, or in attached classes of technical high schools and vocational training centers.

In 2005, students enrolled in the vocational track in academic high schools numbered 4,488, which was equivalent to 0.6 percent of the total academic high school population. The number of students selecting a vocational track has been in decline since 1993. The number of students enrolled per year in the vocational education program is shown in Table 15.

Table 15. The Number of Students Taking Vocational Program

(Unit: person, percent)

	Total number of academic H.S. students (A)	Students taking vocational program (B)	Students taking vocational program (girls)	Ratio B/A
1991	948,725	31,259	18,097	3.3
1992	896,887	35,924	19,204	4.0
1993	826,410	34,815	15,518	4.2
1994	798,439	28,639	11,671	3.6
1995	798,079	20,616	8,370	2.6
1996	837,509	18,521	7,997	2.2
1997	894,483	13,905	4,791	1.6
1998	926,908	13,378	4,097	1.4
1999	897,212	11,807	4,583	1.3
2000	884,043	11,038	3,428	1.2
2001	818,614	9,185	3,226	1.1
2002	783,016	8,893	2,698	1.1
2003	777,096	7,738	2,560	1.0
2004	774,648	4,245	1,351	0.5
2005	802,906	4,488	1,585	0.6

Source: MOE&HRD·KEDI (1991-2005). Statistical Yearbook of Education

For academic high school students, vocational schools provide courses in electronics, electrical engineering, electric installation, commercial design, automotive repair, information processing, industrial arts and fine arts.

The vocational education programs attached to technical high schools provide courses in machinery, lathe operation, welding, electrical engineering, textiles, automotive repair, and chemical engineering. Public vocational training centers provide courses in die casting, lathe operation, mechanical assembling, milling, canning, metal work, electric welding and electric plumbing. Private technical institutes provide courses in automobile repair, aircraft repair, heat control, information processing, cooking, fine arts, clothing, confectionery, baking and nursing.

C. Vocational Education at Post-secondary Schools

As the overall educational level of Koreans rose dramatically, the task of developing a skilled workforce, which had previously belonged to the domain of high school level education, was transferred to junior colleges and other higher education institutions.

Junior Colleges

Junior colleges, offering two- or three-year programs,[16] are the direct outgrowth of the increasing demand for technicians stemming from rapid industrialization. Their specialized courses are grouped into the disciplines of technology, agriculture, nursing, fishery, health, commerce and business, home economics, arts and athletics. For the effective achievement of their educational goals, junior colleges develop and provide practical curricula through on-site training via school-industry collaboration programs.

High school graduates or equivalent may apply to junior colleges. Admission is determined on the basis of academic achievement, the SATs, and the main entrance examination score. Approximately 50 percent of the freshmen quota is reserved for graduates of vocational high schools in the same fields, technicians with qualifications accredited by the National Certification System, and workers meeting specified industrial requirements.

Since 1990, the number of junior colleges has steadily increased, so that as of April 2004, there were 158 junior colleges in Korea. Among them only seven (4.4%) were state institutions and eight (5.1%) were non-state public institutions. The remaining 143 were private institutions accounting for as much as 90.5% of all junior colleges. However, the number has remained at 158 since 2000, when the government adopted a policy of limiting the establishment of new schools of this kind. As of April 2004, the engineering track offers more courses than any other at the junior college level with 1,879 courses open to students. Next in line is the social sciences track with 1,373 courses, followed by 1,203 courses in arts and sports, 522 in natural sciences, 358 in medical services, including nursing, physiotherapy & health, 322 courses in the liberal arts track and 190 courses in the educational services track.

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16 Most programs span two years, while there are three-year programs primarily in the fields of nursing, health and physiotherapy. First-year students have to take foundation courses as preparation for the more intensive studies in their chosen majors in the second and third years. Students must earn a minimum of 68 credits.

Enrollment in junior colleges rose sharply until 2000 but has since declined due to the general decrease in the population of young people in their late teens, when students typically finish their secondary education. As a result, applications to junior colleges have dropped dramatically.

In 2005, there were 853,089 students in junior college programs, and of them 36.2% were engineering majors. Social science majors were the next largest group at 21.6%, followed by 16.9% of arts and sports majors.

Table 16. Distribution of Junior College Students by Program

(Unit: person, percent)

Program \ Year	1990	1995	2000	2005
Total	323,825 (100.0)	569,820 (100.0)	913,273 (100.0)	853,089 (100.0)
Liberal arts	3.2	4.4	3.8	3.9
Social sciences	18.0	20.8	20.1	21.6
Education	4.3	3.0	2.7	3.8
Engineering	41.5	44.6	43.5	36.2
Natural Sciences	12.5	7.1	9.3	7.3
Medical	11.6	9.9	8.0	10.4
Arts/Sports	8.9	10.3	12.5	16.9

Source: MOE&HRD-KEDI (1990-2005). Statistical Yearbook of Education

The curriculum is divided into foundation courses and specialist courses. Foundation courses must account for 15% to 25% of the course credit total while the remaining 75% to 85% of the credit total has to be from specialist courses. In principle, 50% of the class hours in a specialist course should be composed of experimentation and practice, but each department can exercise discretion in determining the actual number of hours. Also, instructor training courses can be established in addition to the existing curriculum.

The junior college education system is flexible enough to allow students to choose between night classes and day classes as best fits their schedule. Most junior colleges offer training by commission in the evening in order to make educational opportunities more accessible to workers. These institutions also have advanced specialist courses for people who have an associate degree or a similar level of educational background with more than one year of working experience, providing them with re-training or

helping them to upgrade their level of skills and expertise. In addition to the standard curriculum, students may take part in special courses.

Students who have successfully completed the junior college program are awarded an associate degree. Taking advanced specialist courses or special courses can also lead to credits.

Polytechnic Universities

Polytechnic universities provide employed youths and adults with an alternative approach to higher education. Since the establishment of Kyonggi Technical Open College (it was later renamed Seoul University of Technology) in 1982, 19 polytechnic universities with an enrollment of about 158,444 had been established by 2004.

The requirements for admission into a polytechnic university are the same as those for regular universities. However, priority in selection is given to persons with experience in industrial organizations, holders of national technical qualifications, and graduates from vocational high schools and vocational courses in academic high schools, following the particular school's regulations. There are no academic years in this curriculum. Over 50 percent of the admission quota is devoted to giving students the opportunity both to improve their business skills and to be educated continuously by being offered classes at night.

Experimental and practical exercises are the center of the curriculum of a polytechnic university, with the aim to accentuate the practical aspects of education. To heighten adaptability to industrial sites, a polytechnic university employs staff with teacher's licenses at industrial sites as supplementary teachers.

Corporate Universities

The government has introduced the new concept of corporate universities, operating under a different type of university system, in order to raise the overall educational level of workers. The main purpose is to help them undertake continuing education without leaving their place of work. A corporate university is a lifelong learning institute, a type of university, as specified in Article 21 of the Lifelong Education Law. Samsung Electronics Technical University (which runs a four-year program, with a quota of 40 persons) was the first of its kind, and was established by Samsung Electronics in 2001. Corporate universities also include technical universities established by enterprises.

Under the Higher Education Act, a technical university is a higher educational institute attached to a commercial enterprise. Jung-suk University (providing two-year and four-year programs) was established by The Korean Airline Co. in August 1999. The university, sponsored by Hanjin Corporation, was given the first license, and operated officially as the first “Institute of Technology attached to an Enterprise.” Currently, many other institutions are in the process of applying for licenses as corporate or technical universities; they will have to meet strict evaluation criteria in order for their applications to be approved. Also, although graduates of corporate and technical universities and their respective graduate schools, as acknowledged by the Ministry of Science and Technology, do not receive degrees, they do qualify for credit exemptions when applying to take national technical qualification examinations. Furthermore, companies that establish corporate and technical universities are eligible for benefits like tax remission.

Through the Reform Plan for the Vocational Education System, the Korean government plans to bolster current policies on corporate and technical universities, and to use some of the employment insurance fund to provide financial support towards part of the operating costs of corporate and technical universities.

D. Government Grant Programs to Promote School-industry Collaboration

The government has taken measures to provide grants to promote closer relationships between schools and industry. At the higher education level, various programs have been introduced by several ministries.

Current initiatives to promote school-industry collaboration at the higher education level are part of the broader strategies for achieving balanced regional development. These initiatives aim to establish regional colleges/ universities as focal points for innovation in the regional economies.

Despite government support policies, school-industry collaboration at each level of education has borne limited results. Industry generally tends to be disinterested in any agenda that is not related to immediate business benefits, which effectively limits the extent of their willingness to cooperate with schools. Participation of industries in school-industry initiatives therefore tends to be mainly of a passive and formal nature.

Grand School-Industry Collaboration Project

In 2004, the Grand School-Industry Collaboration Project (GSICP) was launched by the government to promote joint efforts between educational institutions and businesses towards the development of human resources in a way that can meet market demands more effectively.

The GSICP was begun as part of a scheme co-launched by the MOE&HRD and the MOCIE under the auspices of the Presidential Committee on Balanced National Development to support universities with a clear focus on school-industry cooperation. The scheme, in turn, was kicked off in April 2004 in accordance with the New Vision and Strategies for School-Industry Collaboration (September 2003), announced by the present so-called Participatory Government. The government recognized the fact that while the scale of the national budget and projects for promoting HRD have expanded, it was uncertain whether greater investment would ensure more substantial deliverables. This concern was based on the lack of coordination among ministries involved, which could result in redundancy of projects and lower efficiency. Moreover, there was concern that HRD policies were overly focused on ensuring the supply of a numerically sufficient workforce, while failing to meet the actual demands of businesses for workers with the necessary skills.

In its second year in 2005, the Project was scaled up to encompass five sub-projects, aiming to support institutions that are recognized as belonging to one of the following categories:

- Universities with a focus on school-industry collaboration,
- Vocational high schools with a record of excellence in school-industry collaboration,
- Junior colleges with a focus on school-industry collaboration and universities specializing in growth-engine industries,
- Best practice labs, and
- Centers of innovation in education & training.

In addition to the MOE&HRD and the Ministry of Commerce, Industry and Energy (MOCIE), the Ministry of Labor (MOL) joined in this endeavor. In 2006, the third year, the government launched still another sub-project, which aims to support special courses for training workers targeted for high value-added industries. From the government side, the Ministry of Information and Communication (MIC) is participating in this sub-project.

As of 2006, the GSICP was being run by four Ministries on a combined budget of 94.3 billion won. It has grown in scope into a strategic HRD project

encompassing six sub-projects, targeting employees and professionals of varying levels of expertise, from skilled workers in shops to mid-level engineers to core research scientists.

Table 17. GSICP – Target Institutions and Budget

(Unit: KRW 100 million)

Target institution	Sub-project name	Budget		
		2004	2005	2006
Vocational High Schools	Support for best practice high schools in school-industry collaboration	-	40	70
Junior Colleges (Including Korea Polytechnic Colleges)	Support for best practice junior colleges in school-industry collaboration / Support for colleges specializing in growth engine industries	-	283	283
Colleges	Support for colleges with focus on school-industry collaboration	400	440	440
Colleges (targeting students in 3rd or 4th year)	Support for special programs for high-value added industries	-	-	70
Graduate schools	Support for best practice labs	-	50	60
Sector Council	Support for Centers of Innovation in Education & Training	-	49	20
	TOTAL	400	862	943

Source: MOE&HRD (2006). Internal Document

The government is implementing the GSICP in close connection with regional innovation projects under the balanced development initiative. Under the GSICP there are several specific sub-projects.

a. Support for Vocational High Schools of Excellence in School-Industry Collaboration

Support for "Vocational High Schools of Excellence in School-Industry Collaborative Partnerships" is a project aimed at training young people who have the potential to become experts in the science and engineering sectors. Towards this objective, the government screens vocational high schools to identify and support schools that have worked closely with industries to train their students. Since 2005, the authorities have selected vocational schools based on two criteria: that the school has a clear set of strategies to specialize in industries that will potentially be growth drivers of the future, and that it has successfully recruited and has been educating

talented students. Selected schools will benefit from subsidies for various joint programs with business enterprises, such as training by outside training institutions, workplace-based learning, club activities focusing on major fields of training, re-training of instructors by industries, etc. In 2005, twenty schools were chosen for total subsidies of 4 billion won, with each school slated to receive 200 million won over a three-year period. The government plans to expand the project to designate 15 more high schools and increase the budget to 7 billion won. These efforts are in keeping with the government's ultimate aim to disseminate the work-based learning model by promoting joint initiatives by schools and industries.

b. Support for Junior Colleges of Excellence in School-Industry Collaboration / Support for Colleges Specializing in Growth Engine Industries

The two projects dubbed "Junior Colleges of Excellence in School-Industry Collaboration" and "Support for Colleges Specializing in Growth Engine Industries" both aim at fostering junior colleges (including Korea Polytechnic Colleges) and developing the skills of the students enrolled in these institutions to become skilled workers. The former is sponsored by the MOE&HRD while the latter is funded by the MOL. In 2005, ten junior colleges were selected by the MOE&HRD and were either allocated 8 billion won in total or 700-900 million won (to be disbursed over a course of four years) per institution. In the same year, the MOL, at its own initiative, chose 20 junior colleges (including Korea Polytechnic Colleges) and committed as much as 20.3 billion won, or 1 billion won per school (to be disbursed over three years). In the following year, the MOL has continued to support the institutions that were selected in the previous year, but varied their subsidies based on performance evaluation.

c. Support for Colleges of Excellence in School-Industry Collaboration

Support for Colleges of Excellence in School-Industry Collaboration is the first project to be launched as part of the Grand School-Industry Collaboration Project (GSICP). The Support for Colleges of Excellence scheme targets institutions that have formed clusters of cooperation with local businesses. Since its inception in 2004, 13 colleges of excellence have been designated in eight regions (eight four-year colleges and five industrial colleges). The four-year colleges were each awarded 2.4-5.5 billion won in grants, and industrial colleges received 1.5-2.6 billion won

(to be disbursed over five years), which amounts to 40 billion won in total. Institutions selected for the project were recognized for their efforts in re-orientating their educational systems towards developing technologies and a future workforce through joint endeavors with industries. The scheme has continued to support the same institutions in the two following years, but differentiating them by their achievements and provided varying amounts of subsidy. The budget for this project was expanded to 44 billion won starting in 2005.

d. Support for Special Programs for High-Value Added Industries

Launched in 2006, Support for Special Programs for High-Value Added Industries is designed to strengthen training through practice for Engineering and Science majors in their last two years of college. The ultimate aim is to train these young people to become engineers equipped with the skills and knowledge required in the field so that the discrepancy between the common skills profile of students in higher institutions and the kind of skills needed by industry is reduced.

The plan, spanning three years, seeks to concentrate subsidies in the key industries with urgent demand for engineering workers, such as display, next generation semiconductors, and next generation mobile communications. The project set a target of developing 5,000 skilled workers qualified to meet the demands of industry. In order to achieve this goal, the subsidized institutions offer intensive programs during summer and winter breaks to help their students acquire skills that are currently in demand in the field. The schools have the authority to decide whether to recognize credits for completing these special programs. The total subsidies disbursed in 2006 amounted to 7 billion won.

e. Support for Labs of Excellence

The government initiated the Support for Labs of Excellence Project in order to promote the development of skilled technicians with a high-level of expertise in R&D in next generation industries. In 2005, labs run by professors of engineering and science disciplines in four-year colleges were chosen (to qualify, professors need to be associate professors or higher). Labs can apply individually or together as a consortium, and 52 labs in the top 10 next generation growth engine industries were awarded around 100 million won each (to be disbursed over three years), totaling 5 billion won for the year. In 2006, the budget was increased to 6 billion won.

f. Support for Centers of Excellence in Innovation in Education & Training

A Sector Council established for each industrial sector leads this initiative to support the design of education and the training of employee resources with a focus on customizing the contents and delivery to the needs of industry. Nine sector councils were designated in 2005 under this initiative, each to receive funding for three years. In 2006, however, the total value of subsidies was reduced to 2 billion won.

School-based Enterprise Program

In 2004, the government introduced the School-based Enterprise Program, for the purpose of fostering business and industrial enterprises within schools. In order to achieve this objective, the program aims to link school curriculum to the actual activities of enterprises and thus to deliver field-oriented education. An actual Enterprise Department is created within schools in order to provide adequate OJT to students, support the research efforts by the faculty, and facilitate the transfer of technology to industries. School-based Enterprises manufacture, process, repair, sell and provide services in conjunction with a particular department or educational program.

The government partially funds School-based Enterprises in their initial start-up phases to help spread similar efforts and to stabilize this type of initiative. A total of 40 schools (18 colleges, 17 junior colleges, and five vocational high schools) were designated for the first batch of School-based Enterprises (2004-2005), with the government committing 20 billion won over the course of two years.[17]

The government package for School Enterprises covers labor costs, OJT, equipment purchase, facilities maintenance and operational costs. The school reserves the right to budget and spend the government subsidy as it sees fit.

The government has decided to expand the School-based Enterprise support to 50 schools in 2006. This means that forty institutions will be additionally selected and supported, in addition to the top ten performing institutions chosen from the first batch from 2004-5 based on performance. The total budget for School-based Enterprise support in 2006 is 12.4 billion won.

[17] Roughly 300 million won for 4-year colleges, 250 million won for junior colleges, and 150 won million for vocational high schools, totaling up to 10 billion won each year.

E. Practices of School-industry Collaboration

Sudo Technical High school (Secondary, Electrical)

Students entering Sudo-Electronics Technical High take theory and basic practice courses for the first two years, and spend the last (third) year at the job site for practical training in order to learn the actual skills that will be needed on the job. This is a typical course of study for students at Technical High Schools that have been selected as 2+1 model schools. When the schools select the places for practical training for the students, they choose only those industries with separate training facilities. The schools enter into an agreement to provide reciprocal support with those industries they select. This serves as a basis for cooperation between the school and the selected industries. Practical training in the industries consists of three to six months of Off-the-Job training and three to nine months of On-the-Job training.

To promote more efficient school-industry cooperation, the school runs a so-called “2+1 Program” Operation Committee, which consists of the principal, the vice principal, the head of the career counseling and education department, the head of each department at the school, plus the entire staff in the career counseling and education department. The committee selects industries to maintain mutual cooperation with and also plans the detailed schedule of practical training for the students. And most importantly, the committee selects the industries in which the students will receive practical training and supervises the process by occasionally visiting the students receiving practical training on site.

Cooperation with industries in the process of curriculum development is conducted as follows. The teachers in the department of electronics perform job analyses on specific jobs in related industries in order to incorporate the results of the analyses into the training curriculum so that the students can be taught the appropriate practical skills. The teachers also make an effort to ensure that the basic theory and practice at the school during the first two years are integrated into the practical training in the third year, which is aimed at making students more adaptable to the demands of the work environment. The teachers at the school and the training supervisors in the industries involved gather together periodically to discuss how to improve the delivery of the practical training in order to make the overall training course more effective. During the third year of practical training, teachers visit the training sites approximately once a month to supervise the students and give them advice. A student’s performance during practical training is evaluated, and the result counts toward the overall performance record of the student.

Unfortunately, there are numerous problems associated with school-industry training partnerships in Korea. First, it's hard to find industries with which to form a relationship of mutual support, even among those industries which initially showed interest in doing so. Even among the industries that showed interest in offering practical training, most industries do not have educational training facilities within the industry, which makes it hard to provide systematic training to the students. Another problem involves students who are not willing to participate in practical training and parents who do not want to send their children to industrial sites. In many such cases, students want to continue their studies by entering institutions of higher education. To do so, it is more beneficial for them to prepare for university entrance exams rather than spending their last year of high school in training facilities.

Yonam Junior College (Post-secondary; IT)

Yonam Junior College was founded by a major corporation in the field of IT (Information & Telecommunications) in Korea, LG. Yonam Junior College, which is also known as Yonam Technical Junior College to distinguish it from Yonam Animal Husbandry Junior College, was established by LG Yonam Institute with the aim to develop a skilled technological workforce. With active support from the LG Group, the school is a good example of school-industry collaboration among junior colleges.

The school is composed of three main departments: the department of computers & electronics, the department of mechanical engineering, and the department of industrial and information design. Each department is further divided into several programs according to the particular major program offered by that department. The department of electronics and engineering is divided into six major programs, the department of mechanical engineering into six major programs, and the department of industrial and information design into two programs.

To develop and evaluate curriculums for each detailed major program, the school utilizes an Advisory Committee for School-Industry Collaboration, which is set up within the school. To make the curricula meet the needs and standards of related industries, professors at the school visit the industries during the period of practical training and meet the training supervisors to discuss the programs. Also, they collect information and obtain supporting materials such as job analysis results from the training providers at the industry sites.

Industries and companies cooperate with the school in various forms. For instance, individual companies often provide the heavy and expensive

machinery and equipment needed for a detailed major program. For example, during 2000, LG provided equipment and a large amount of software, worth a total of 1.59 billion won, which was used to run classes for training programs in the department of computers and electronics and in the department of mechanical engineering.

In the exchange of teaching personnel, schools often utilize industry experts as teachers to train the students. Professors at the college have the opportunity to participate in on-site learning to refresh their knowledge and also to learn about contemporary skills used at the workplace. Mostly, the school provides the funding for this type of industrial learning for the professors.

The school also runs courses for LG trainees according to the request of the LG group. At the LG Electronics Changwon Factory, the school has the Changwon Factory campus run by Yonam Junior College, which runs a course for mechanical design and engineering. At the Jin-Ju Business Nurturing Center, the school also runs courses for business entrepreneurs.

The process of linking students with the industries in which the students will take part in practical training is as follows. The Center for School-Industry Cooperation at the college takes charge of this process. The center first screens the companies which have already offered practical training to the students. Then, it sends out a letter of request for cooperation to those screened companies, which include the branches of the LG Group, SMEs located around Jin-Ju and government offices. Along with the letter of request for cooperation, it also sends out materials introducing the detailed major programs offered at the school, with a view to creating future employment opportunities for its graduates by making companies aware of the skills being developed at the school. After that the center collects the responses from the companies and sends them to each department and each program. Then, each department posts the responses from the companies among the students so that the students can apply to the company at which they want to have practical training. The department then matches the students with the companies providing training based on the marks, character, interests, and the residential areas of the students. Then, the department informs the Center for School-Industry Cooperation of the placement of students for practical training.

Practical training is a requirement for students at technical junior colleges, and it counts towards total coursework. However, how many units the practical training takes up varies from program to program. The school prepares the students for practical training through hours designated for career counseling. In addition, it invites company representatives from the human resource department to give the students safety instructions.

The Center for School-Industry Cooperation offers an orientation program one week before the students start practical training as a final check-up procedure.

Practical training takes place usually during the summer vacation, between the end of June and the middle of August, for three to four weeks depending on individual company situation. After the students complete practical training, they sign up for the practical training course in the fourth quarter of the second year and get a credit for the course. This course is a requirement for graduation and being awarded the degree.

Since practical training is a requirement in each program at the college, the completion rate of practical training is almost 100%. Recently, there is evidence of a strong correlation between practical training and employment, which encourages the participation of the students in practical training even further. Companies also tend to believe that recruiting capable students through the process of practical training is a good way to secure skilled workers.

Customized training at Ajou Motor College

Ajou Motor College (AMC) was established by the Daewoo Group, and as such it has focused on establishing a training system that effectively reflects the needs of industry. In 1995, it created a customized training model, based on the recruitment of students by educational track, i.e., the Automobile Engineering track and the Automotive Culture & Leisure track (AMC, 2005).

AMC's educational model was chosen by the MOE&HRD in 1996 as a pilot college program. In the following year, the MOE&HRD sought to encourage dissemination of the model nationwide by subsidizing customized training initiatives. Commencing in 2004, AMC signed an MOU on customized training with 49 companies including Daewoo Motor Sales, offering 19 courses to 642 learners.

The distinct feature of AMC's customized training system is the made-to-order approach it adopts. The customized training system with a focus on workplace tasks was first conceived to strengthen the competitiveness of SMEs. The businesses and the college have entered into mutual agreements on customized training to strengthen competitiveness, especially of SMEs. Under the agreement: (1) AMC creates courses that SMEs need, such as those that are designed with a focus on workplace skills, and (2) the companies and the college jointly deliver training for the jobs that are needed in the real working environment.

A special training compound, named the School-Industry Technology and Education Compound was established to create an effective system

for school-industry collaboration. Businesses involved in the automotive industry in one way or another and students who will some day become employed in the industry are working together in the Compound, where education, development and mass production are possible using the latest machines and devices.

Through these efforts, the AMC has: (1) provided effective customized training, (2) provided workplace-centered education, (3) trained students to be able to start right away without initial OJT, (4) helped to alleviate the problems of high unemployment and skills shortages affecting the labor market, and (5) strengthened the global competitiveness of individual companies and industries.

In 1999, AMC established a collaborative training and research center to promote school-industry cooperation. It plays a major role as a center of education and research on automotive technology by securing high-priced facilities and equipment, making them accessible to other education institutions and industries, and promoting collaborative training and research among those organizations. For practice and education relevant to the automotive sector, AMC has developed a modularized curriculum. AMC's efforts have prevented redundant investment in expensive equipment, and promoted the sharing of human resources in managing programs. In program development, AMC has contributed to the collaboration and standardization of curriculum.

Academia-Industry Collaboration at Universities

Higher education has expanded quantitatively during the last 20 years, and participation has grown dramatically. Since the 1990s, there have been calls for reforming higher education in response to changes in the socio-economic environment, and for fostering universities that are internationally competitive. The Ministry of Education began in 2000 to approach higher education policies from an HRD perspective. This shift in approach was exemplified by the renaming of the Ministry of Education to the Ministry of Education and Human Resources Development (MOE&HRD). This name change was accompanied by real changes in the education sector. Greater emphasis was given to the pragmatic aspect of higher education. The demand for human resources in strategic sectors was reflected in policies. Moreover, school-industry collaboration was actively pursued as an education strategy.

The current administration, which was inaugurated in 2002, has emphasized balanced regional development. This agenda has been integrated in the reform of higher education and has led to stronger efforts to foster colleges and universities in regions outside the capital city. The government

is engaged in efforts to improve the higher education environment, while pursuing higher education reform with a long-term outlook.

a. Case of the Korea University and LG Electronics

Korea University and LG Electronics have set up a joint M.A. program customized to the needs of LG Electronics. The company interviews and screens applicants recommended by Korea University and chooses from them those to be admitted to the program. Successful candidates are subsidized by the company for tuition and allowances, and are given a chance to work there subsequent to earning their degree. LG Electronics can choose professors of its preference to teach the courses, and its own executives can be contracted as invited lecturers to teach courses with immediate relevancy to actual work.

b. Case of Samsung Electronics

A typical Samsung Master's program consists of one year of coursework at a local graduate school and one year of actually working in the field and delivering on assignments. Similarly, the Ph.D. program is made up of two years of coursework and another two years of field experience. The coursework and field assignments are jointly supervised by the professor at the graduate school and the researchers at Samsung with doctorate degrees. Samsung also runs the Membership Program to identify and foster the development of talented undergraduates. Participants in the program are given assignments (The assignment may be specified by Samsung or be proposed by the student) and assistance to help in their development (e.g. PC and internet connections, development funding, devices for experimentation and practice, opportunity to attend lectures by experts from Samsung or elsewhere, etc.). At the end of the Membership Program, participants are given the opportunity to work for Samsung.

IV. VOCATIONAL TRAINING

Vocational training, which is provided as non-formal training in Korea, is administered by the Ministry of Labor. Headed by the Minister and Vice Minister, the Ministry has two offices – Policy & Public Relations Office and the Employment Policy Office. Under the Employment Policy Office, there are four departments – Employment Policy, Labor Insurance, Skills Development and The Equal Employment. In addition, there are four bureaus – Labor Relations Bureau, Labor Standards Bureau, Industrial Safety & Health Bureau, and International Cooperation Bureau. In charge of vocational training in the Ministry of Labor is the Skills Development Department, under which there are two teams: Skills Development Policy Team and Skills Development Support Team (www.molab.go.kr, September 2006).

HRD Services of Korea is a public corporation responsible for vocational training. Its main functions are (1) vocational training, employment guidance, and follow-up services, (2) development of vocational training materials, (3) national qualification testing and registration, (4) skill encouragement and competitions, (5) employment promotion, and (6) the promotion of private vocational training.

A. Historical Overview of Vocational Training

Early Years (1967–1976)

The vocational training system was formally established in Korea with the legislation of the Vocational Training Act in 1967. Even before the legislation, the Korean government fostered the development of skilled workers through the provision of vocational education in secondary institutions, apprenticeships and vocational training in public institutions. These efforts, however, fell short of supplying the skilled labor required for industrialization. Moreover, the introduction of the Five-year Economic Development Plan in 1962 led to a dramatic increase in demand for skilled workers, which could not be met by the existing vocational education and apprenticeship programs. Technical high schools alone could not fulfill the needs

for skilled workers. Meanwhile, the apprenticeship system, which is defined in the Labor Standards Law as a program run by employers to train skilled labor needed in the workplace, was not effective as it was wholly dependent on the commitment of the employer. While there was a shortage of skilled workers, unskilled labor was in abundance, made up for example of graduates of general high schools without plans to pursue higher education. Consequently, the government legislated the Vocational Training Act in order to systematically organize the various institutions and policies, which had hitherto been administered under different legislation—e.g. the Ordinance on Promoting Skilled Craftsmanship and the Industries and Education Promotion Act. The government has also put in place the institutional mechanisms to encourage industries to take the initiative in training the resources they need. With these changes, vocational training became divided into those that were publicly provided and those privately provided by the employer.

After the enactment of the Vocational Training Act, the government sought assistance from industrialized nations and international organizations to ensure that the vocational training system would take firm root. With support from Germany, the U.S., Japan and Belgium, a number of vocational training institutions were founded, including the Handok Pusan Vocational Training Center, Jungsu Vocational Training Center, Daejeon Vocational Training Center and Hanbaek Vocational Training Center. Other public training agencies were established across the country with loans from ADB and IBRD. The Korean government established the Joongang (Central) Vocational Training Institution to serve as the focal point of public administration of vocational training.

At the private level, companies were encouraged to provide vocational training within their organizations in order to achieve greater efficiency in developing human resources. The Vocational Training Act introduced a system under which in-company training, which met the criteria set in accordance with the decrees by the Ministry of Health and Welfare, could be authorized by the head of the Regional Labor Office. Institutions that received authorization were given training materials and information, support for vocational instructors and technical assistance among other benefits and assistance. Occupations for which labor was in particularly short supply were given priority in terms of both authorization and support.

The Vocational Training Act was amended in 1973 to allow entities other than public organizations or employers to deliver training. This amendment, permitting non-profit organizations to provide vocational training, was in preparation for the potentially diversified skill needs that would be driven by the rapid industrialization program in the years ahead.

Compulsory Vocational Training (1977–1997)

The Basic Law for Vocational Training was legislated in 1976 and became effective later that year. The law defined the framework for vocational training in Korea with a compulsory vocational training system at its center. In the early 1970s, the Korean economy achieved fast growth, which was in large part fostered by policies to support the development of the heavy and chemical industries. No less important was the construction boom in the Middle East, which helped boost the Korean construction industry. Meanwhile, government initiatives to improve the housing and general living environment in farming and fishing villages also triggered a sharp growth in the domestic construction business. Unfortunately, during these years, government subsidies for in-company training were reduced, causing firms to cut the size of their training programs, which eventually led to a significant gap between labor supply and demand. The flourishing heavy and chemical industries and the construction boom further aggravated the labor shortage. Consequently, companies began to compete fiercely for skilled workers, which in turn pushed up labor costs.

The government realized that expanding public training institutions would not adequately resolve the labor shortage problem, and decided to make worker training a responsibility of the employer. In December 1974, the Special Act on Vocational Training was passed, obligating companies with 200 employees or more to provide ongoing training for at least 15% of their staff at any given time. Failure to meet this obligation would lead to fines. In the end, the Special Act contributed to fostering in-company training.

While the Special Act promoted in-house training in companies, it also caused resentment among employers who were fined and branded with a police record for not complying with the regulation. Other issues also arose during the 10 years since the Vocational Training Act had come into force, including the need to improve training facility management. To address such problems, a Basic Law for Vocational Training was legislated in 1976, combining the Vocational Training Act and the Special Law for Vocational Training. The new law mandated companies hiring 300 or more employees to provide ongoing training at any given time for a certain percentage of their workers; the mandatory percentage target was announced each year by the government. Employers who could not meet this requirement had to pay a training levy, which was collected and accrued in a public fund to support various projects aimed at promoting vocational training.

The Basic Law for Vocational Training categorized vocational training by the provider into public vocational training, in-plant training, and

authorized training in order to improve training facility management. It also distinguished between the training of instructors from that of workers, which was sub-divided into initial training, skills upgrade training, retraining and job-transfer training. The legislation was designed to allow flexibility in training management by setting specific standards, such as length of programs and facility requirements as part of decrees issued by the Minister of Health and Welfare. Vocational training during this period was mainly focused on initial training for unemployed youth, and was not focused on young people still in school or those planning to pursue further education, and therefore failed to develop the kind of skilled worker needed in an industrialized economy. It was also characteristic of the training during this period that even privately administered training was carried out under government initiatives.

As the legislation in the 1970s set high standards for mandatory training, in-house training by companies significantly contributed to developing skilled labor, with more than 60% of companies being required to provide in-house training to fulfill their obligations. In the 1980s, training obligations were continuously imposed on a larger population of companies, but the number of firms complying fell sharply as the mandatory percentage of workers in training was lowered. Moreover, employers often concentrated their training on skills or tasks requiring less investment so as to minimize cost. In 1987, the government sought to resolve the imbalance in training provision by stipulating that the obligation to provide training would no longer be based on the number of workers in a company, but rather would comprise a percentage of the total company wage bill. This mandatory percentage was later increased in the 1990s. Despite these efforts, there was little change in the ratio of companies meeting their vocational training responsibilities.[18]

In the 1990s, the state-led vocational training system focusing on initial training came to face new challenges amidst socio-economic shifts. An aging society, a declining youth population and rising education levels all contributed to a chronic shortage of skilled workers and hence the need to reform a training system skewed towards initial training. At the same time, industry was pushing for a higher level of technological sophistication, which required upgrading the skills of existing workers. Meanwhile, there was an increasing demand for training among the disadvantaged segments

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[18] For example, training expenditure was raised from 0.176% of a company's total wage bill in 1989 to 0.716% in 1994, a nearly four-fold increase, but the percentage of companies training their employees actually fell from 24.3% to 22.5% (Ministry of Labor, Vocational Training Program Statistics, various years).

Table 18. In-company Compulsory Vocational Training Statistics

(Unit: company, person, percent)

	No. of companies with training obligations (A)	Average training requirement (%)	No. of companies fulfilling training obligations (B)	Compliance to training regulations ratio (B/A)	No. of workers trained
1977	1,012	(Of workers) 5.7	673	66.5	
1978	1,095	6.2	774	70.7	
1979	1,223	6.7	723	59.1	
1980	1,103	3.14	669	60.7	66,213
1981	1,103	4.13	485	44.0	48,406
1982	1,106	2.44	507	45.8	30,131
1983	1,185	1.78	382	32.2	20,960
1984	1,263	1.82	268	21.2	22,011
1985	1,341	1.73	519	38.7	23,876
1986	1,398	1.63	356	25.5	19,042
1987	1,537	(Of total wage) 0.173	239	15.5	14,774
1988	1,573	0.195	403	25.6	20,560
1989	1,612	0.176	392	24.3	17,570
1990	2,575	0.300	505	19.6	31,363
1991	2,675	0.479	507	19.0	52,602
1992	3,417	0.619	551	16.1	122,457
1993	3,577	0.673	686	19.2	122,151
1994	3,753	0.716	843	22.5	152,030
1995.1	3,776	0.671	602	15.9	79,725
1995.7	390	0.831	273	70.0	160,413
1996	377	0.739	284	75.3	151,303
1997	373	0.679	301	80.7	173,686
1998	359	0.614	313	87.2	258,127

Notes: 1) Companies mandated to provide in-house training: 200+ employees (Jan. 1975), 500+ employees (end of 1975), 300+ employees (Apr. 1977), 200+ employees (Jul. 1989), 150+ employees (Jan. 1992), 1,000+ employees (July 1995).

2) Obligation to provide training based on a percentage of employee headcount was revised in 1987; thereafter it comprised a percentage of the total company wage bill.

Source: Ministry of Labor (1977-1998). Vocational Training Program Statistics

of the labor force, e.g., the unemployed, the middle-aged and aged, youth not pursuing higher education, and low income groups. These needs could not be met effectively within the existing framework of vocational training regulations, which were uniformly set under government control. These state initiatives, in fact, hindered attempts to make a swift response to rapid social and economic shifts involving globalization and advances in information and communications technology, and actually undermined autonomy in private training to a certain extent.

To reform the existing system towards one that was more demand-driven, the Korean government introduced the Vocational Competency Development Program in 1995 under the Employment Insurance Act. Under the Act, vocational training became a domain of the employment insurance system. From then on, the focus of vocational training shifted from providing initial training in technical skills towards retraining and lifelong vocational competency development of employed workers. In the beginning, however, the government pursued a dual strategy to prevent a rapid decline of in-company training and effect a smooth transition. In other words, Vocational Competency Development under the Employment Insurance System targeted all business enterprises with a headcount of 70 people or more, while vocational training obligations remained for larger companies in six designated industries, identified by the government, and employing 1,000 or more people. Unfortunately, this dual strategy caused confusion and dissatisfaction in the business sector

Act on Promoting Worker's Training and New Vocational Training System (1997–2004)

Critics of the inefficiencies of the dual vocational training system called for the integration of the systems. In 1997, the government replaced the Basic Law for Vocational Training with the Act on Promoting Worker's Training.

The new Act took effect in January 1999. Employers were freed of their duty to provide mandatory vocational training for their employees. Instead all companies were administered under the Vocational Competency Development Training Program, which became a major supporting mechanism for HRD in companies. The new vocational training policy can be understood more clearly when compared with policies before the Employment Insurance System came into being. The first major difference is that both employers and employees were given greater initiative in vocational training. Under the mandatory system, training was concentrated on manufacturing and production workers. Under the new system, training became more diversified, and now included workers in administration, ICT, and services. Secondly, the training market became open and created a better environment for fostering private sector initiatives in vocational training. Previously, training institutions had been limited to the non-profit institutions authorized by the Minister of Labor. Under the new law, however, both profit and non-profit institutions and individuals could all enter the training market, which would hopefully raise the quality of education and training through competition (Chung, Taik-Soo et al. 2002).

The enforcement of the Act on Promoting Worker's Training did bring about a rapid decline in in-house training for unskilled workers as private companies began to cut down on their investment in training facilities and equipment. At the same time, there was a rapid growth in short-term upgrade training for employees. During the past 10 years, the number of workers trained in their companies under public assistance—i.e., training levies or employment insurance funds—rose thirteen-fold from 152,000 in 1994 to 2,003,000 in 2004. Distance training, such as that provided through the Internet and paper-based correspondence courses was introduced in 1999, and has played a notable role in the qualitative expansion of skills upgrade training. By 2004, participation in Internet-based e-training grew by roughly 44 times in terms of the number of participants (MOL, 2004). The total number of trainees participating in Internet-based programs in 2004 was 864,612, accounting for about 42% of the total population of those trained with financial assistance from MOL (2,059,727). Clearly, distance training by the medium of the Internet is fast becoming a standard form of training for Korean workers.

The Asian financial crisis, which broke out towards the end of 1997, led to massive layoffs. The government sought to promote re-employment of the laid-off workers by offering them training. The number of participants enrolled in training programs for the unemployed was a meager 42,000 in 1997, but had risen to 358,000 by 1999. Unemployment Training also came to command a large share of the total training budget—as much as 56%—which is 450.4 billion won in nominal terms. Training of the unemployed is still viewed as one of the biggest contributions made by the Vocational Competency Development Program.

Workers' Vocational Competency Development Act and Labor-Management Participation (2005–Present)

The transition to a knowledge-based economy and a lifelong learning society requires the systematic development of workers' competencies. The Workers' Vocational Competency Development Act was legislated in December 2004 to encourage employers, workers and labor-management organizations to take the initiative in training. At the same time, it aims to respond flexibly to changes in training demand, to systemize the evaluation of Vocational Competency Development Programs, and to work on any problems identified during program implementation. The Act went into force in July 2005.

The Workers' Vocational Competency Development Act is unique in emphasizing partnerships between the central and the regional governments

as well as between labor and management. The principle of partnership became an important part of efforts in this regard when the Participatory Government (2003 to present) highlighted balanced development and social integration as key themes of its political agenda.

B. Vocational Training System

Korea's vocational training system consists of the Vocational Competency Development Program (VCDP), which involves training for the employed who are (or were) insured under the Employment Insurance System (the EIS will be discussed later), and other training programs funded by the government for those not covered by the EIS. The latter includes initial training conducted by public training institutions as well as training for the unemployed and low-income workers.

Vocational training in Korea can be divided into two kinds based on the type of training institutions, namely, public and private vocational training. Public training is undertaken by the Human Resources Development Service of Korea (HRD Korea), Korean Chamber of Commerce and Industry (KCCI), governmental agencies, local governments, and the Korea Employment Promotion Agency for the Disabled (KEPAD).[19] It aims to train semi-skilled and skilled workers in programs lasting from three months to two years.

Private vocational training is undertaken by Training Foundations, Women Workforce Development Centers and Training Centers recognized by the Ministry of Labor. Private vocational training programs are divided into "training for the unemployed," "government commissioned training," "training for the employed" and "small and medium vocational training consortium," depending on the target trainee group. These programs consist mainly of institutional training. However, "training for the employed" is often conducted through e-learning or correspondence training.

Government commissioned training aims to foster workers in trades selected by the government as a priority.[20] Vocational training is undertaken

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[19] HRD Korea, KCCI and KEPAD are concerned with trades that are commonly required by the manufacturing industry (die-making and machine work), export–oriented trades (gem–cutting, dyeing and weaving etc.), and trades in advanced and new technology (CAM).

[20] Priority occupations are defined as: (1) occupations in industries essential to the national economy in which there is shortage of labor; (2) occupations in the nation's strategic industries, such as the ICT industry and the automotive industry, in which there is labor shortage; and (3) other occupations announced by the Minister of Labor, in which it is necessary to foster human resources as industries' demand for labor force increases.

in 17 industrial sectors including traditional ones such as agriculture/forestry, fisheries, and mining and newly emerging ones such as the environment.

Initial Training at Public Training Institutions

a. Korea Polytechnic Colleges (KOPOs)

Korea Polytechnic Colleges are a group of publicly funded post-secondary VET institutions. The KOPOs consist of seven regional colleges (or regional hub colleges) and four specialized colleges. With each regional college having two to eight campuses, the total number of KOPO campuses is 43.

In March 2006, the government consolidated 23 polytechnic colleges and 21 public vocational training institutions, which had been responsible for public training, into the Korea Polytechnic Colleges. The aim was to create institutions with sufficient size and capacity to serve as regional hubs for vocational education and training, and to raise efficiency levels in managing these institutions.

The KOPOs offer a wide range of training programs for the lifelong vocational competency development of various groups of people. They offer two-year associate degree programs and one-year programs for training craftsmen and master craftsmen. They also provide short-term programs for employed workers and training programs for the unemployed and retired military servicemen. Mobile training and distance programs provided by KOPO target residents of remote villages in mountains and islands. Disadvantaged groups, such as individuals with mild physical challenges and North Korean refugees, who have newly settled in South Korea, can also receive training.

KOPOs, as state-run institutions, offer unique programs for training middle-level and/or multi-skilled technicians in demand by industry—e.g. the mechanical, electrical, electronic and automobile industries—which are difficult for privately-run schools to provide due to the large investment required for building and maintaining training facilities. Other distinct features include a low tuition fee of approximately 980,000 won per semester and field-oriented courses. Thanks to such programs, which are highly relevant to the actual workplace, KOPOs have achieved more than a 95% employment rate for their graduates for six consecutive years.

b. Technician Training Programs (associate degree program)

These are two-year programs to train multi-skilled technicians. Multi-skilled technician programs are provided in 48 disciplines, including such areas as automation systems, car electronics, mechatronics, and computer-applied molding. These programs focus on training learners in the skills

that industries need in the workplace. Graduates of multi-skilled technician programs receive an industrial associate degree; as of 2004 there were 13,603 students enrolled in these programs.

To apply, the applicant must have either finished high school or be in a class that is about to graduate from high school, or should be recognized as having achieved a level of education appropriate for a high school graduate. If the applicant enters an evening program, he or she must earn credits for practicum, which might involve working experience in an industry. A person employed in a company which is in the same industry as that which he or she is studying (including students in the final year of vocational high schools who are participating in OJT) or has more than two years of working experience in a related industry, will be able to have that experience recognized as credit equivalent.

Training consists of 40% theory and 60% practicum, and the student must earn 108 credits to graduate from the two-year program. The Polytechnic Act provides detailed guidelines on curriculum, credits, requirements for

Table 19. Training Courses of the Multi-skilled Technician Program

Area	Discipline
Information/Electrics/ Electronics	Information & Communication (Equipment), Electrical Measurement & Control, Electricity, Electronics, Information & Communication (System), Multimedia, Opto-electronics, Avionics, Semiconductor Design, Computer Games, Computer Information, Media Design, Electronic Communication
Machinery/Metal	Computer Aided Machinery, Computer Aided Die & Mold, Computer Aided Mechanical Design, Nano Measurement, Machine System Maintenance, Aeronautical Engineering, Automobile, Materials, Computer Aided Metal, Car Electronics, Mechatronics, Automation of Plant Installation
Architecture/Industrial Application	Architecture Remodeling, Environmental Chemistry, Industrial Installation Technology, Manufacturing Automation, Automation of Building Installation, Interior Design
Design/Textiles	Visual Communication Design, Computer Animation, Industrial Design, Jewelry Craft, Fashion Design, Textile Design, Textile System, Textile Color Technics, Fashion Marketing, Fashion Making, Printing Media, Textile Management, Textile Material Design, Internet Media, Printing Information & Media

Source: http://www.kopo.or.kr.

graduation, courses, open lectures, etc. Polytechnics offer various programs that fall into one of the following areas: Information/Electrics/Electronics, Machinery/Metal, Architecture/Industrial Application, and Design/Textile.

c. Craftsmen Training Program

The Craftsmen Training Program is a one-year program offered by the regional KOPO campuses. Training is provided for various technical occupations, and the target groups are mainly youth who do not intend to pursue higher education, the unemployed and women. Applicants are neither judged nor rejected based on their educational background. A total of 9,781 trainees enrolled in this program in 2005 (MOL, 2006).

Participants in the craftsmen training program must take 1,400 hours of classes. The 1,400-hour requirement is broken down into: basic theory (140 hrs), advanced theory (280 hrs) and advanced practicum (980 hrs). The Craftsmen Training Program is offered in a number of disciplines, such as Computer Aided Machinery, Computer Aided Die & Mold, and Industrial Installation. The discipline of Computer Aided Machinery aims to teach people the skills of: computer-aided design of industrial machine parts (2D, 3D), CNC programming for parts modeling and DNC machining using CAD/CAM software, operating CNC machines and machining of parts using DNC systems, operating 3D measuring devices and other material testing equipment, and repairing and maintaining machinery and automated devices, etc. The course teaches trainees pursuing occupations such as CNC lathing (numerical control lathing), machining center (numerical control milling), and CAD/CAM.

The discipline of Computer Aided Mold & Die trains students in parts mold design and machine-making using computer systems, CAM-based programming and CNC lathing, machining centers, electric discharge machining, wire-cutting, production of sophisticated mold using machines, use of 3D measurement systems and heat treatment, experimentation using material testing equipment, design, production and maintenance of jigs, supports, etc. Occupations trained under this course include press mold-making and mold die-making.

d. Master-Craftsmen Training Program

Polytechnic colleges provide one- to two-year programs to train master craftsmen in the specialized area of engineering.[21] To qualify for a one-year

[21] There are two courses (a one-year course and two-year course) in the Master Technician Program. Those who have more than three years of work experience can complete the Master Technician Program within one year.

master craftsmen program, the applicants should meet one of the following conditions: possess a Grade 1 Technician (or industrial technician) certificate or have more than three years of working experience in the relevant field; possess a Grade 2 Technician certificate or have more than five years of field experience, or have nine years of experience in the same field. Similarly, the two-year program is open to applicants who meet one of the following conditions: have a Grade 1 Technician (or industrial technician) certificate or have more than one year of experience in the same field; possess a Grade 2 Technician certificate, or have three years or more of relevant field experience, or have more than seven years of experience in the same field.

The Master Craftsmen Program[22] is provided through evening courses and is offered in six disciplines, including machine tools, electrical engineering, car maintenance and molding; there was a total enrollment of 233 students in 2004. Education and training expenses for the program are fully covered by the government.

e. KCCI Training Centers (KCCI Human Resource Development Institutes)

KCCI runs eight HRD Institutes, which aim to develop an industrial workforce demanded by its member companies, to facilitate the supply of skilled technical workers to SMEs, and to expand opportunities for youth to acquire skills. Their programs can be divided into one-year and two-year programs. The two-year programs are open to applicants under thirty years old, who have a high school diploma (or those in a class that is about to graduate from high school at the time of application) or who are recognized as having completed a commensurate level of education. Men who have not fulfilled their military duties are not eligible to apply unless they are free from being drafted within three months of the start of the program. However, the one-year program sets no restrictions as to prior educational achievement (in other words, those in classes about to graduate from general high schools are eligible. This does not apply to students in vocational schools). Applicants should be between the ages of 15 and 29, while young men who have not completed military service are not eligible to apply unless they are free from any military duties for at least three months into the start of the program.

The criteria for evaluating an applicant's aptitude are set by the director of each HRD Institute. Applicants are screened based on a review

22 Master craftsmen in Korea usually possess theoretical knowledge, but lack practical skills. Their role is not as well recognized as that of the German Meisters.

of the application documents and through an interview. The documents are screened for the past record of attendance and behavior at high school, and SAT scores are not taken into consideration. The interview is focused on determining whether the applicant has the appropriate aptitude and personal commitment to technical skills training, as well as his/her occupational values. As a secondary consideration, applicants who do not have any special physical conditions that may seriously hinder participation in the program and group activities are selected. Criteria are defined for identifying priority candidates for acceptance to the program (Clause 10 of the Decree of the Vocational Education & Training Promotion Act).[23]

The training program begins in March and ends in mid-February of the following year. The one-year program is composed in such a way that specialized technical skills training accounts for more than 50% of the curriculum. Courses offered by HRD Institutes are categorized by their degree of expertise into basic, advanced, and expert courses. Instructors train students with project-based courses, which are aimed at transferring expertise to the trainees so that they themselves can acquire problem-solving and application skills.

Table 20. Curriculum at KCCI HRD Institute

Classification		Required Hours	Ratio (%)
Curriculum (2-year program)	Total	2,800	100
	General foundation courses	120	4.3
	Basic skills	200	7.1
	Specialized skills	1,500	53.6
	Independent training	980	35
Curriculum (1-year program)	Total	1,400	100
	General foundation courses	40	2.9
	Basic skills	100	7.1
	Specialized skills	770	55
	Independent training	490	35

Source: http://kccihrd.korcharm.net.

The majority of the programs span two years in the field of machinery and computer processing. As of 2004, 2,010 trainees were enrolled in the two-year programs. Machine Design & Making accounts for the largest

23 Priority applicants are unemployed persons, who have been searching for a job for more than three months without success. Up to 30% of the students are selected among those identified as priority applicants: (1) benefit recipients covered under the Livelihood Protection Act (Persons eligible for livelihood protection benefits), (2) veterans or their family members, (3) physically-challenged persons as defined by the Social Welfare for the Physically Challenged Act.

share of enrollment, followed by 210 in Computer-applied machining, 180 in Mechatronics, 150 in Systems Control, and 120 each in Electronics and ICT Installation. The disciplines of Machine Maintenance, Pneumatic and Hydraulic Control, Jigs and Supports, Computerized Press Molding, Heat Treatment, and Electrical Control also recruit up to a maximum of 100 trainees each.

Vocational Competency Development Programs (VCDP)

a. Employment Insurance System (EIS)

In Korea, in-company training and training for the unemployed are financed through the Employment Insurance System (EIS). The EIS was introduced in July 1995 as a comprehensive system intended to reduce the risk of unemployment, the risk of losing income as a result of unemployment and the risk of skill obsolescence.

In the early 1990s, the government developed a new economic strategy (New Economic Plan), which aimed to transform the economy from a growth-oriented economy with lifelong employment and low wages into an economy based on competition, a flexible labor market and higher wages. The EIS was introduced to assist workers in an environment more conducive to layoffs.

The Employment Insurance System comprises three components: the Employment Security Program, Vocational Competency Development Program, and the Unemployment Benefit Program. The Employment Insurance premium, which serves as revenue for the system, has been collected under separate systems. Payment of the premium for the unemployment benefits program is borne by the workers and the management. The premium amounts to 0.9% of the total gross wage (excluding contingent daily workers), which workers and the management share equally (each paying 0.45% of the total gross wage). The payment of the premium for the Employment Security Program is borne by the employer alone, and it amounts to 0.15% of the total gross wage (including contingent daily workers).

Vocational training initiatives are supported through the Vocational Competency Development Program (VCDP). The EIS is a levy-grant system in that employers and employees make payments in the form of a levy and get a refund for expenses upon implementation of training. The size of the levy for VCDP varies according to the size of the company. Companies with fewer than 150 employees pay 0.1 percent of the overall wage bill and companies with more than 1,000 employees pay 0.7 percent (Table 21). The reason for the differing levy amounts is due to differences in how in-company vocational training is provided. Even though the Employment

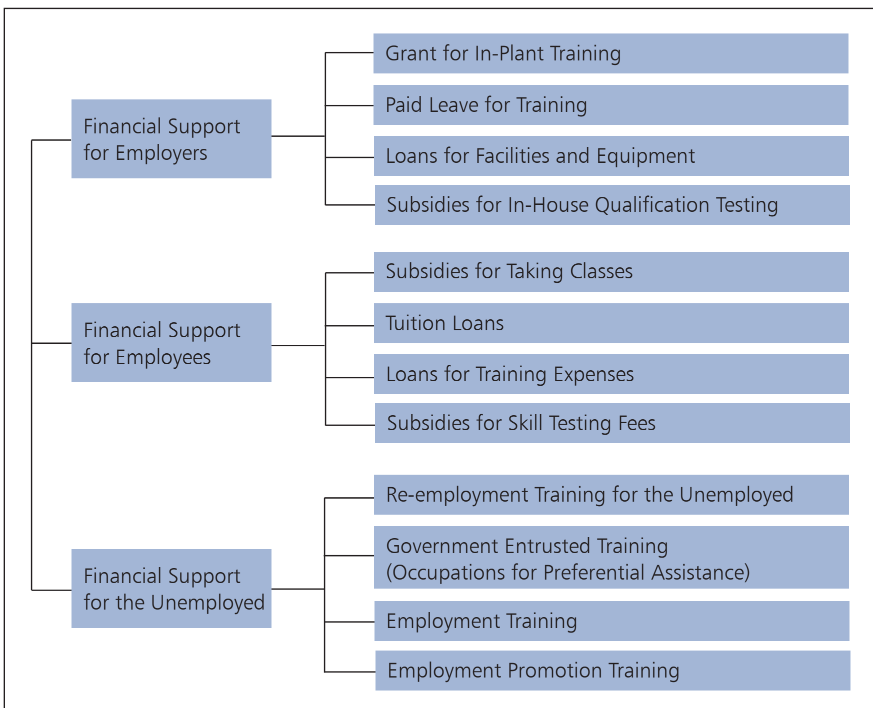
Table 21. Insurance Premium Rate (%)

Company size	Premium rate
Companies with headcount < 150	0.1%
Priority Support Companies with headcount ≥ 1501)	0.3%
Companies with headcount 150 - 1,000	0.5%
Companies with headcount ≥ 1000	0.7%

Notes: 1) Priority Support Companies are defined by varying full-time headcount criteria by industry: 300 or less for mining, 500 or less for manufacturing, 200 or less for construction, 300 or less for shipping, warehousing and communications, 100 or less for other industries. For more details, refer to Clause 15 of the Decree of the Employment Insurance Act.

Source: Clause 12, Decree of the Act on the Collection of Premium for Employment Insurance and Industrial Damages Insurance.

Figure 2. Vocational Competency Development Program



Source: www.molab.go.kr (September, 2006)

Insurance Fund is collected from employees and companies, the government has the responsibility for its management.

The purpose of the VCDP under the EIS is to act as an incentive system in order to promote voluntary training by providing financial support to employers and employees from the EIS fund. There are three main categories of financial support available under the scheme. The first is support for employers who conduct Vocational Competency Development Programs, namely, subsidies for training costs (grants for in-plant training and paid leave for education and training), loans for training facilities and subsidies for in-house qualification testing. The second category of support is for employees, in the form of subsidies for taking classes, tuition loans, loans for skills training expenses and subsidies for skills testing fees. Finally, the unemployed are offered opportunities to participate in various training activities regardless of their eligibility for unemployment benefits. Support for the unemployed include: re-employment training for the unemployed provided by companies covered by employment insurance, and publicly commissioned training (for priority occupations) for unemployed persons over 14 years old, who have registered for job searches at an employment security agency or seniors in general high schools who have decided not to pursue higher education.

Under the Act on Promoting Workers' Vocational Training enacted in 1999, the Minister of Labor provides financial support to employers who provide Vocational Competency Development Programs (VCDP). The Minister also supports employees who make an effort to develop their vocational competency, i.e., by participating in vocational competency development training programs, pursuing a certificate or undertaking programs designated under the Education Law. Governmental agencies or local autonomies may provide training for the unemployed.

The Basic Law for Vocational Training, including the compulsory training system, contributed to the early increase in in-company training, but did not meet the training demands of private firms during the more recent environment of ongoing changes in the Korean economy. In addition, the law constrained enterprises from providing upgrade training for their employees. The government enacted the Act on Promoting Workers' Vocational Training in 1997 to establish a system for Vocational Competency Development[24] and to encourage enterprises to provide further training for the employed on a voluntary basis. The act has been in effect since January

[24] The Act on Promoting Workers' Vocational Training uses the term "Vocational Competency Development" to differentiate it from "vocational training" used in the Basic Vocational Training Act.

1999. With the enforcement of the act, the Basic Law for Vocational Training was abolished.

b. Implementation of VCDP

Since the introduction of the EIS in 1995, the Vocational Competency Development Program has expanded its scope of coverage and its subsidies to include private vocational training (Table 22). Initially, the level of subsidy was not high, but it has grown dramatically since 1998 when the Asian Financial Crisis resulted in mass unemployment in Korea. As of 2005, the number of workers participating in training supported by subsidies from the Vocational Competency Development Program reached 2,497,700, and the training participation rate of the insured stood at 31.0 %. This demonstrates that the VCDP has become the most important subsidy program for upgrading the vocational competency of employees.

Table 22. Participation in the VCDP

(Unit: number of firms, thousand persons, percent)

		1995	1997	2000	2002	2005
Firms	Insured	38,953	47,427	693,414	825,531	1,148,474
Firms	Subsidized	380	8,863	86,692	62,293	185,824
Firms	Participation rate	(1.0)	(18.7)	12.5	(7.5)	(16.2)
Workers	Insured	4,204	4,280	6,747	7,171	8,064
Workers	Subsidized	10	200	1,367	1,739	2,498
Workers	Participation rate	(0.2)	4.7	20.3	(24.3)	(31.0)

Source: Ministry of Labor (various years), *The Current Status of Vocational Competency Development Program*

Despite the fact that state-led programs for vocational competency development have increased the opportunities for vocational training, there continue to be many problems that need to be addressed. A key issue with the VCDP is that it is still predominantly controlled by the government and driven by suppliers of labor. In addition, it has been criticized for the employer-centered nature of the support system and the inequality of employee's access to training opportunities.

The VCDP includes a provision to subsidize training costs or provide loans to employers to provide self-directed training opportunities for their workers, but the outcome of this particular provision of the program has been disappointing. The majority of VCDP participants undertook in-company training (94.1%), while only a small fraction took paid leave for education

and training (0.2%), financing for college courses (2.8%) or participated in SME training consortia (2.85%) (MOL, 2006).

Moreover, in-company training is concentrated in large firms. In 2005, the participation rate of firms with less than 150 workers in in-company vocational training was negligible, while it came close to 64.5 percent in the case of firms with over 1,000 workers. The high participation rate among larger firms is explained by the fact that firms may claim support more than once over a given period of time. Other types of training programs for employed workers are also mostly pursued by larger firms.

Table 23. Support for Vocational Training by Firm Size

	Total	Less than 50	50~150	150~300	300~500	500~1,000	1,000 +
Companies	111,419	74,652	16,419	7,754	3,446	3,690	5,458
(%)	(100.0)	(67.0)	(14.7)	(7.0)	(3.1)	(3.3)	(4.9)
Head count	2,350,509	233,136	116,134	177,984	111,141	196,765	1,515,349
(recipient %)	(100.0)	(9.9)	(4.9)	(7.6)	(4.7)	(8.4)	(64.5)
Subsidy	236,494,595	30,490,257	12,202,688	17,332,888	11,773,701	18,927,739	145,767,322
(support %)	(100.0)	(12.9)	(5.2)	(7.3)	(5.0)	(8.0)	(61.6)

Source: Ministry of Labor (2006). *Current Status of Vocational Competency Development Programs*

The skewing of vocational competency development to employees of large corporations has resulted in an imbalance in employment and wages, which has further widened the gap between large enterprises and SMEs in terms of technology level and the capacity to perform. This has the potential to become a structural problem for the Korean economy.

In addition to the skills and training gap by size of enterprise, there are other sources of imbalance, such as discrimination against women, the less educated, and the less skilled, all of whom have access to fewer training opportunities (Joo-Sup Kim et al., 2004). Also, contingent workers are far less likely to have access to training than are regular workers. Meanwhile, the self-employed were found to be another group showing a low participation rate in training.

Vocational Training for the Unemployed

Starting at the end of 1997, vocational training for the unemployed was one of several key labor policy responses that served to prevent an overall decline in the skill level of the workforce and to maintain a commitment

to providing training and employment opportunities. This policy, however, was focused solely on fostering quick re-employment of the jobless and to raise the capacity of the labor market to supply training programs. Not surprisingly, the policy overlooked people who had just lost their job, people who had remained jobless for a long period of time, and the unemployed and middle-aged women.

The statistics on vocational training for the unemployed during the 1998-2005 period show that there was a significant increase in the number of trainees receiving training immediately after the outbreak of the Asian Financial Crisis. In 1998, 332,932 people were trained under this initiative. The number peaked at 353,852 in 1999 and began to decline in 2000 and had fallen to 115,129 by 2005 (see Table 24).

Table 24. Vocational Training for the Unemployed during 1998-2005

(Unit: person)

Type of Training	1998	1999	2000	2005
Total	332,932	353,852	214,686	115,129
• Re-employment training	307,417	327,913	194,490	91,130
- Re-employment training For the unemployed	170,096	226,356	120,296	64,179
- Employment promotion Training	113,008	72,756	52,683	7,791
- Employment training	10,715	10,022	6,666	19,160
- Training in areas with High employment potential	-	11,054	10,146	-
- Entrepreneurial training	13,598	7,725	4,699	-
• HRD training	25,515	25,939	20,196	23,999
- Technician training	14,515	16,817	13,311	9,520
- Priority occupations training (commissioned by government)	11,000	9,122	6,885	14,479

Note: Paid-for leave training was included in vocational training for the unemployed during the period 1998~2000. From 2001, it was categorized as one of the forms of training for employed workers. To make a more accurate comparison with later statistics, paid-for leave training is excluded from the figures for the period 1998~2000 statistics.

Source: Ministry of Labor (1998-2005). Current Status of Vocational Competency Development Program.

The participant profile of vocational training for the unemployed in 2005 shows that there were more men than women and there was a higher percentage of the less educated without high school diplomas among the unemployed. By age, the majority of the unemployed comprised young people under 30 (See Table 25). Re-employment training for the unemployed, for example, saw a sharp rise among women participants compared to 1998 and a slight increase of participants aged 30 or older. This shows that the aged, who face a higher probability of going into long-term unemployment, are participating more actively in the training programs. The participant make-up in terms of the number of trainees by area of training was as follows: information and communications sector accounted for 24.4%, machinery and equipment 23%, and the service industry 15.7%. In other words, as many as 63.4% of all trainees were concentrated in the above three areas.

Table 25. Breakdown of Employment Training for the Unemployed (2005)

(Unit: person, percent)

Training type	No. of Participants	Gender		Education Level		Age			
		M	F	H.S or lower	Under Grad. +	Up to 29	30~39	40~49	50+
Total	106,022	52.2	47.8	56.1	43.9	53.0	30.7	10.5	5.8
Reemployment training of unemployed	63,514	42.8	57.2	51.9	48.1	45.3	37.2	11.6	6.0
Employment training	18,400	45.6	54.4	51.5	48.5	57.5	26.1	10.9	5.5
Priority Area Training (publicly commissioned)	14,479	79.8	20.2	74.5	25.5	69.3	16.1	7.3	7.4
Technicians Training	9,629	85.0	15.0	65.0	35.0	71.1	18.9	7.0	3.0

Source: Ministry of Labor (various years), *The Current Status of Vocational Competency Development Program*

The profile of trainees and their participation in various areas of training shows that training is provided with an employer-oriented basis. It does not adequately take into account the demands for an appropriately skilled industrial workforce and the variation in the supply of resources, including such factors as gender, education level and age. Expanding the size of the programs alone will not be sufficient to meet the training needs of people who have just lost their jobs. Therefore, training programs should

be customized in a way to prevent long-term unemployment.

The employment rate of participants in training for the unemployed in general in 2005 was about 60%. The employment rate was as high as 112.9% in the priority training areas. However, re-employment training for the unemployed, the largest training initiative of the four, only achieved an employment rate of 57.0%, which was below average (Table 26).

Table 26. Results of Vocational Training for the Unemployed (2005)

(Unit: person, percent)

Training type	Target trainee count	Actual trainee count	People under training	People who have completed training	Employment count (employment rate)	Drop-out count
Reemployment training of unemployed	54,395	64,179	17,119	32,578	18,567 (57.0)	14,482 (6,384)
Employment training	18,091	19,160	5,021	10,017	4,932 (49.2)	4,122 (1,489)
Priority Area Training (publicly commissioned)	11,000	14,479	8,141	3,455	3,899 (112.9)	2,883 (1,638)
Technician Training	7,870	9,520	-	7,692	5,176 (67.3)	877 (163)

Notes: 1) In the "Drop-out count" the number in parentheses refers to the number of people who found employment while receiving training and stopped participating in the program.
2) Calculations were conducted as of the end of 2005. Most programs span 6-12 months. Figures for technician training, which is due to be completed in February-March of the following year, are calculated based on February 2006.

Source: MOL (2006). Current Status of Vocational Competency Development Program

C. Government-grant Programs to Promote Training and Learning

SME Training Consortium

The Ministry of Labor (MOL), in an attempt to resolve the chronic labor shortage facing SMEs and to raise their long-term competitiveness, introduced the SME Vocational Training Consortium, in which large enterprises, education and training institutions, employer organizations and SMEs jointly participate. There are practical limitations hindering the

participation of SMEs in the vocational competency development programs, which the government sought to overcome with a consortium approach (aimed at overcoming corporate differences).

The SME Vocational Training Consortium was originally piloted for one year from July 2001. There are four categories of Training Consortia defined by the managing organization, with relevance to industry and the accessibility to training being among the key features of the consortia. These four categories are: a public training institutions-SME model, an employer association-SME model, a large enterprise-SME model, and a college-SME model. Public training institutions and employer organizations take the initiative as providers of training and form the consortium, and carry out the training of new recruits, competency improvement of existing workers, and information technology training. Each consortium should form a steering committee, which must agree on plans for the operation of the consortium and the training programs. The steering committee is also responsible for performance evaluation and reporting. The MOL subsidizes the costs of hiring full-time staff for the consortium that is responsible for analyzing training needs and developing training programs. The steering committee is chaired by the director of the training organization and consists of officers of the local labor office, vocational training experts, and top executives of SMEs.

The most important aspect of a training consortium is its focus on the demands of industry for skilled workers. The consortium investigates the current skills profile for newly recruited workers and training demands, based on which it develops and provides training programs. This ensures that the programs are relevant to the needs of industry. In addition, the secretariat of the consortium performs administrative tasks concerning the VCDP for participating SMEs, thus reducing their burden of administrative work and associated costs.

The government provides far greater support for the training consortium than for any of the other existing governmental programs. To cover the training cost, the government provides assistance more favorable to the recipients than that which has been typically offered to other projects under the employment insurance system. The share of the cost to be born by the employer is in this case born by the consortium. Participating SMEs can therefore train their employees without the financial burden of investing in training. Moreover, the government subsidizes the purchase of training facilities and equipment, and installation of IT systems within a set limit. Likewise, the government provides financial assistance, which partly covers PR expenses, the salaries of consortium coordinators, and the cost of developing training materials, all within a certain limit.

Since the pilot launch in 2001, the number of SMEs and trainees participating in the SME Vocational Training Consortium program has steadily risen. As of 2005, 47 institutions had delivered training to 70,991 trainees. In the pilot year, 1,029 SMEs took part in the consortium, but the number had exploded to 33,181 by 2005. The budget for subsidies provided under the initiative has also been dramatically scaled up from 3.2 billion won in 2001 to 40 billion won by 2005 (Table 27). The employment rate and completion rate for participants receiving training under the program are 70.5% and 95.0% respectively, which are higher than for other training programs, such as training for areas with high employment opportunities and government-commissioned training.

Table 27. Outcomes of SME Training Consortium

(Unit: KRW million)

	2001	2002	2003	2004	2005
Number of consortium organizers	6	8	19	30	47
Number of trainees	4,091	9,931	20,436	38,333	70,991
Number of participating SMEs	1,029	3,186	8,258	14,861	33,181
Amount of subsidies (KRW 100 million)	32	61	141	168	400

Source: Lee, Jong-Hoon and Kim, Se-Jong (2006).

A Scheme to Support E-learning in Corporate Training

Korea is well known as a country which has achieved a rapid development in the ICT sector. The role of government initiatives in Korea has been crucial to this development and the promotion of e-learning in particular. The government has given special attention to e-learning by setting up distinct e-learning policies that have contributed to the speedy dissemination and growth of education using electronic medium. In addition, both MOE&HRD and MOL jointly sharing the mandate for HRD have also contributed their part in fostering e-learning. In this section, an MOL grant program to promote e-learning in corporate training is reviewed.

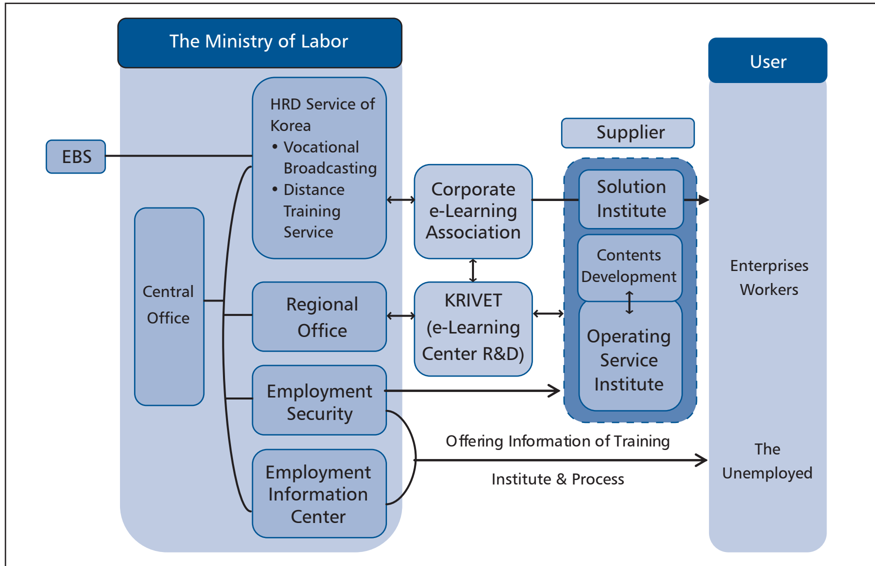
The Ministry of Labor provides policy and financial support for the enhancement of employees' vocational competency. In 1999, it added web-based training (known as Internet-based training) to the Act on Promoting Worker's Vocational Training as a new form of vocational training. The Ministry has been subsidizing part of the training expenses of employers who, in compliance with the Employment Insurance Act, have their employees take web-based training courses. Moreover, in August 2001, the Ministry announced a plan to promote internet-based training, which is now being implemented. The Korea Research Institute for Vocational Education and Training (KRIVET), through its "Center for e-learning," advises the Ministry of Labor regarding Internet communications training, and conducts research and related projects on vocational training and lifelong learning. In 1998, a pilot project on internet-based training was carried out in seven companies, with 67 courses and 7,187 participants. In September 2000, there were 18 companies operating these training programs and a total of 206 courses being offered (Yi, Su-gyeong, 2002).

Corporate workers are usually the main targets of e-learning support. In the public sector, the Ministry of Labor and its affiliated offices are in charge of providing training services, training information, and financial support for training. In the private sector, on the other hand, they are in charge of e-learning contents development, training service, support programs, and the development of tools. In order to better represent their interests, a federation of e-learning industries was also founded to carry out cooperative work in e-learning service and research. While KRIVET administers specialized research and development in the field of job training, the HRD Service of Korea uses the EBS channel to provide vocational broadcasting to e-learning recipients and the Internet to directly provide distance-learning services.

In addition, the Employment Service Centers in the regions provide information on e-learning along with information and counseling to individuals who wish to either change their place of employment or find a job. The system has been set up so that individuals can use the Work Information Center's HRD-net to search for information about training institutes and training courses (Lee, Hyun-Jung, 2005).

The number of workers who participated in Internet training supported by the Ministry of Labor increased approximately 40.9 times from 19,653 trainees in 1999 to 804,241 trainees in 2004 (Table 28). The proportion of Internet correspondence training to total training (off-line, on-the-job, and correspondence training) supported by the Ministry of Labor in terms of the percentage of trainees also increased at a similar rate during the same period.

Figure 3. e-learning Support System



Source: Lee, Hyun-Jung (2005).

Table 28. Number of Firms and Trainees Participating in e-learning

(Unit: number, person, percent)

Year	Internet correspondence Training Institutions	Internet correspondence Trainees (A)	Total number of Trainees (B)	(A/B)×100
1999	16	19,653	781,408	2.5
2000	51	137,712	1,220,334	11.3
2001	110	406,159	1,555,402	26.1
2002	93	571,006	1,687,825	33.8
2003	105	523,577	1,532,993	34.2
2004	109	804,241	1,943,475	41.4

Source: Korea Employment Information Center, unpublished data, 2005.

Through the full utilization of the MOL's Internet-based training, there have been positive results in terms of the cost-effectiveness of education. However, there have also been criticisms that the employment insurance reimbursement criteria has led to a homogenization of Internet-based training content (*Digital Times,* 10 July 2001) and that training subsidies have mostly been allocated to large corporations. In response to these criticisms, the MOL is making greater efforts in quality management and making necessary revisions of relevant laws and regulations.

Lifelong Learning Company Program (New Paradigm Pilot Program)

There are good practices in HRD, such as those employed at Yuhan Kimberly, in which companies have achieved greater productivity, created jobs, and improved employee capacity to learn, all at the same time (The case of Yuhan Kimberly is described in detail in Chapter V.). These organizations may be fittingly called “lifelong learning companies” and their model may be a viable solution to the complex problem of the Korean labor market situation and the need to invest in HRD. The government has been running the New Paradigm Pilot Program to disseminate good practices in HRD such as in the case of Yuhan Kimberly for others to benchmark.

In order to identify and promote good practices in people-centered business management, the government established the New Paradigm Center. This center provides free consulting to businesses based on the work-shift reform and the learning organization model as exemplified by Yuhan Kimberly.[25] The first part of the consulting service focuses on building a lifelong learning system within the company and managing changes (e.g., changes in performance evaluation systems). Secondly, consulting is provided on work-shift reform and management of subsequent changes (e.g., changes in salary systems). Firms can choose to receive consultancy in just one of the areas or both.

Building a lifelong learning system attempts to move away from the conventional way of training employees in a classroom on subjects narrowly relevant to work tasks. A lifelong learning system allows for a more comprehensive and a longer-term approach to be taken, and addresses the questions of what, how and when to instruct trainees. It also aims to promote greater diversity in approaches to training and instruction. One of the key objectives of the system is to foster the ability to go beyond theories to solve real-life problems.

Work-shift reform, on the other hand, is basically aimed at reducing the chances of overwork while creating a working arrangement suitable for employees to engage in learning. The management can gain from this by fostering the development of knowledge workers, capable of responding flexibly to a knowledge-based society. Workers can gain from this by substituting extra hours of work for learning and thereby reinvigorating themselves in the process, which can help make their lives healthier, more productive and fulfilling with time.

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25 The New Paradigm Pilot Program is financially supported by Employment Insurance. The amount of funds expended by the New Paradigm program in 2005 was 4.3 billion won.

a. New Paradigm Program Procedural Flow

The procedural flow of the New Paradigm Program can be divided into two phases: application and candidate selection, and project execution. The first phase procedural flow is as follows: consultation with program organizers and submission of application → visit to the workplace and discussion with the employer → screening and selection → drafting of proposal → MOU and pledge of integrity signoff. The second phase of actual project execution proceeds as follows: preparation and launch → status analysis and evaluation → system design → implementation → ongoing improvement.

b. Progress of New Paradigm Program

Organizations that have applied for consultancy provided under the New Paradigm Program are screened based on several criteria, e.g.: senior management commitment to innovation, HRD philosophy, labor-management relations, potential ripple effects, potential for job creation, possibility of relieving overwork, balance in opportunities by industry/size/region as well as other criteria as determined by New Paradigm Center. Successful candidate organizations are provided consultancy over a period of five months. A total of 66 business organizations have participated in the New Paradigm Program as of February 2006.

The New Paradigm Program is not limited to companies of a particular industry or scale. It can be used by various types of companies. In the beginning, this project only provided consultancy services for private companies, but it has now been expanded to include the public sector as well. The National Police Agency embarked on a New Paradigm Project in December 2004 and successfully improved its work-shift systems and other working arrangements as well as establishing a lifelong learning system. The New Paradigm Program has had an impact on the cultural industry as well. Eight national museums, for example, have begun their own new paradigm projects, resulting in extending visiting hours and other endeavors in order to make themselves more accessible to a wider public audience.

The New Paradigm Program promotes three types of projects: the partnership project, lifelong learning project and work arrangement reform plus lifelong learning project. Partnership projects consist mainly of information exchange and cooperation to disseminate the ideas behind the new paradigm among companies that wish to participate in the New Paradigm initiative. Consultancy services are not provided for those companies engaged in partnership projects. Lifelong learning projects involve consultancy services provided to companies that agree to collaborate with the New Paradigm Center in building lifelong learning systems within their organizations. Finally, Work

arrangement reform + lifelong learning projects aim to reorganize working arrangements, while at the same time creating a system of lifelong learning. Companies participating in this third type of project were also provided with consultancy services by the New Paradigm Center.

Table 29. New Paradigm Consulting Projects

(Unit: number, person, percent)

Classification		Work arrangement reform + Lifelong learning	Lifelong Learning	Partnership
Manufacturing	Large enterprise	(3)	(1)	(1)
	SME	(15)	(1)	
Services	Large enterprise	(5)	(1)	(1)
	SME	(19)	(3)	
Public sector	Policy-making		(1)	(1)
	Public service	(7)	4)	3
Total	66	49	11	6

Source: Joo, Yong-kook (2005).

c. Achievements of the New Paradigm Pilot Program

The pilot New Paradigm Program has achieved three things. First, it has contributed to developing knowledge workers through lifelong learning inside the workplace. Increased time for learning has supported the shift from low value-added to high value-added industries and from a workforce dominated by the simple manual laborer to one dominated by the knowledge worker. Secondly, the reform of work-shift systems and the establishment of lifelong learning systems have contributed to job creation. Finally, this initiative has fostered a balance between work and life, between the workplace and the home by which it promotes more stable management relations and social integration.[26]

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26 Upon completion of the pilot program, the Pulmuone tofu factory in Eumseong changed its work system, from three shifts with three groups to three shifts with four groups as well as increasing the lifelong learning class hours from two hours per month to 12 hours. This increased the employment and production rate to 33% and 30%, respectively, while working hours per worker were reduced from 56 hours a week to 42 hours. (Joo, Young Guk).

D. Financing of Vocational Training

Some of the vocational training programs are financed by the government, while others are privately-funded. Public financing for vocational training includes the VCDP budget financed by the Employment Insurance Fund, which is run by the MOL as well as the budgets of various government bodies, such as the MOL itself and other ministries as well as local governments. Private financing comprises vocational training expenses incurred by private companies and individuals themselves. This section will focus on the public financing of vocational training.

According to MOL statistics, in 2004 employment training and technician training accounted for 45.2% and 35.4%, respectively, of the total subsidies, which amounted to 117 billion won. Employment promotion training accounted for 10% and the other types of training for less than that.

The MOL's assistance for vocational training is sub-divided into VCDP, under the Employment Insurance System, and support for non-subscribers to the EIS, through the general or special accounts of the Employment Insurance System.

Support for vocational training through the general or special accounts is intended for the unemployed. Assistance financed through the general account is provided for: technician training, carried out by HRD Korea and technical colleges for the training of manufacturing workers; employment training for individuals who have registered as unemployed with an employment stability agency and are actively seeking employment, such as those who have been laid off by companies uninsured by the Employment Insurance System, or those who have entered the labor market but failed to find a job; female head of household training for women without spouses who must support their families alone, and rehabilitation & vocational training for benefit recipients under the National Basic Livelihood Protection Act, who are capable of receiving vocational training.

In addition, Employment Promotion Training is supported by the special account for managing special taxes for farming and fishing villages. To be eligible, one should be unemployed and not covered by employment insurance, should be at least 15 years old and fall into one of the following categories: youth not looking to go on to higher education, individuals discharged from military service (or those about to be discharged within one year), recipients of benefits under the provisions of the National Basic Livelihood Protection Act (excluding rehabilitation trainees), individuals identified as in need of employment protection, and small-scale farmers and fishermen, etc. Employment promotion training is carried out by local governments with matching funds from the MOL and local governments.

Assistance through Employment Insurance

a. Collection of Insurance Premium for VCDP

VCDP insurance premiums (hereafter referred to as 'insurance premium') collected in 2004 amounted to an estimated 729.1 billion won, the highest amount collected up until then, with 1,002,638 companies insured under the Employment Insurance System paying on average 730,000 won.

By size of company, those with more than 1,000 employees paid 310 billion won, accounting for 42.5% of the total insurance premium collected. This is not surprising given the large scale that these businesses operate on. Companies with between 50 and 299 employees accounted for the second largest share of insurance premium due to the large number of companies falling into this category. In general, the per capita insurance premium progressively increases with the size of the company (Table 30).

Table 30. VCDP Insurance Premium Collected by Size of Company

(Unit: KRW 1 mil, %)

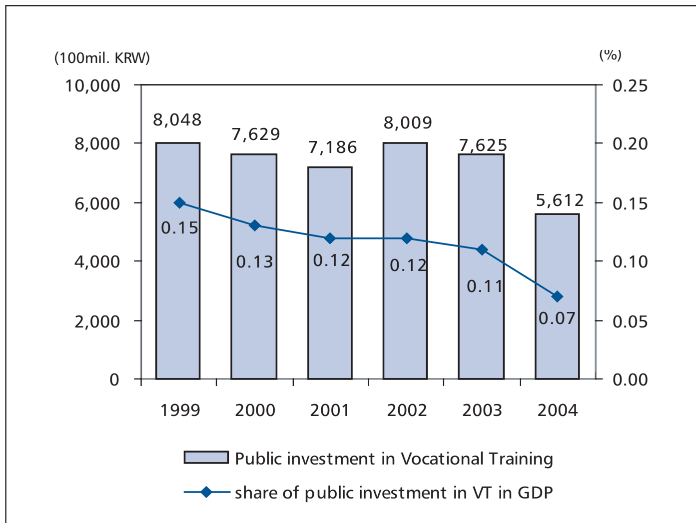
Classification	Total	Less than 50	50-299	300-499	500-999	1000 or more
Premium amount	729,133	160,588	131,690	53,470	73,461	309,924
Percentage	100.0	22.0	18.1	7.3	10.1	42.5
Total # of Companies	1,002,638	971,964	27,245	1,810	1,055	564
Total # of people insured	7,576,856	3,803,097	1,765,505	385,963	427,660	1,194,631
Premium per Company	0.73	0.17	4.83	29.54	69.63	549.51
Per capita Premium	0.10	0.04	0.07	0.14	0.17	0.26

Source: Chung, Won-Ho and Yeoin Yoon (2005).

b. Assistance for VCDP

Public investment in vocational training fell from an estimated 800 billion won in 1999 to 561.2 billion won in 2004. Expressed as a ratio of GDP, the figures drop likewise, from 0.15% to 0.07%. This declining trend can be explained by the sharp and temporary increase in the assistance for re-employment training for the jobless during the economic downturn and the subsequent reduction of investment in vocational training (See Figure 4).

Figure 4. Ratio of Public Investment in Vocational Training to GDP



Source: MOE&HRD; KRIVET (2005). Human Resource Development Indicators

Table 31. Assistance for VCDP under the Employment Insurance System

(Unit: KRW million, percent)

	Classification		Amount	Percentage
Employer support	Vocational competency development training		198,243	37.8
	Paid leave training		8,021	1.5
	Training facility & equipment lease		6,250	1.2
	SME Consortium		16,848	3.2
	In-house qualification testing support		251	0.0
	Sub-total		229,613	43.7
Worker support	Support for the employed	Course tuition support	5,873	1.1
		Worker tuition loan	74,799	14.3
		Testing fee	488	0.1
	Support for the un-employed	Re-employment training for the jobless	124,206	23.7
		Government-commissioned training	89,992	17.2
	Sub-total		295,358	56.3
Total			**524,971**	**100.0**

Notes: 1) Includes only the operating costs and the facilities and equipment rental. Training support not included. The SME Training Consortium Project is classified as worker support in the Annual Employment Insurance Statistics. In reality, the SME Training Consortium Project subsidizes businesses, employer associations and colleges, therefore in the above table it was classified as employer assistance.

2) Training tuition loan targeting the employed was excluded from the table as no loan transaction record remains for 2004.

Source: Chung, Won-Ho and Yeoin Yoon (2005).

Financial assistance for VCDP under the Employment Insurance System comprises two types: employer assistance and worker assistance. Table 31 outlines the assistance provided in 2004.

According to the above Table 31, the total subsidy provided by the VCDP initiative in 2004 based on MOL data is estimated at 525 billion won. Employer assistance amounted to 229.6 billion won, accounting for 43.7% of the total. Worker assistance amounted to about 295.4 billion won or 56.3% of the total, which is somewhat higher than that provided for employers. Support for the employed makes up only 15.5% of worker assistance, while training for the unemployed took up 40.9%. An examination of assistance provided for individual businesses shows that vocational competency development training received the bulk of the support at 37.8%, followed by re-employment training for the jobless, which accounted for 23.7%, with government commissioned training and worker tuition loan assistance accounting for 17.2% and 14.3%, respectively.

Support through the General and Special Accounts

Vocational Training supported through the General and Special Accounts includes: technician training, training in areas of high employment opportunities, vocational rehabilitation training, female heads of households training, and employment promotion training. Table 32 provides an overview of support provided.

According to MOL statistics, employment training and technician training account for 45.2% and 35.4%, respectively, of the total subsidy, which amounts to 117 billion won. Employment promotion training accounts for 10%, with other types of training making up less than that.

Table 32. Support for Vocational Training through the General / Special Accounts

(Unite: KRW 1 mil, %)

Classification	Amount	Percentage
Technician training	41,400	35.4
Employment Training (in areas of high employment opportunities)	52,847	45.2
Vocational rehab training	7,852	6.7
Female heads of households training	2,300	2.0
Employment promotion training	12,634	10.8
Total	**117,033**	**100.0**

Source: Chung, Won-Ho and Yeoin Yoon (2005).

V. Training and Learning in Enterprises

A. Overview of Corporate Training

Korean companies began to actively implement training and development programs in the late 1960s. In the initial years, they either invited foreign engineers to Korea to provide the training or sent their employees overseas to learn foreign technology.

Training expenses account for approximately 1.5% of the total labor costs of companies. However, there is a problem in assessing the level of corporate training simply on the basis of training investments. It is not only because it is difficult to estimate the amount of investment accurately, but also because in-house training, and informal training and learning, in particular, is very important for Korean firms.

According to a study by the Korea Labor Institute (2002), an annual average of 3.9 days was invested per worker in training and development. Planned OJT averaged another 4.6 days per year. The manufacturing firms, companies with trade unions, and larger enterprises tend to carry out lots of training and development programs (Table 33). The same survey also shows that 46.6 % of firms support training and learning by subsidizing their workers with tuition fees or education/training expenses. The percentage of companies that have paid training leaves also accounts for 36.4%. Once

Table 33. Training and Development Duration per Worker (2001)

(Unit: days)

		Off-JT	Planned OJT
All Industries		3.96	4.64
	Manufacturing	4.12	4.96
Trade Union	No	3.69	3.87
	Yes	4.49	6.13
Firm Size	Less than 100	2.79	1.97
	100~ 299 employees	4.37	5.98
	300 and above	5.95	8.94

Source: Korea Labor Institute (2002), Workplace Panel Survey

again, firms that are either large in scale or have trade unions are more likely to have such systems (Kim, Dong-Bae, 2004).

Whether or not a firm has a career development system is also important in terms of human resource development. Studies show that the number of firms introducing career development systems has continued to increase steadily over the last 15 years, the rate being higher among large enterprises and firms with trade unions.[27]

Since the Asian Financial Crisis, many companies have opted to hire experienced workers rather than to train and develop human resources internally. But at the same time, investment in human resource development programs such as self-development programs and lifelong learning programs are also increasing. Thus, the future of worker development can take on a very different picture depending on the strategic decisions made by the companies.

B. Corporate Training Budgets

1) Corporate Investment in Vocational Training

Vocational training investment by business organizations can be classified into two types based on the form of financing. The first is the per capita training cost relative to the total labor cost expended by the company.[28] The other type is the training cost per trainee financed by the VCDP budget of the Employment Insurance System.[29]

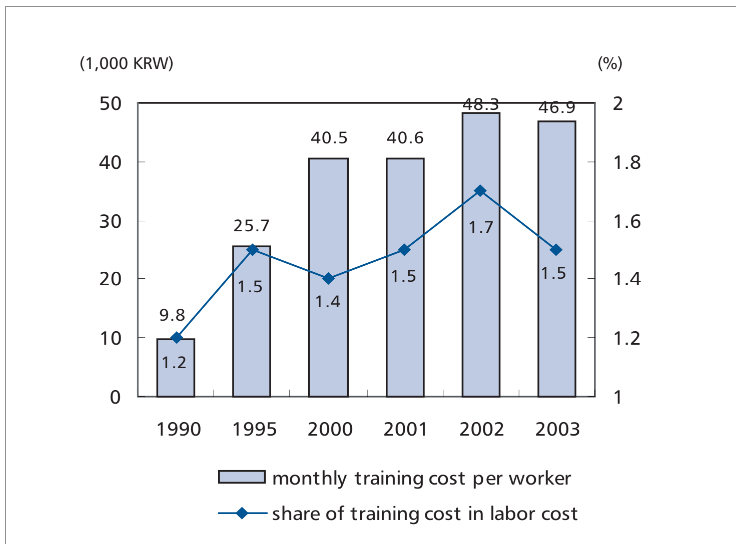
27 Korea Labor Federation (1987), Ahn, Hee-Tak (1996), and Korea Labor Institute (2000).

28 Education and training costs borne by businesses consist of investment in establishing facilities for worker training (schools not included), remuneration for instructors, and expenses for training commissioned to independent institutions. This is one of the fundamental indicators of corporate investment in HRD.

29 Training cost per trainee expended by the Employment Insurance System is calculated by dividing the total training cost of each type of training—training for the employed, training for the unemployed, and technician training financed by the general government account—by the number of trainees. The Training cost per trainee indicator shows that the amount of investment for different groups of trainees varies, and thus serves as an indirect indicator of the quality of vocational training investment. However, it should be taken into account that the period and contents delivered of each type of training vary. For example, training for the employed usually consists of classroom training of three days on average, while for the unemployed training takes on average three months. Finally, technician training takes more than six months on average. These differences should be considered in interpreting this indicator.

As of 2003, training investment made by companies per worker per month was estimated at 46,900 won, which is about 1.5% of the labor cost (Figure 5). By adding the subsidy for training the employed financed by Employment Insurance, which amounts to 12,300 won, it can be calculated that businesses are investing about 59,200 won per worker per month in training.

Figure 5. Share of Training Cost in Corporate Labor Cost



Source: KRIVET (2005). HRD Indicators.

There is a large difference between large enterprises and SMEs in the training cost expended per worker. In 2003, large businesses (headcount of 1,000 and above) spent on average 61,400 won per worker, medium sized enterprises (headcount 300-999) spent between 21,800 and 23,500 won, and small enterprises (headcount under 300) spent between 6,000 and 10,900 won.

Meanwhile, statistics on the average monthly training expenditure per regular worker by company size in 2003 shows (see Table 34) that there is a progressive trend of rising cost in line with company size, with the exception of firms with 300-499 workers and those with 500-999 workers. Especially, large corporations with more than 1,000 workers make substantially larger training investment than others. For example their spending would be about 25 times as large as the training expenses of the very small companies of 10-29 employees.

Table 34. Average Monthly Training Expenditure per Regular Worker by Company Size (2003)

(Unit: KRW 1,000)

Company Size (Number of employees)	Training Cost
10~29	2.6
30~99	6.2
100~299	10.9
300~499	23.5
500~999	21.8
More than 1000	61.4
All companies combined	46.9

Source: MOL (2004). Survey Report on Labor Cost of Enterprises.

Table 35. Training for the Employed Subsidies Break-up

(Unit: KRW million, person, percent)

Classification		Tuition subsidy	Tuition loan	Exam fees	Total subsidy	(%)	# of insured	(%)
Gender	Male	1,992	42,318	403	44,713	55.2	5,020,208	66.3
	Female	3,885	32,385	85	36,354	44.8	2,556,648	33.7
Age	15–19	2	146	-	148	0.2	69,924	0.9
	20–29	2,517	36,822	120	39,459	48.7	2,224,556	29.4
	30–39	2,093	31,082	267	33,442	41.3	2,593,264	34.2
	40–49	1,042	6,179	89	7,309	9.0	1,726,093	22.8
	50+	223	474	13	710	0.9	963,019	12.7
Education completed	Grade school and below	-	131	1	132	0.2	181,202	2.4
	Junior high school	-	223	6	230	0.3	478,676	6.3
	High school	1	26,515	171	26,688	32.9	3,670,354	48.4
	Junior college	3	13,678	93	13,774	17.0	1,068,873	14.1
	4-yr college	2,096	24,350	150	26,597	32.8	2,022,779	26.7
	Graduate school	3,778	3,446	7	7,231	8.9	154,972	2.0
	Others	-	6,359	60	6,418	7.9	-	-
	Total	5,876	74,703	488	81,067	100.0	7,576,856	100.0

Source: Chung, Won-Ho and Yeo-in Yoon (2005).

Table 35 shows the budget breakdown for subsidizing training for employed workers. The total budget is about 81 billion won. Male trainees accounted for 55.2% of this spending, while women accounted for only 44.8%, a gap of about 10%. However, this gap is actually smaller than that between the number of insured men and women, which is 33%. This means that of employed workers, men benefit less from the training subsidies than women.

The support is concentrated in two age brackets. The bracket of those in their 20s accounts for 48.7% and those in their 30s for 41.3%. Considering that these groups each make up only 29.4% and 34.2% respectively of those insured by Employment Insurance, they are receiving a disproportionate amount of support.

By educational level, those who have completed high school and college receive 33% of the support each, or 2/3 combined. People with an associate degree comprise a relatively large group making up 17%, and groups with low education levels, grade school or below and junior high school, account for a meager 0.2% and 0.3%, respectively. However, when the percentage of the insured population is considered, those who have completed high school education and those with even less education receive less support, while those who have had a higher level of education receive greater support.

C. Training in Large Firms (Case of Hyundai Motor Co.)

Large companies provide workers with different types of training, such as management training (target group specific training), on-the-job training, training for new recruits, foreign language training, special training and cyber education. Training courses are delivered at their own training institutes, which mostly carry out training for managers, and training centers established in each production plant to deliver institutional training for working-level staff. In addition to these, there are Plant Innovation Centers in each factory, which have been set up to offer various quality management programs and non-formal training.

Target Group Specific Training

Target group specific training is organized into six program areas, namely management, R&D training, production, sales, maintenance and repair, and quality. Target group specific training is offered to engineers and technicians in the production sector, who are further segmented into groups by the number of years they have served in the company ranging from newcomers,

workers in their second year, the third year, and so forth to those who have worked for 15 years and above. Workers are also categorized by their rank, for example into groups of *jojang* (group leader), *banjang* (team leader),[30] and technicians/Grade 4. Training contents are systematically planned and differentiated for each group.

A notable characteristic of target group specific training is that it emphasizes corporate ethics. Each production worker must receive special training in corporate ethics for a set number of hours per year. The management believes that the majority of production workers have acquired sufficient level of work-related knowledge and skills through years of experience. The challenge is, therefore, to motivate these skilled workers to be more willing and illustrious in the workplace, and to do so the management sees it necessary to bring about a change in the workers' attitude towards work through corporate ethics training.

Both *jojang* and *banjang* are given leadership training, and the former are obliged to complete the TWI-A program and the latter an introductory course on workplace management. Professional skills training is provided to skilled workers who have served for 15 years or more, and the jojang and banjang. Managers (Engineer Grade 4) and new entrants Grade 4 are given the opportunity to participate in a manager training course. In the engineers' training course, a creativity development course, professional skills training, and interpersonal skills training course are included.

Professional Skills Training

Professional skills training began in 1999 as a combination of a morale program and skills training targeting workers who were candidates for promotion. According to Table 36, professional skills training is offered to those who have worked for 15 years or more and are qualified to become an Engineer. This system obliges a worker who has reached a certain number of years in employment to participate in mandatory professional skills training and upon its completion to climb up the career ladder. Candidates for the position of Engineer (Grade 4) as well as those waiting to become Assistant Managers (Technical Assistant Manager, Grade 3) or Managers (Manager Grade 3) all receive professional skills training in the same manner.

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30 In Production Section of firms in Korea, a team (*ban*) is made up of smaller groups (*jo*). A jo consists of seven to eight workers under the supervision of the *jojang* or group leader. Two to three *jo's* make up a ban.

Table 36. Scoring Guideline for Promotion

Job Classification	Score Distribution	
Administration and Technology (Staff level)	Training outcome Work performance Automobile Structure Total	5 points 10 points 5 points 20 points
Administration and Technology (Assistant Manager level)	Training outcome Work performance Paper assignment Total	5 points 10 points 5 points 20 points
Plant worker	Training outcome Work performance Attitude Total	5 points 10 points 5 points 20 points

Source: Jo, Hyung Je (2004).

Each participant in the training is evaluated according to Table 36 and the results are considered in deciding promotions. Grades received from the training and from performance evaluations are added and candidates in the top 15% based on this total score are promoted. Trainees can apply for a retest when they are unsatisfied with the grade received from the training program.

In the early 1990s, when the introduction of a Skill-based Pay System based on skill qualification was indefinitely postponed, Hyundai Motors launched in its place a Skill-based Promotion Program. The Skill-based Promotion Program separated the role of Team Leader from its position in a bid to expand promotion to the Engineer position (Table 37).

The professional skills training in actuality was not carried out in a way that linked promotion to skill formation as was originally intended. The agreement signed by Hyundai Motors and the labor union sheds light on

Table 37. Skills-based Promotion System at Hyundai Motors

Position	Qualification to be considered for promotion to Engineer
Team Leader	Must have served as Team Leader for more than 1 year in the last 4 years
Group Leader	Must have served as Group Leader for more than 2 years during the last 4 years; and must have worked more than 10 years
Group Member	Must be a worker who gets paid by the hour; and must have worked more than 15 years
Group Member	Must be working outside the plant (e.g. Headquarters, Mabook, Namyang, Research Center); and Must have worked more than 5 years

Source: Jo, Hyung Je (2004).

why this came to be so. According to the 1999 document, workers who had been employed for 19 years or more were to be given the right to apply for the promotion test. 70% of those who applied were to be promoted to a higher position. This was done as a way of adding elements of Skill Qualification System (SQS) so as to facilitate the promotion of workers who were qualified and waiting for their step up the career ladder. At the time, however, the personnel management bottleneck had been reduced substantially and candidates for the Engineer position were automatically raised one level. The labor union welcomed this non-competitive promotion scheme and consequently demanded a similar system for those who had worked for a smaller number of years. Expanding the promotion opportunity for plant workers in this way did not involve competition, and so the labor union had little reason to oppose it (Interview, 2003).

The Skill-based Promotion Program, in summary, was introduced in the late 1990s to award and recognize employees who had improved their skills through training programs. However, the elimination of competition from the promotion process has made it difficult to keep the skills-based promotion program achieving its intended goal. It is now a mere tool for dealing with personnel management bottlenecks by promoting workers. Because with time everyone gets promoted, the evaluation of training performance has little positive influence on the learners. So the workers who first protested against the evaluation of training outcomes eventually saw little reason to do so, and since then labor and management have continued with this training program without much conflict.

According to Table 38, more than 21,000 plant workers completed professional skills training from 1999 to 2003. Considering that there are 23,592 union members (including those in the assistant manager level), and that plant workers on average have worked nearly 15 years, we may expect that soon most workers will be receiving this form of training. However, the

Table 38. Participation in Professional Skills Training at Plant A

Year	Number of Target Learners	Number of Participants	Program Length
1999	8,524	7,863	4-5 days
2000	3,832	3,648	4-5 days
2001	4,115	3,993	4-5 days
2002	3,073	2,985	4-5 days
2003	3,144	2,792	3 days
2004	1,172	-	2 days

Source: Hyundai Motors, 2003. Internal document

table shows that the program, which was originally 4 to 5 days long, has shrunk in duration. The content of the training is also scheduled to change from being task-focused to morale-focused. It is said that the newly appointed chief supervisor of the plant puts morale before task-related training.

Hyundai Motors has only partly adopted elements of SQS. This is evident in the way professional skills training, in the form of Off-JT, is provided for candidates eligible for promotion. The company had good intentions when it sought to enhance the skills of its employees by reflecting training outcomes in the promotion process. However, it is impossible to train people in the intellectual skills that are needed in a flexibly automated work environment through short-term Off-JT without systematic OJT to complement it. Moreover, promoting workers based on the length of service to the company with little regard to evaluation results naturally fails to motivate workers. The recent changes in the training program – i.e., shortened length of skills training and replacement of professional skills training with morale workshops – lead one to doubt the commitment of Hyundai Motors to encourage skill formation among its workers.

Job Skills Training

Job skills training for production workers is divided into four areas: automobile manufacturing, plant automation, automobile engineering, and IT (Table 39). Most of the training is provided not only to the employees of the company but also those of partner firms.

According to the training plan for 2004, the number of participants for each of the four areas was: Automobile Manufacturing (1,915), Plant Automation (2,153), Automobile Engineering (2,690), and IT (1,699).

The courses were 3-5 days long (or between 22-40 hrs), and class sizes ranged from 9 to 30 per session. Each program was offered several times during the year to make it easier for workers to participate when they felt the need for training.

Types of Skills Formation

Large corporations in Korea are more reliant on their own vocational training programs, and OJT especially, for human resource development, than on public vocational training. This is quite similar to the situation in Japan where the state plays only a marginal role in skills formation in businesses. The education system and the employment system are not structured on the basis of professional job categories. Job categories, which refer to a specified set of skills qualifications and a particular domain of work responsibilities,

Table 39. Job Skills Training Program

Program	Course	Course
Automobile Manufacturing	* CATIA * Quality management basics * Precision measurement * Machining center * CNC lathe	* Press die * Reading drawings * Laser beam machining * Press material welding * Improving quality of automobile body welding * Special welding
Plant Automation	* Pneumatic system maintenance * Pneumatic/electric control * Hydraulic control * Electrical and electronic engineering * Inverter control * Digital control * PLC	* GP programming * GOT programming * MELSEC-NET * SIEMENS-PLC * Robot technology * YASKAWA Robot Technology * Plant Automation
Automobile Engineering	* Automobile structure * Electronic engine control * Electronic chassis control * Automatic transmission	* Automobile powertrain application * Car chassis * Car master repair intermediate level
IT	* Computer data processing application * Information utilization * Power point * MS word	* Excel * Visual Basic * Excel VBA

Source: Hyundai Motor Co. Ulsan Education Team (2004).

cannot be found in either the training system or the employment system. Unlike Western workshops, job tasks are not clearly categorized and consequently there is no performance-based wage system. Skills are valuable to the industry, but they do not have exchange value in the labor market. Skills formation is focused on the social context of the particular task rather than on professional expertise. The corporate culture substitutes for diversity of cultures in specific job categories, while instead of standardization of labor and training there is the firm's own organization and skills structure. Career is more important than learning. The worker's identity based on job categories is obliterated by loyalty to the company. The relationship among role, career and wage varies greatly from company to company. Even within the same company, this relationship is neither clearly nor consistently defined. The primary goal of education and training is not the integration of knowledge and competency but the acquisition of multiple skills specific to a situation (Jung, Sung Gug, 2004).

On-the-job training is the most vigorously pursued form of skills formation among many different types that take place in the automotive companies. Because much vocational training is provided on site in the workshop, OJT is primarily focused on satisfying the demands of the enterprise. OJT is a form of vocational training that takes place as the worker participates in the production process. For this reason, it is carried out in a natural work environment in a relatively unorganized and unofficial manner and is not open to the public. The production process varies between industries, enterprises and even within the same team in a workshop. Because OJT is conducted in stages in keeping with the level of training required in a particular part of a workshop, it varies according to the special features of each step in the process and the particular job task. OJT cannot be readily formalized and organized because the job tasks and technology are constantly evolving. There is no set content to be covered in OJT and no formal textbook exists to serve as learning material. Learning content and knowledge are not closed, and are dependent on the personal and social contexts. With the exception of a special segment of Off-JT, there is practically no dividing line between labor and skills formation (Jung, Sung Gug, 2004).

a. Job Rotation

In the case of Japan, skills formation through OJT is largely dependent upon the tasks that the individual has taken on in the course of his/her career. Assigning workers to a job category is done by promoting or transferring a person, or giving the worker a certain post in the workshop. The most efficient method of skills formation in such a setting is OJT, and flexible job assignment makes OJT-focused skill formation possible. Skills formation through OJT is dependent on the worker's career, which is decided by job rotation, promotion and transfer. The job rotation system, in principle, involves a transfer to a closely related job category or to a post in a nearby section in the workshop. Under the system, performing the current job serves as training for the next job, and in this way economic returns on training investment are guaranteed (Jung, Sung Gug, 2004). At Hyundai, however, job rotation is not systematic and the promotion opportunities for assembly workers are very limited. The job rotation cycle in the engine plant varies depending on the features of the particular manufacturing line, but on average it is about six months.[31] The company adopted job rotation

[31] In some machine work, job rotation occurs every three months, Automaker B also rotates jobs once every three months, but not for the same reason as Hyundai, which was to systematically foster multi-skilled workers. In Automaker B's case, the three-month cycle was adopted because after three months workers begin to lose their familiarity with the tasks they had performed earlier (Jung, Sung Gug, 2004).

as a policy primarily because the workers demanded it, not because it is the company policy to develop multi-skilled workers.[32]

b. Training Multi-skilled Workers

"Multi-skilling" is needed to effectively respond to the following internal and external environmental factors: demand for greater functionality due to sophistication of facilities, consumer demand for higher quality, increased volatility of demand, increased prevalence of musculoskeletal disorders, and the need for greater flexibility in filling up vacancies.

When a training policy of multi-skilling is pursued, the following factors need to be kept in mind: (1) standardize and streamline the work process to allow each worker to perform different tasks; (2) train the leaders, i.e., *jojang* and *banjang*, before others; (3) standardize work (provide work guidelines or manuals as necessary); (4) provide adequate incentives to skilled workers who are multi-functional; and (5) progress gradually and systematically according to the skill level of workers.

A multi-skilling table (a table that shows the level of multi-skilling of each production worker) can be used as a tool to manage the process. The table is used to record the degree of multi-functionality of individual workers as well as the entire workshop. It is a tool that makes it easy to set targets for education and training, and to assess the progress made by individuals and at different stages of the manufacturing process.

c. Informal Learning

In many Korean factories, informal learning is one of the major channels of skills formation, and the Hyundai automobile plant is no exception. Many forms of informal learning take place, but two types are particularly of significance in the Hyundai case: OJT conducted by superiors and learning by doing.

Like other domestic conglomerates, Hyundai hires people who have graduated from vocational or general high schools with good grades. These recruits participate in a short-term training program organized by the vocational training center. This short-term training is designed to help the newly-employed to become an accepted member in the workplace. The aim is not to teach professional skills. After the initial training, the newcomers are assigned to various steps in the production process, and only then does real skills training take place in the form of OJT.

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32 Awareness of muscular and skeletal problems caused by work has led the workers to demand job rotations to reduce fatigue that results from repeated use of certain parts of the body. This is one of the key reasons for adopting job rotations.

The newly recruited worker in the engine plant first follows his supervisor, who will point out for him the areas requiring special attention to safety and explain about the facility layout, the product, and the quality monitoring procedure. Then, the newcomer will move on to the next phase in training, which will usually be conducted by his/her senior. There is no standardized form of training for machine work so the newcomer must follow the senior around watching and learning how experienced workers solve and prevent problems. The senior worker will teach the newcomer by repeating the steps, and this demonstration-oriented training will go on for about a month. Having carefully watched the senior for a number of weeks, the newcomer is now ready to do some learning by doing. The new recruit is assigned to perform tasks under careful scrutiny of the superior who will check his/her output. After a month of this closely supervised learning by doing, the new worker is finally given his/her first assignment in the machining process where he will mature into a skilled machine worker.[33] (Jung, Sung Gug, 2004)

d. Learning Station

Another important method of learning at the Hyundai factory is training in the learning station. Each department in the plant has a room attached to it for training in quality, safety, company policy, TPM, etc. Safety training takes place twice a month while other training programs are conducted irregularly when there is time to fit them in. The quality training program tends to be more frequent than others. Quality training includes solving problems that occur, preventing the same problems from happening again, and raising the worker's quality awareness (Jung, Sung Gug, 2004).

D. Good Practices of Lifelong Learning Companies

Lifelong Learning Groups at Yuhan-Kimberly

Yuhan-Kimberly is the market leader as of 2005 in household and hygiene products. Kook-Hyun Moon, the CEO, attributes much of the company's success to lifelong learning groups, which helped employees aspire to become knowledge workers through lifelong learning. The lifelong learning group

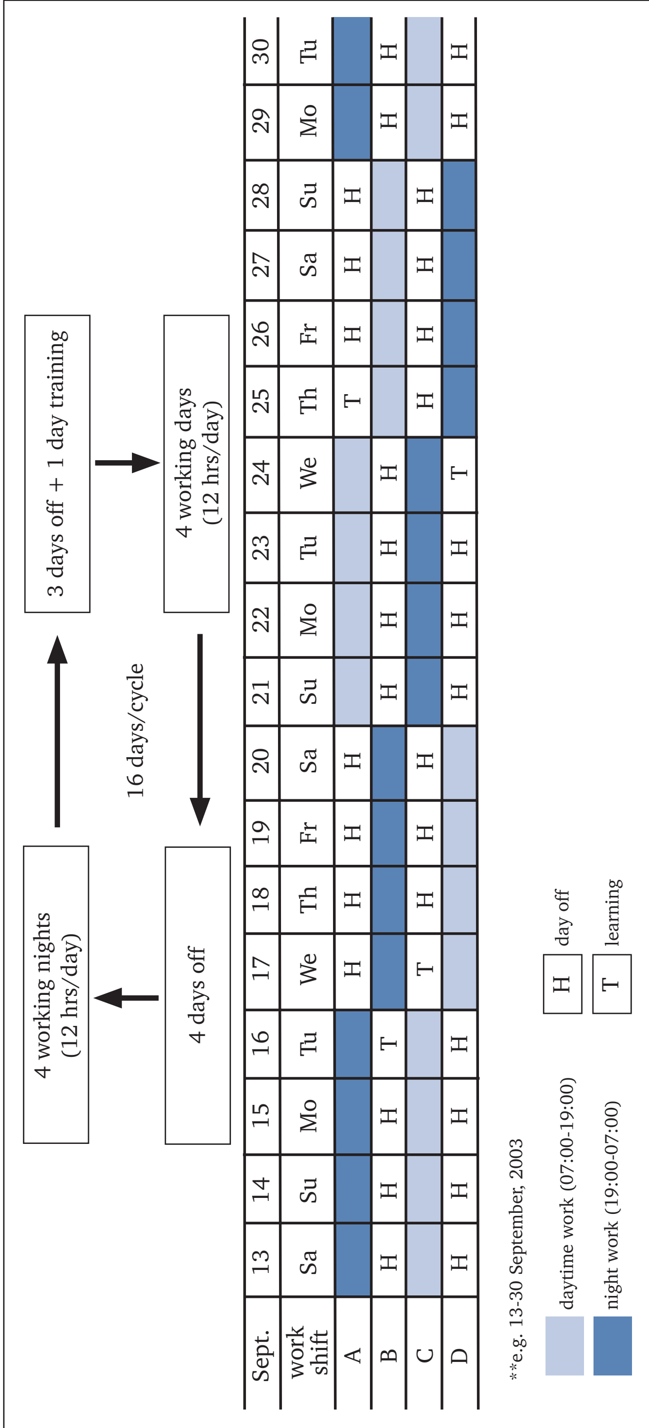
[33] It takes about three years for a new recruit to become a skilled machine worker, meaning that he or she can be trusted to perform a task assigned in the workplace. One interviewee went so far as to say that it takes ten years for a worker to receive compliments for an excellent performance.

model illustrated in Figure 6 shows four groups on two shifts. All the departments with the exception of those serving back office functions are organized according to the model. While two groups work for 12 hours each covering a whole day, the other two groups can take the day off or engage in learning. These groups are on a 16-day work cycle, which begins, for example, with four working nights followed by three days off and one day of training after which they begin the next week working four days during daytime and taking off the following four days. Of the eight days off work, the employee can spend one day engaging in optional training provided by the company, and it is counted as a paid day. The remaining three days are used at the discretion of the employee, who may either choose to relax or receive training.

The lifelong learning group model at first glance may seem like one way of dividing work among the staff. The Yuhan-Kimberly model, however, is different in that it allows for broad learning opportunities. Based on the lifelong learning group model, the employee engages in roughly 300-350 hours of Off-JT on average a year. Add in the OJT, and the total hours of training exceed 500 hours. This, indeed, is a huge investment in training. Currently, the weekly rate of participation in training is around 78%. If a worker receives one day of training, it will be recognized as working on a holiday. Over 95% of the staff education is in the form of a workshop in which in-house instructors, employees with the relevant expertise, and trainees engage. Depending on the subject, a lecturer or instructor is invited from outside of the organization. Broadly, training is divided into that which deals with subjects directly relevant to work and those with little relevance to actual work.

The ultimate goal of the Yuhan-Kimberly approach to lifelong learning is to develop workers into knowledge workers "with hands, a head and a heart." To do so, the company does not limit staff education to subjects with immediate relevance to work. In fact, learning at Yuhan-Kimberly involves a variety of subjects in humanities and culture, and even some volunteer work in the service of others. Naturally, the training programs include both formal and non-formal learning. Job skills training, which accounts for 60% of the training at Yuhan-Kimberly, covers many subjects that will help employees be more productive at work. For example, employees are taught to operate machines and to understand their workings. Training also covers the current state of the company in terms of business performance. Employees are instructed in computer skills and maintaining safety and quality. There are team workshops as well. The remaining 40% of training covers a variety of fields and subjects, which are not immediately relevant to work, such as: English, reading, leadership, music and films, and even

Figure 6. Lifelong Learning Group Model at Yuhan-Kimberly (4 groups 2 shifts)



Sept.	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
work shift	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu
A					H	H	H	H					T	H	H	H		
B	H	H	H	T					H	H	H	H					H	H
C					T	H	H	H					H	H	H	H		
D	H	H	H	H					H	H	H	T					H	H

Source: Joo, Yong-kook (2005).

volunteer activities. Most of the professional job skills training is organized in a workshop format, and the focus is not to transfer expert knowledge or skills but to help participants to analyze the cause of problems and to solve them on their own. As people from all functions of the company take part in the workshops, participants are able to see the big picture of how the company operates and to exchange the knowledge they have. The subjects of training are chosen in advance by identifying problems at work, but can be adjusted flexibly. If there is no particularly urgent issue, the daily logs are reviewed based on which participants are able to discuss ways on how to improve quality. In more than 90% of the case, team leaders, in-house instructors who have actual working experience in the factory, specialists, and engineers instruct and lead the workshops.

The management and HRD officers of Yuhan-Kimberly have endeavored to disseminate the lifelong learning group model through consultancy provided to public organizations and private companies. These efforts contribute to setting a virtuous cycle of learning leading to more stable employment, which in turn promotes learning. The continuation of the virtuous cycle creates the potential for lifelong learning opportunities for all.

Pohang Steel Corporation (POSCO)

POSCO decided to introduce a lifelong learning system as it shifted to a 40-hour work eek as was decided at the Q3 2004 Labor-Management Council meeting. POSCO set guidelines for such a system based on joint research involving its HRD Center, HR department, and independent institutions. While other companies rushed to develop learning programs soon after announcing their decision to pursue lifelong learning systems, POSCO first conducted research to adopt a vision and strategies before declaring its intention to pursue such an initiative. With such a sound start, POSCO may turn out to be one of the quickest in successfully setting up and stabilizing a system of lifelong learning.

a. Objectives

The goal of promoting lifelong learning as viewed by POSCO is to maximize corporate value by achieving a healthy mix of life, work and learning, and to help workers develop themselves towards their individual goals. In other words, it seeks to develop a new mechanism and paradigm in which learning continues throughout one's lifetime.

b. Internal assessment of level of learning

POSCO has evaluated the level of learning taking place in its organization using the Dimensions of Learning Organization Questionnaire (DLOQ) developed by Dr. Victoria Marsick of Columbia University. The results show that while learning opportunities, compensation for performance, and the relevant systems were good, POSCO's system of lifelong learning fell short in certain key areas, such as field-oriented learning promoted by example-setting leaders. Moreover, the DLOQ found that the average training time an employee spent in learning in 2004 was relatively high at 322 hours, but that these hours were spent mostly in e-learning. In fact, as many as 34% of POSCO employees in 2003 received no training in a conventional face-to-face group setting, though in 2004 the figure declined to 16%, which was still relatively high. This indicates that the training accessibility gap between workers can be quite significant (Joo, Yong-kook, 2005).

c. POSCO's Lifelong Learning Model

The POSCO lifelong learning model aims to help workers achieve more in their life, work and learning. It focuses on providing learning opportunities that are field-oriented and customized to the needs of the employee. At the same time, the model encourages leaders in the organization to set examples and promotes learning support for staff.

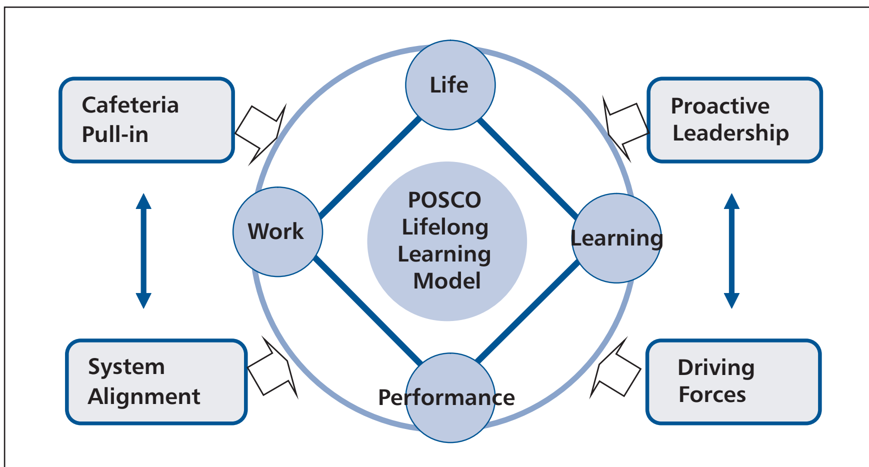
Under the POSCO lifelong learning model, lifelong learning days are set in order to ensure all employees can access learning opportunities to a certain degree. At the same time, the model develops programs driven by the demands of the staff. Learning is promoted by the managers who set examples and the workers who voluntarily participate. Ultimately, the model aims to improve the quality of life for the employees and strengthen the organization.

As for lifelong learning days, labor and management agreed to set aside between 5-10 working days per year for employees to engage in learning. Based on this decision, POSCO has allowed departments to exercise their discretion in determining the number of learning hours by considering available resources and requests from the staff. Each department can set one working day as a learning day to allow for organized learning. In the case of workers on work-shift arrangements, for whom it is difficult to set aside learning time, the company plans to allow the relevant department to be more flexible in managing learning time (Joo, Yong-kook, 2005).

Programs can be divided into three categories by the nature of contents delivered: Culture, Corporate Value Sharing, and Job Skills Enhancement. Reflecting the wishes of the staff, cultural programs are conducted in a comfortable setting, similar to cafeterias where people can engage in conversation in an easy manner. The Corporate Value Sharing programs

are focused on helping employees understand business management and on promoting trust between labor and management. To this end business performance presentations are held to keep the employees in the know about the state of business. Other programs in the Corporate Value Sharing category include Six Sigma and Change Management. The third category, which is Job Skills Enhancement, introduces the concepts of super operator and multi-player to motivate workers to aspire to such. Each department can choose the particular job skills to enhance based on the relevant new technology or the flow of manufacturing or machining process involved.

Figure 7. POSCO Lifelong Learning Model



Source: Joo, Yong-kook (2005)

In order to stabilize field-oriented lifelong learning, POSCO has institutionalized collaboration between the labor-management council and the HR and Training Department. POSCO is reviewing the idea of creating a team exclusively devoted to supporting lifelong learning in the Operation and Maintenance Department. There is also a plan to have the HRD Center organize an instructor training course, develop a lifelong learning portal, and strengthen learning management consultancy. POSCO hopes to actively support the lifelong learning of business teams by reinforcing the learning infrastructure. In 2005, POSCO sponsored the Seven Habits Program, which employees showed a strong preference for, as a part of a strategy to promote participation by organizing lectures in subjects not directly related to work.

One of the major features of POSCO's lifelong learning initiative is the effort it has made to spread its culture of lifelong learning to its partners. POSCO in fact selected two of its partners, Hanjin Enterprise Co. Ltd. (full-

time based) and Young Nam Industries (shifts based), and plans to analyze the current status and quality of learning among its partners using its corporate value-sharing program Six Sigma and develop distinct models for each company. The New Paradigm Center and POSCO HRD Center will collaborate in analyzing the characteristics of tasks, work environment, and current training practices of each partner company and develop a lifelong learning model customized to their needs. The project is expected to take about two months. After the pilot project is completed and a system of lifelong learning has been implemented for some time, POSCO plans to expand this initiative to other partners.

VI. Qualification and Standards

The best means to evaluate or appraise one's educational performance in Korea is through the academic degree system. A vocational qualification system is also being managed and operated to complement the academic degree system. Korea's vocational qualification system is separate from the academic degree system. It is one of the means to evaluate and identify an individual's vocational capability. The vocational qualification system was long managed by the government. However, the Basic Act on Qualifications in 1997 paved the way for the private sector to develop a private vocational qualification system.

Other lifelong learning recognition systems in Korea include the credit bank system, the self-learning system, and the education account system. Degrees and qualifications are being linked to promote lifelong learning. In other words, if an individual obtains national qualifications or publicly authorized private qualifications or private certified qualifications, he or she can get a credit exemption towards the requirements needed for acquiring an academic degree.

In summary, Korea's national qualification system includes the academic degree system, the vocational qualification system, and other recognition systems. This chapter focuses on the vocational qualification system.

A. Historical Development of Vocational Qualification System

The vocational qualification system in Korea has gone through four major phases since 1958. The first (1958-1972) can be summed up as the distributed management of the qualification system and it occurred before the enactment of the National Technical Qualification Act. Since the late 1950s, office management qualification examinations had been administered by the private sector, while technical qualifications had been managed separately by industries since 1958. In 1967, as integration of technical qualifications began, the Technical Examination System was established in accordance with the Vocational Training Act.

The second phase created the integrated management of the qualification system. The enactment of the National Technical Qualification Act in 1973 allowed the integrated management of all technical qualifications. The Korea Technical Examination Corporation under the Ministry of Science and Technology administered technical qualification examinations. Based on this system, the Korean government improved qualifications and the morale of engineers and technicians, enhanced the social status of engineers, and maximized the effectiveness of the engineering workforce. In addition, the Korean government was able to meet the needs of industries by improving technical education and the vocational training system. Ultimately, the Korean government could secure and maximize a quality technical workforce to effectively support the advanced industrialization policy of the 1980s.

The third phase (1982-1996) brought about an expansion and reinforcement of the National Technical Qualification System. With the amendment of the National Technical Qualification Act in 1981, the responsibility to manage technical qualifications was transferred from the Ministry of Science and Technology to the Ministry of Labor, and the Korea Technical Examination Corporation was consolidated into the Korea Vocational Training Management Corporation. Also, the Technical Qualification System Review Committee was established, private technical qualifications were prohibited, similar examinations were restricted, preferential treatment was offered to people with technical qualifications under the law, cheaters were not allowed to take examinations for the following three years, and penalties related to the qualification system were increased.

In 1983, service-related qualifications were added to the existing system. In addition, complementary education was provided, examination exemption for some subjects was permitted in selected cases, re-registration became a must after a certain period of time, people with technical qualifications were given preferential treatment when wanting to open a business, and eligibility was expanded. In 1995, 19 technical qualifications for multi-skilled engineers were newly created in accordance with the Enforcement Ordinance of the National Technical Qualification Act.

The fourth phase (1997-the present) can be described as a role-sharing period of the qualification system. In this phase, the vocational qualification system has been diversified. A publicly authorized private qualification system was introduced with the enactment of the Basic Act on Vocational Qualifications in March 1997. The National Technical Qualification System integrated engineering and technician fields into one while simplifying eight levels into five.

Furthermore, the number of required years of industrial experience as an application requirement was reduced in order to give more weight to industrial experience rather than to academic degrees. In addition, the government increased fines levied on private organizations administering examinations similar to national ones.

B. Management of Vocational Qualification System

Korea's vocational qualification system is divided into a National Vocational Qualification System and a private vocational qualification system. National vocational qualifications can be divided into "National Technical Qualifications" managed by the Ministry of Labor in accordance with the National Technical Qualification Statue, and "National Qualifications" managed by each government ministry based on relevant laws. There are currently 575 national technical qualifications and 118 national qualifications.

Private qualifications are divided into publicly authorized private qualifications (51 items) and private qualifications governed by private organizations (approximately 500 items). Private qualifications include in-house qualifications provided for employees by employers. Forty-nine in-house qualifications are now supported and approved by the Ministry of Labor.

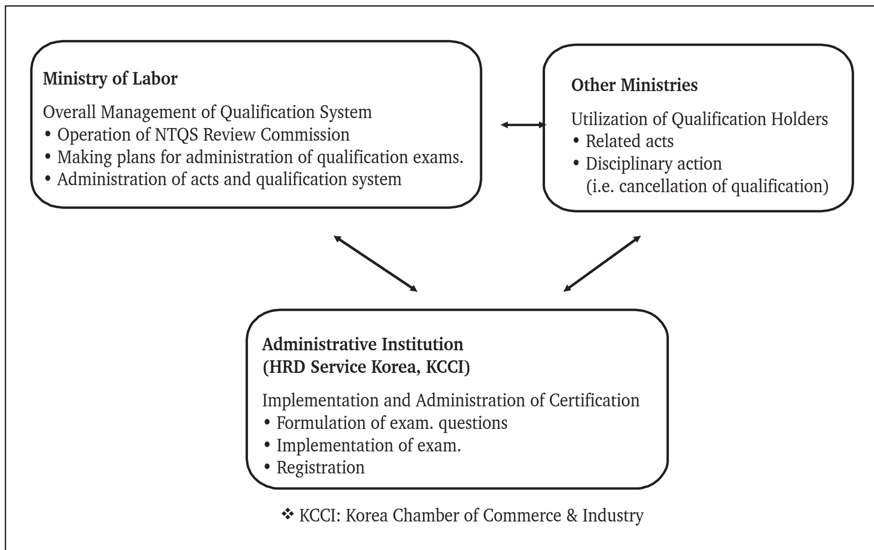
Matters related to the operation of the National Technical Qualification System, such as creation, consolidation, and cancellation of qualification levels and items, standards and methodology of examinations, examination subjects, adjustment of examination administration, development of

Table 40. Vocational Qualifications in Korea (as of March 2005)

Type		Number of Qualifications	Relevant Law	Administrator
National	National Technical	575	National Technical Qualification Act (MOL)	19 ministries (2 organizations)
	Other National	118	Applicable Laws	13 ministries (67 organizations)
Non-official	Private	Approx. 500	Basic Act on Vocational Qualifications (MOE&HRD)	Approx. 100 Organizations
	Publicly authorized	51	Basic Act on Vocational Qualifications (MOE&HRD)	31 organizations
	In-house	49	Act on Promoting Workers' Training (MOL)	15 companies

Source: Dong-Im Lee (2005).

Figure 8. Operation System of the National Technical Qualification System



Source: Dong-Im Lee (2005).

Table 41. Breakdown of National Technical Qualifications Issued

(Unit: person)

	Total number of NTQs	Professional Engineers	Master Craftsmen	Engineer Craftsmen	Technician	Craftsmen	Assistant
1990	225,322	511	72	16,617	20,784	179,952	7,386
1991	257,122	664	93	18,170	23,708	202,899	11,588
1992	314,494	1,046	182	18,287	33,982	251,224	9,773
1993	337,605	1,035	435	29,307	38,092	257,597	11,139
1994	357,072	1,073	525	32,016	49,735	258,973	14,750
1995	389,055	2,576	374	36,343	51,276	279,828	18,658
1996	416,198	2,018	501	36,589	53,367	306,534	17,189
1997	477,737	2,333	373	46,555	50,687	363,939	13,850
1998	517,726	2,504	473	54,603	59,545	380,928	19,673
1999	613,527	2,168	655	64,257	62,180	473,968	10,299
2000	540,215	1,984	703	48,667	55,509	421,442	11,910
2001	550,995	1,638	741	49,300	54,040	432,412	12,864
2002	484,908	1,387	837	62,451	58,395	360,534	1,304
2003	481,225	1,222	1,112	70,107	61,687	346,919	178
2004	497,417	1,171	1,459	83,930	71,010	339,711	136

Source: HRD Korea (1990-2004). Annual NTQ Statistics.
NSO (1990-2004). Statistical Indicators of Korea

Table 42. National Qualifications Items by Government Ministry

Ministry	No. of Items	National Qualification
Ministry of Construction and Transportation	15	Appraiser, architect, certified realtor, transportation safety manager, logistics, manager, business car driver, transportation car driver, chauffeur, aviation factory repairman, operation manager, aviation transportation controller, aviation engineer, aviator, aviation repairman, housing administrator
Ministry of Science and Technology	7	Special license for radioactive material handler, general license for radioactive material handler, radioactive emergency supervisor, license for nuclear reactor operation supervisor, license for nuclear reactor operator, license for nuclear fuel material treatment supervisor, license for nuclear fuel material handler
Ministry of Education Education and HRD	8	Teacher, assistant teacher, specialized counseling teacher, librarian teacher, practical skill teacher, health teacher, nutrition teacher, lifelong education teacher
Ministry of Labor	4	Certified labor affairs manager, industrial safety instructor, industrial hygiene instructor, vocational capability development training teacher
Ministry of Agriculture and Forestry	8	Livestock artificial fertilizer, auctioneer, veterinarian, traditional food expert, farmland adjustor, fisheries and agriculture quality manager, forestry civil engineer, forestry engineer
Ministry of Culture and Tourism	12	Sports instructor, physical trainer, librarian, domestic travel guide, tourist, guide, hotel manager, hotel administrator, hotel service technician, juvenile instructor, stage art expert, cultural property repair engineer, cultural property technician
Ministry of Justice	2	Lawyer, judicial scrivener
Ministry of Health and Welfare	28	Nurse, assistant nurse, physical therapist, radiologist, health educator, social worker, optician, massagist, pharmacist, nutritionist, hygienist, rescue worker, medical recorder, medical engineer, doctor (specialists included), artificial limb engineer, clinical technician, operation therapist, mental health nurse, mental health social worker, mental health clinical psychologist, mid-wife, dental technician, dental hygienist, dentist, oriental pharmacist, oriental pharmacy business manager, oriental medical doctor
MOCIE	5	Certification examiner, distribution manager, management instructor, technical instructor, patent lawyer
Ministry of Finance and Economy	5	Public certified accountant, tax accountant, brewer, customs accountant, bond accountant
Ministry of Information and Communication	2	Amateur radio engineer, radio communications engineer
Ministry of Maritime Affairs and Fisheries	13	Weigher, appraiser, inspector, engineer, pilot, small vessel operator, operator, medical administrator, dangerous article-loaded vessel crew, lifeboat operator, navigator, communicator, water disease administrator
Ministry of Government Administration and Home Affairs	5	Administrator, security guide, driving skill examiner, driver's license administrator, fire-fighting facility manager
Fair Trade Commission	1	Franchise transaction counselor
Financial Supervisory Commission	3	Insurance accountant, insurance agent, damage appraiser
Total	**118**	

Source: Lee, Dong-Im (2005).

preferential treatment for people with qualifications, development of examination systems, exception criteria for pass/fail decisions, private commission of technical qualification examinations, and certification of private technical qualifications, are reviewed by the Technical Qualification System Deliberation Committee (an advisory committee to the Minister of Labor).

The National Technical Qualification System covers 27 fields, including machinery, steel, architecture and hygiene, and 575 items. In particular, mechanical (107 items) and steel (44 items) qualifications account for about 26% of all qualifications.

National Qualification Items

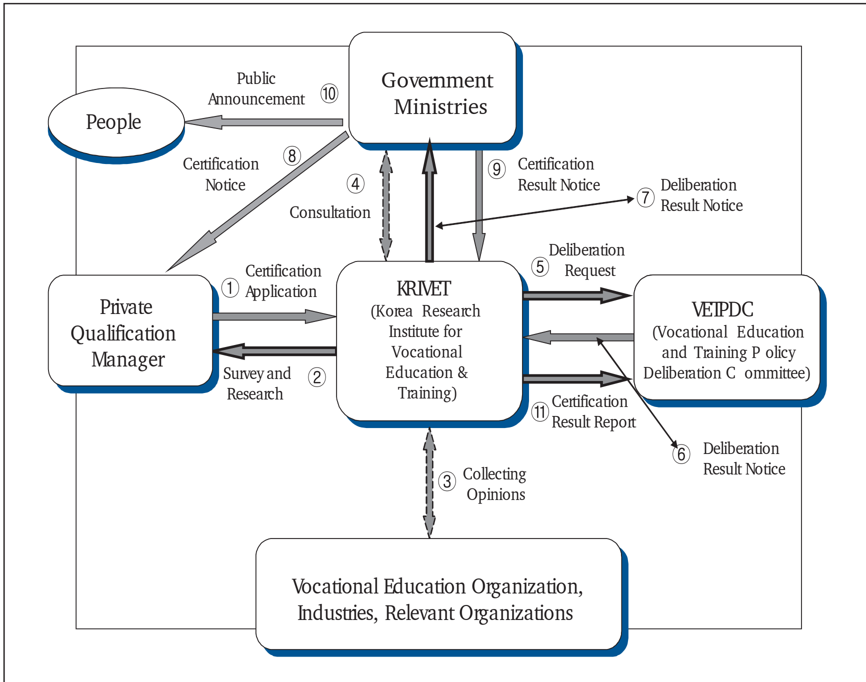
There are a total of 118 items in national qualifications, which are managed and governed by 25 government ministries and committees. National qualifications cover specialized services. Items are newly added when government ministries find it necessary. National qualifications are similar to licenses. The Ministry of Health and Welfare manages 28 out of the 118 items, while the Ministry of Construction and Transportation governs 15, the Ministry of Maritime Affairs and Fisheries, 13, and the Ministry of Culture and Tourism, 12.

Non-official Qualifications

Non-official qualifications have been managed by the private sector without specific legislative grounds. Office management qualifications such as abacus calculation, bookkeeping, and typewriting were first given by the private sector before being absorbed into the national technical qualification system. Public attention to non-official qualifications began to rise following the enactment of the Basic Act on Qualifications in 1997. Today, Korea has 500-600 non-official qualifications.

In accordance with the Basic Act on Qualifications, the Korean government operates a publicly authorized non-official qualifications system, through which it certifies the quality of non-official qualifications. Under this system, the government certifies qualifications managed by private organizations or individuals based on survey results and research conducted by KRIVET. Since March 2000, a total of 51 qualification items governed by 31 organizations have been certified.

Figure 9. Operational Structure of Publicly Authorized Non-official Qualification System



Source: Lee, Dong-Im (2005).

Table 43. Publicly Authorized Non-official Qualifications

	2000	2001	2002	2003	2004
Number of qualification items	28	7	5	7	7
Number of organizations	12	7	5	6	7

Note: Some of the certifications
Source: Lee, Dong-Im (2005).

In-house Qualifications

In-house qualifications refer to vocational qualifications assessed and acknowledged by the employer or employer groups (employers' association or alliance in some cases) according to specified procedures as a way of developing and improving employees' job capabilities.

In-house qualifications are significant in that companies can improve employee productivity and help employees develop capabilities required for

their jobs. Also, companies can use in-house qualifications to improve the skill levels of their workers by taking into consideration an assessment of job capability in human resource management decision-making.

The Ministry of Labor supports the development of quality in-house qualifications. It certifies in-house qualifications systematically managed and operated by companies based on studies carried out by KRIVET. Government support for in-house qualifications is in accordance with the In-house Qualification Examination Support Regulations enforced in 1999. These regulations specify standards and availability of assistance for in-house qualification examinations administered by employers to develop employees' vocational competencies. Currently, there are 49 qualification items managed by 15 companies that have been acknowledged in accordance with these regulations. These companies receive government aid in terms of development and examination costs.

In-house qualifications are better than national technical qualifications in terms of effectiveness and usefulness, and are characterized as follows.

First, the objective of in-house qualifications is to help employees develop the expertise needed by companies, while at the same time encouraging them to improve their vocational competencies. Hence in-house qualifications have the advantage of being directly applicable to industry.

Second, in-house qualifications are managed and governed according to the particular needs of the companies concerned. Consequently, there is a range of in-house qualifications at various levels, and with differing examination types, and eligibilities. The level of the qualification to be acquired is determined based on the level of the employee's duties. Also, skill qualification examinations employ facilities or equipment used in the field. Eligibility is based on field experience and vocational education or training courses.

Third, examinations for in-house qualifications test the capabilities essential to job performance.

Fourth, companies set the validity period and provide employees with complementary educational courses to maintain the quality of in-house qualifications.

Fifth, in-house qualifications contribute directly to improving companies' productivity levels.

Sixth, in-house qualifications are used more practically in human resource management decision-making, including for example matters related to promotion, pay compensation, education and training, and re-allocation or transfer.

a. An Example of In-house Qualification at Firm A

Firm A runs an in-house technical qualification system in order to “award job skills qualifications to production workers based on evaluation by different functions.” The aim is to foster self-development initiatives by workers and to establish a system for assessing their vocational competencies. Employees on production lines are eligible for the in-house qualifications, of which there are ten for different skills. There are altogether 4 grades, which are from low to high: Grade 3, Grade 2, Grade 1 and Master. Examinations take place once a year. Table 44 shows the skills required for each grade and the qualifications of eligibility (Lee, Byunghee et al. 2004).

Table 44. Skills Requirement and Eligibility by Qualification Grade

Grade	Skills Requirement	Conditions of Eligibility
Master	Possesses the highest level of skills for performing the relevant standard task as well as the ability to use them in managing tasks, overseeing technical performance, and other supervisory functions	Person who performs the standard task, who has acquired minimum 3 years of work experience since earning Grade 1 in-house technical qualification for the same skills
1	Possesses high level of skills for performing the relevant standard task, as well as the ability to apply these skills in manufacturing, repairing, examining, and carrying out supervisory technical roles	Person who performs the standard task, who has acquired minimum 2 years of work experience since earning Grade 2 qualification for the same skills
2	Possesses medium level of skills for performing the relevant standard task and the ability to manufacture repair, maintain, test and perform other key tasks	Person who performs the standard task, who has acquired minimum 2 years of working experience since earning Grade 3 qualification for the same skills
3	Possesses basic level of skills to assist higher level tasks or to perform the relevant tasks under supervision	Person who performs the standard task, who has acquired minimum 1 year experience since joining the company

Source: Firm A internal documents, September 2003

Evaluation Method and Criteria

To evaluate the skills of applicants, Firm A conducts written exams to determine level of knowledge and tests the execution of individual tasks. In 2003, the company added an interview process to the Master grade examination. To earn Grade 2 and 3, the examinee must receive a minimum of 60 points on both the written and execution tests. Grade 1 applicants

must earn a minimum of 70 points for the two exams, and Master Grade applicants at least 80 points (also for the interview). An interview, required only for the Master Grade qualification is aimed at evaluating the applicant in terms of work experience, expert knowledge, on-site management, integrity and esteem.

Firm A offers a number of incentives to employees who have earned in-house technical qualification. For example, it gives bonus pay based on a scale, which varies by the employee's rank in the organization. In addition to the qualification bonus, the company gives preferential opportunities for training and promotion. Moreover, these people are trained to serve as OJT leaders in their departments. (Lee, Byunghee, 2004).

The company has set guidelines on what level of qualification is required for each level of position in the organization. Therefore, a person seeking to be promoted must acquire the appropriate qualifications. In other words, there is a certain qualification level to be met for person in each position in order to be promoted to the next grade. For instance, a person is required to acquire a level 3 qualification to be promoted to Grade 6, while a person seeking to be promoted to Grade 4 needs to acquire a level 2 qualification. Making such qualification mandatory can have a significant effect in terms of motivating people quite aside from monetary or other reward incentives.

VII. Policy Direction and Tasks

Over the past 40 years, Korea has experienced dramatic economic growth, which, it is probably fair to say, has been unprecedented in world history. This phenomenal growth, hailed as the "Miracle of the Han River," was made possible by a state-led export-oriented industrialization strategy, despite the fact that Korea lacked natural resources. Another key factor contributing to Korea's economic expansion was the strong emphasis that the Korean people placed on education, which allowed for the development of a high quality industrial workforce despite the low income levels that prevailed at the time.

However, the government-led export-oriented development policy began to show its limitations in the 1990s. In particular, the modest economic growth rate attained in the wake of the Asian Financial Crisis in 1997 made it clear that Korea had reached a point where it needed to shift away from a conventional factor-driven growth strategy toward a new development strategy.

Meanwhile, the contemporary socio-economic environment at home and abroad has added further urgency to the need for devising a new strategy:

Externally, Korea is facing the challenges of having to create new business opportunities through such mechanisms as free trade agreements (FTAs) amid the rapid reshaping of the international trade order. Also, competition with advanced countries is intensifying in high-tech industries at the same time as economic latecomers, namely the BRICs, are fast catching up in traditional industries. Internally, Korea needs to address a myriad of issues such as the declining fertility rate, an aging population, educated youth unemployment, an increasing number of irregular workers, greater inequality in the distribution of wealth, and a widening skills gap, to name just a few, all of which call for a growth strategy promoting social integration. In order to set the stage for another economic take-off based on a new strategy, Korea needs to pay attention once again to the issue of workforce development, an issue that commands even greater urgency given the fact that Korea is now witnessing a swift transition to a knowledge-based economy, where knowledge and innovation translate into a key production factor and competitive advantage, respectively.

Such a transition demands that the government put in place a more systematic and strategic workforce development policy. It must find a new growth engine by investing in core talent development while extending education and training opportunities to the needy, as investment in human capital is linked to future income. This will promote social integration, which in turn will lay the groundwork for sustainable growth.

The policy directions suggested by this book for workforce development are:

First, pro-market workforce development; private-led, consumer-oriented (as opposed to public-led, supplier-oriented) policy that strengthens collaboration between industry and academia is an essential prerequisite. Not only should it promote the ideal of striving for excellence in order to survive in an environment of unfettered competition, but at the same time efforts should be made to eliminate obstacles to fostering core competencies and innovative competencies.

Second, education and training that promotes social integration is another critical requirement. Neo-liberal globalization and innovation in information and communication technology are causing socio-economic polarization and the emergence of a digital divide. As such, the importance of education and training is growing as a way to overcome the digital divide and labor market deficiencies and bring about social integration. One of the major aims of workforce development policy is to bridge the knowledge and income gaps for the underprivileged, thereby facilitating social integration.

Third, the principle of partnership for workforce development must be established. In today's "network" society, in which competition is intensifying while close and organic relations among stakeholders are being formed, cooperation and partnerships are also called for in the area of education and training. To this end, a strong and functioning education and training network needs to be formed, characterized by close collaboration and active participation between government, companies, labor unions, workers, and education and training institutes.

The following text outlines key policy issues and challenges in relation to workforce development based on the abovementioned policy directions.

Strengthening School-Industry Collaboration

School education has been much criticized for its lack of relevance to the actual work environment, which has contributed to increasing youth unemployment. The ideal and perhaps only way to overcome this problem is for schools and industries to actively collaborate with each other. School-industry collaboration is an approach that involves cooperation in the areas

of R&D, HRD, and the use and transfer of technology and knowledge. The government has introduced many policies to encourage such cooperation between the two sectors, but the outcome has generally been rated as unsatisfactory. Policy-wise, the government should carry out four key tasks in order to foster cooperation between schools and the businesses.

The first is to evaluate existing projects involving school-industry collaboration or those that aim to foster it. Questions are being raised of late about the effectiveness of such public initiatives. Most simply involve allocating budgets to colleges and universities, and fall short when it comes to structuring projects to the specific characteristics of the schools and the regions. The authorities should monitor project progress and assess the deliverables in order to identify potential issues and resolve them.

The government should seek to decentralize the initiative for promoting school-industry collaboration and organize the support for the institutions and companies engaged in such partnerships in a more systematic way. In doing so, the authorities should look beyond merely confining support to the universities and research institutions. They should try to understand the bigger landscape—i.e., the unique conditions of the region and the characteristics of the local educational institutions—to create a framework for school-industry cooperation in which all the relevant parties can actively participate. This also refers, in part, to regional integration. True synergy can be generated when the partnership between schools and industries builds meaningful links, for example in the form of school-research-industry clusters. The local government bodies should lay the necessary framework, serving as the focal point.

The third issue that needs to be addressed by policy is the unequal relationship between school and industry. Collaboration has until now been initiated and led by schools more than businesses, and going forward the suppliers, i.e., schools, and the demanders, the businesses, should cooperate on an equal footing. To achieve this, the government should shift from providing support via schools towards assisting companies to better reflect their needs in joint projects with educational institutions.

Self-directed Learning and Training

As economies worldwide becoming increasingly knowledge-based, labor mobility increases while the security provided by a “lifelong workplace” is no longer relevant in today’s changing labor market conditions. The outdated concept is being replaced by “lifelong occupation,” which is quickly gaining importance. The number of years a worker can expect to stay with a company continues to drop while the possibility of him or her moving to another

company increases. This gives less incentive for the employer to invest in the development of the employees in the company and more reason to rely on the labor market outside the company. For the individual, skills development is becoming more and more his or her own responsibility, and hence greater assistance should be given to self-directed learning and training. Promoting self-directed learning is important also with respect to resolving the bipolarization of HRD, in other words, the widening of the gap between the advantaged and disadvantaged classes in access to training opportunities.

The government has concentrated much of its resources to supporting the Vocational Competency Development Project (VCDP). The VCDP is focused on supporting vocational training provided by employers, and hence it contributes only to a limited extent to self-directed learning. The limited government support for self-directed learning includes subsidies for workers taking classes and tuition loans also targeted at employed workers.

Promoting self-directed learning requires taking policy initiatives to address four issues of concern. The first initiative taken should be in reducing the time constraints that hinder participation in learning activities. Secondly, the current support system should be reconsidered and reorganized in ways that will effectively subsidize self-directed learning.[34] Thirdly, there should be objective assessment of an individual's vocational competency level, which is a prerequisite for meaningful learning to take place. Such an assessment will identify what the person is lacking in terms of skills and/or knowledge and what his or her strengths are. Based on this understanding, a learning portfolio can be created towards overcoming weaknesses and building on strengths to ensure greater efficiency in learning. Finally, there should be improved delivery of information and counseling for prospective learners.

Promoting Equity in Learning Opportunities for the Employed

Globalization and rapid advances in information technology have influenced the labor market, widening the gap between the skilled and the un-skilled in terms of income and employment. This polarization has brought greater employment opportunities and compensation for the highly-skilled, who can compete in the domestic or, even, international labor market. On the other hand, the less-skilled and/or irregular workers who make up the vulnerable group in the labor market have difficulty accessing training. Workers in this group have fallen into a vicious cycle of

[34] It is difficult to support self-directed learning under the existing Employment Insurance System, under which the employer bears the burden of training costs.

unstable employment-unemployment-unstable income, and an increasing number of workers are becoming part of this group. The current policy of vocational competency development lacks consideration for the population not insured by Employment Insurance, such as the self-employed. Projects financed by Employment Insurance have focused on the large corporations and full-time regular employees. In order to reduce the population of the poor working class and to develop the workforce in a way that promotes social integration, the VCDP should embrace the more vulnerable worker groups, such as those in SMEs, low-income workers, irregular workers and the self-employed, etc. At the same time, there should be differentiated approaches to fostering the training and learning of these groups by taking into consideration their specific characteristics.

Another group overlooked in the existing vocational competency development policies is the middle-aged and the elderly. There is an urgent need to devise ways and forms of support for these older individuals to enhance their employability through training.

The low-income group also requires special attention, as training alone will not substantially increase their employment opportunities. A network of assistance systems comprising education/training, employment and social welfare should be developed in order to help this group.

Qualification System Reform

A qualification is a recognizable certificate of one's possession of vocational competencies demanded in the world of work. As such it serves as a signal, which is commonly understood by the educational sector and the labor market.[35] A qualification system refers to a system for managing and issuing qualifications, which serves as a vocational competency indicator, in a way that is relevant to the real work environment and is aligned and thus compatible with the lifelong learning system. However, the management and control of the Korean Qualification System is centralized, which undermines its relevance to the actual workplace. Moreover, a qualification is most often pursued as nothing more than something to add on to the resume in order to get the first job. Hence, it is often the case that qualifications are not meaningfully used. On top of this, qualifications and school education are not closely linked.

35 In Korea, the school credit system, comprising the various degrees, exists independently of qualifications. Therefore, a supplementary relationship between the degree system and the qualification system needs to be established to serve as recognizable signals in the labor market.

Reform of the qualification system should aim for a more demand-driven management approach, which will help strengthen the link between education and the labor market. Policy measures to reform the qualification system effectively should focus on three critical aspects.

The government should try to move away from a one-off certification approach. Currently, the system is focused solely on evaluating the applicant's skills level at the time, but there is no subsequent assessment of skills enhancement that comes as the individual acquires more experience in the field. This limits the qualification's function as an accurate indicator of the individual's level of skills. To serve as a meaningful indicator of a person's skills or abilities in the way that a qualification should, there needs to be a mechanism to recognize and evaluate improvements in a person's skills level.

Another issue to address is the lack of linkage between the educational credit/degree system and the qualifications system. If a way can be found to closely link qualifications to the educational process by which degrees are earned, then the two systems may make up for what the other lacks. This will in turn contribute to making school education more relevant to the needs of industry, and ultimately to establishing a qualification system that responds to social and economic changes. Re-defining the relationship between qualifications and degrees can help lay the foundation for a better integrated HRD system and restore public trust in and recognition of qualifications.

No less important is the creation of the right infrastructure for the qualifications system. The key function of the qualifications system is to assess and accredit the skills of individuals. To be effective, such a system needs to be supported by data infrastructure, which houses and disseminates all the relevant information about types of qualifications, qualification holders, and education and training. At the same time, job classification criteria should be reorganized based on the changing demands for qualifications, and these criteria should be aligned with the classification of education and training levels.

Involvement of Social Partners in Workforce Development

To ensure that skills are relevant to the evolving requirements and conditions of industry, industries themselves need to take the initiative in VET.[36] No one can monitor skills demands more accurately and consistently than

36 For more efficient VET, the identification of skills needs, development of skills standards and training programs, and training performance evaluations should be carried out in a more systematic manner.

the industries that actually avail themselves of the available skilled labor pool. An industry initiative is more effective when it is organized than when it is dispersed among individual companies going their own ways as far as employee training and development is concerned. VET in Korea is still viewed as centralized and supply-oriented, largely because in the past its economy was industrialized by state initiative, and the role of private companies was restricted. The state has also played the dominant role to date in the education and training sectors, and as a result the history of "partnership" between the government and the private sector is limited to say the least.

To have employer associations and labor unions organize themselves at the industry level to participate in skills formation, they need first to have the capacity to contribute to such a goal. Enhancing such a capacity requires adequate resources, in terms of financial budgets and industry expertise; this is where the government can fulfill its role by providing the administrative and financial assistance necessary for these organizations to be able to meet this goal. Strengthening the HRD Sector Council, which the government has recently launched as part of a sectoral approach to developing skills, could help in this regard.

Planning and implementing policies for skills formation can be more effective when the relevant social partners engage and collaborate. The stakeholders, namely the government, labor unions, employers' organizations, private companies, VET institutions, and non-profit organizations need to fully understand their roles and to allocate responsibilities. If this can achieved effectively, then it will also be possible to increase productivity, improve the quality of working life, and raise national competitiveness (Mitchell, 1998).

Management and Coordination of Workforce Development Policies

For workforce development policies to be efficient, the ministries involved in the supply and demand of human resources need to work closely together. Recently, several government bodies have become involved in VET, but lacking coordination they have initiated projects which have become more or less redundant. This has been a major source of inefficiency, which only better coordination of policies can resolve. Ultimately such an effort should go beyond just minimizing inefficiencies and aim to create synergy in the work being done by different ministries. To achieve this, the central government agencies, local government bodies, and non-profit organizations need to play their proper roles.

The central government should attach greater importance to the Ministerial Commission on HRD so that it can serve as a foundation for policy implementation and collaboration. Furthermore, the government should strengthen the expertise of the Ministerial Commission on HRD and its capacity to assess policies. The government also needs to streamline the policy development, implementation and monitoring processes so that all the relevant elements, such as budget, data for policy assessment, and policy evaluation, are valid.

Essential to better coordination is collaboration between the central and the local governments in workforce development. Fostering the participation of regional entities to make workforce development initiatives serve the needs of the regional industries and to create jobs has become a major policy task for the government. Workforce development at the regional level requires enhanced capacities on the part of industries, government bodies and institutions of the region. When this condition is met, budget management and training responsibilities can be decentralized to the local stakeholders so that they can create and implement policies suited to their needs by themselves. Training should focus on helping local workers become experts who will be active in their region. It is also important to create a regional-level database and active network connecting local government bodies, VET institutions, business enterprises, and research organizations.

Civil society has a critical role to play in fostering skilled human resources as well as achieving an efficient allocation and leveraging of those resources. The participation of NGOs and industries in policymaking is essential in order to have the various needs of all parties—the individual, the region, the organization, the nation, NGOs and industry addressed. Therefore, the various nonprofit and nongovernmental organizations should be encouraged to get involved and to work with the HRD Sector Council.

Information Infrastructure Development

VET and labor market information can be leveraged as a tool to raise efficiency in the VET system and stabilize employment. The rapid developments in knowledge and technology in today's economy have led to changes and advances in labor market and industrial structures. In this environment, the timely provision of information about education and employment opportunities takes on even greater importance. Reliable information can help strengthen the link between education and the labor market, and ensure the currency and validity of qualifications, and evaluation and accreditation systems. In fact, qualifications can be authoritative to the extent relevant information satisfying a certain level of credibility is made available. The

value of public employment stability services is also critically impacted by the quality and reliability of the information service available.

Korea has one of the world's best IT infrastructures and boasts the highest level of Internet usage in the world. These conditions are suitable for ensuring an agile response to the latest developments in knowledge and information technology. Nevertheless, the country lags behind in the creation of value-added knowledge through the processing and analysis of data, which in fact is the most critical element of human resources information. This is because the government has failed to see that providing information about human resources is no less important than building social infrastructure.

Establishing an effective VET information infrastructure requires the implementation of several policy measures. First of all, it is necessary to create statistics to capture the current quality of human resources available in terms of education, training, qualifications, skill levels and work experience. The right framework or system needs to be in place to generate the appropriate statistics. Currently, most statistics are focused on economic indicators, and hence the human resources aspect is not adequately reflected. Secondly, a logical data classification system should be created in order to enhance the reliability of data. A lack of credibility in the information available leads to unnecessary costs in decision-making by economic players and/or policymakers. To avoid such costs, quantitative data, such as research statistics and administrative statistics, and dispersed qualitative data should be consolidated and classified to allow for effective processing and analysis for future projection requirements. Finally, the information and data should be linked more effectively to make them meaningful and useful to policymakers, decision-makers, researchers and job-seekers in general. Information from the educational sector and labor market should be linked, and labor supply and demand projections should be improved to ensure the regular delivery of information.

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